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

Volume 39 Number 6 / June 1971

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NEWS/POLICY

Letting federal S&Ls sell stock-and another reach for more of mortgage market

1970 STATISTICAL PROFILE OF S&Ls

"Equity capital" has become a rallying cry for the nation's \$190-billion savings and loan business.

The Federal Home Loan Bank Board, pressing to take the sals into wider areas of the mortgage market, says the thrift institutions need more sources of funds. The regulatory body stresses that this means equity capital.

So the bank board has endorsed legislation that could revamp the entire savings and loan system.

Conversion rights. Capitalstock associations could acquire federal charters and continue to issue shares. State-chartered mutual associations could also acquire federal charters, and they and the other federals, all mutuals, could then convert to stock associations and begin to sell stock.

The proposal would give the converting sals wide new access to the private investor and could provide enormous support for the mortgage market-via the associations.

There are 2,050 federal associations, all owned mutually, or by their depositors. There are 3.000 state-chartered mutuals and about 665 that are stockholder-owned, but the stock associations-particularly in the state of California-are among the nation's largest and most powerful.

The bill's chances. The board's endorsement of federal stock legislation-which has been proposed repeatedly over the years by the sals themselves -lifts the proposal a rung up the legislative ladder. The bill may not be enacted this year, but the Nixon administration's support means a united industrygovernment effort to win passage.

The opposition is led by the Council of Mutual Savings Institutions of New York City. It argues that the Federal Savings & Loan Insurance Corporation's losses have been relatively 74% greater for insured stock sals than for insured mutuals, and it contends that stock sals are scarcely worthy of federal favor.

The council is particularly incensed because the bank board has refused to lift an eightyear-old moratorium on conversions of federal associations

			\$ Mi	llions					
		Dec.	31, 1970-					1970-	
5&L	Assets	Savings	HLB Ad.	Equity	Loans	Interest		expense	
alif. Fin. ar West Fin.	\$309.0 366.4	\$218.1 265.8	\$27.5 51.0	\$25.7 34.5	\$273.1 307.4	21.1	\$23.7 25.9 18.1		d\$1.18 1.01 1.87
in. Cp. San. B. First Charter First Lincoln	265.9 2,872.6 453.3	210.7 2,063.1 312.9	24.9 401.1 103.4	16.6 261.6 26.3	232.1 2,556.9 387.7	164.4	184.9 26.4	130.1	27.40 d 4.56
first S&L Sh.* fin. Feder. Sibraltar	216.4 1,133.1 825.2	147.6 868.2 605.1	36.8 162.5 131.0	12.5 74.4 65.0	193.8 953.1 723.7	64.5 49.1	12.5 74.3 55.8	41.9	1.02 d 2.24 3.58
Art. West.b fomestead	3,457.7 41.5	2,459.8 31.1	642.9 4.3	237.1	3,052.5 32.7		230.6	175.2 1.8	6.36
mp. Cp. Am.* Dak Cliff* Pacific S&L	1,499.9 317.5 255.2	1,144.2 230.9 178.9	165.5 40.4 43.2	128.5 23.6 21.2	1,310.8 278.7 227.6	17.3 14.9	97.4 20.6 17.8	69.6 14.1 11.9	9.05 1.86 2.23
rans-Coast rans-World	108.1 363.4	80.8 256.9	9.8 58.0	12.7 29.9	91.9 290.8		7.3 26.5	4.7	1.34
Inion Fin.*	219.5	171.7	15.8	13.4	179.0		19.0 28.5	9.7 21.8	0.82

Union Fin.* United Fin. Cal. Wesco Fin. Western Fin.*	219.5 422.1 439.5 324.5	171.7 296.2 288.7 253.3	15.8 71.0 77.6 24.3		179.0 366.7 381.1 267.3	11.8 23.9 25.9 16.1	19.0 28.5 30.4 21.6	9.7 21.8 22.2 14.5	0.82 0.13 3.05 1.65
TOTAL	\$13,890.8	\$10,084.0	\$2,091.0	\$1,106.3	\$12,106.9	\$789.3	\$924.6	\$676.0	\$55.68
% Chng.	+6.4	+4.6	+13.4	+6.1	+6.5	+11.3	+9.2	+14.0	-23.3
% Indust. chng	. +8.9	+8.1	+12.5	+6.9	+7.3				

Source: Audit Report, 230 Park Ave., N.Y., N.Y. 10017. * Operates primarily outside California. b-Pro forma including acquisitions.

SHARE DATA OF S&L COMPANIES

Issue & Listing	Book Val.	Recent Price	Shares (000)		Earning p 1969 Yr.		1Q '70	P/E# Ratio	Mkt./ Book
Calif. FinNYSE	7.30	9.25	3,529	d0.34	0.48	0.14	0.11		1.3
Far West-NYSE	18.45	15.75	1,868	0.71	1.40	0.24	0.26		0.9
Fin. Cp. S. BASE	16.00	25.50	1,039	1.75r	1.60r	0.52	0.41		1.6
Fin. FederNYSE	22.42	20.88	3,320	d0.67	0.44	0.23	d0.05		0.9
First Charter-NYSE	11.91	24.75	21,912	1.25a	1.27a	0.34a	0.25a		2.1
First Lincoln-OTC	10.92	9.38b	2,405	d2.35	d0.50	0.08	d	d	0.9
First S&L Sh.*-ASE	22.12	22.00	544	1.86c	1.73c	0.47	0.25	10.0	1.0
Gibraltar FinNYSE	25.47	24.13	2,553	1.38	2.24	0.38	0.39	17.5	0.9
Grt. West. FinNYSE	15.92	27.50	14,895	0.53r	0.84r	0.41	0.19	36.7	1.7
Homestead FinOTC	5.24	8.00b	1,333	0.73	0.99	NR	NR	11.0	1.5
Imp. Cp. Am.*-NYSE	12.89	15.13	1,037	0.91	1.00	NR	NR	16.6	1.2
Oak Cliff*-OTC	23.58	24.50b		1.87	1.90	0.50	0.29	11.8	1.0
Pacific S&L-ASE	20.47	26.00		2.15	1.97	NR	NR	12.1	1.3
Trans-Coast-OTC	4.58	5.75b		0.40	0.52	0.11	0.07	13.1	1.3
Trans-World-NYSE	12.77	12.63		0.70	d0.10	0.22	0.16	16.2	1.0
Union Fin.*-ASE	14.27	15.00	941	0.69	1.28	0.23	0.09	18.1	1.0
Utd. Fin. CalNYSE	16.36	11.38	2,800	0.05	0.91	0.15	0.10	11.3	0.7
Wesco FinNYSE	27.59	22.00	2,153	1.42a	1.85a	0.29	0.29	15.5	0.8
Western Fin.*-ASE	17.63	19.88	1,035	1.60	1.63	0.42	0.40	12.3	1.1

Source: Audit Report, 230 Park Av a-Adjusted for stock dividends and splits. b-Bid price. c-Years ending June. ates primarily outside California. NR-No report. r-Restated for acquisitions. 12 mon. earnings. d-Deficit. * Oper-#-Based on latest

to state-chartered stock institutions. The ban will be lifted if the federal stock legislation is enacted.

Preston Martin, the board's chairman and a Californian, explains:

"The purpose of this moratorium is to prevent windfalls from accruing to an individual not so entitled. This moratorium remains in effect until regulations are issued that will provide the proper mechanisms for orderly conversions on a fair and equitable basis."

Martin adds that the regulations won't be issued "until new legislation is passed enabling a federal stock form of organization."

The rewards. In moving for a federal capital-stock S&L system, the board chose April 19 as its cutoff record date for savers to share in the distribution of a converting institution's net worth.

It is the disbursement of an association's reserves that is likely to cause the most trouble with the legislation. Opinions differ as to how this should be done.

The bank board's proposal would let savers on record April 19, 1971, share the cash distribution of reserves, but some in the industry believe that the reserves of any converting institution should be left intact. The savers would be given a chance to purchase the new stock association's capital stock.

Board's position. The bank board's proposal is part of a larger legislative package, termed the Housing Institutions Modernization Act of 1971, and

the stock legislation stresses the need sals have for increasing their deposit base to meet housing needs.*

Martin notes that it is equity capital that provides leverage for this wider base.

Martin argues that in 1969 the ratio of reserves and capital to savings for sals was 8.5%. This means, he says, that one dollar in new capital can support about \$12 in new deposits. Since new capital cannot be raised by mutual associations to support new savings, these capital dollars must be retained out of profits.

"In periods of the greatest housing needs, retained earnings often tend to be low and the amount of deposits that can be supported is limited. This creates a vicious cycle."

A money tap. The board chairman says, however, that if federal sals have the option of operating under a stock charter, then in periods when savings growth was low and individuals were interested in equities, these associations could sell common stock and compete in the equity markets with other corporations. Then, when interest rates fell, and savings were increasing, the associations would have the capital base to support these savings regardless of current retained earnings of the sal.

Difficulties. In supporting a federal stock bill this year, the bank board may be heading off litigation on its moratorium against conversions. Despite the moratorium on conversions from federal to state stock associations, Citizens Federal S&L of San Francisco has already made plans to convert to a stock institution-and has gone so far as to issue its prospectus to existing savers.

While the bank board insists it is not considering any conversion applications because of its moratorium, the Citizens Federal case is almost certain to bring the moratorium's legality into question.

Martin has said of the Citizens Federal case that he hopes "that the parties in this institu-

^{*}The sal legislation is contained in HR 7740 (Patman), 7769 (Hanna) and 7809 (Widnall) and S 1671 (Sparkman). TO PAGE 8

two pre-finished, long life, exterior siding products based on all new, extra dense, extra rigid, weatherproof insulation board



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Marketing System. Effective sales aids and propost your traffic and sales. And a Man from National to help you all along the way.

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NEWS/POLICY

Letting federal savings and loan associations issue stock (continued)

tion will see that our legislation is the first step toward lifting the moratorium."

Advantages. The board expects a move to form the federal stock associations would lessen the board's supervisory problem cases—because the stock associations could raise capital.

"One of the principal reasons for the weakness of associations and the need for supervisory actions," Martin maintains, "is the inadequacy of net worth to absorb writedowns of bad loans and foreclosed real estate.



CALIFORNIA'S HANNA A green light for the S&Ls

"Low net worth has two effects. It discourages associations from taking a more aggressive leadership position in housing



BANK BOARD'S MARTIN Aiming at private investor

finance, and it decreases the flexibility and timing of corrective action between loss on loans and the resulting default on the savings accounts."

Martin noted, too, that the ability of the s&Ls to sell debentures and participation notes after conversion "is directly related to their ability to serve housing and savings needs."

The bank board's stand is nothing new. Some s&L lobbies have been asking for such legislation for more than ten years. Now, however, the Nixon administration is behind the proposal and the industry has a strong echo.

> —Andrew R. Mandala Washington

Panic of sorts sweeps mortgage markets-FHA prices plunge 2 points in a month

A turnabout in the capital markets thrust the secondary mortgage market into a state of nearpanic that sent prices into a steep dive in the last two months.

From April 12 to May 10, prices on FHA mortgages offered for 30-day delivery to the Federal National Mortgage Assn. dropped by more than 200 basis points or 2%, and this at a time when savings were flowing into thrift institutions at record rates. Secondary-market prices for the Government National Mortgage Association's mortgage-backed securities fell by a similar amount.

The period also saw a drop from 97 to 96 cents on the dollar in the prices the new Federal Home Loan Mortgage Corp. would pay for FHA and VA loans purchased from savings and loan associations.

Offerings. In its commitment auction on May 10, FNMA received bids from sellers to unload nearly \$1.2 billion worth of mortgages, compared with just \$127 million a month earlier. Mortgage companies from every section of the country sought FNMA's commitment, or guaranty, to buy their mortgages. Such commitments are known in the trade as coverage, and the frightened mortgage men were often described as running for cover.

Fear. The most puzzling aspect of the developments, experts said, was that they were for the most part unnecessary.

It had been generally agreed to by economists that interest rates would increase later this year, but the sharp turnabout in the mortgage market seemed more a psychological overreaction than anything else.

For instance, Chairman Preston Martin of the Home Loan Bank Board had indeed said that heavy savings inflows to S&L associations, the nation's heaviest private mortgage buyers, could not be expected to last forever. But Martin's agency had nevertheless reported that firstquarter savings gains for associations totaled nearly \$9 billion, virtually assuring an adequate amount of mortgage money for 1971. Moreover, associations had increased their loan commitments outstanding in March to a total of \$6.5 billion. In March alone, new loan commitments made by the s&Ls totaled \$3 billion.

Coverage. Some concern had been expressed by mortgage bankers lest a two-step increase in liquidity requirements for savings associations sop up some funds that might otherwise go into mortgages. But the heavy increases in savings more than made up for the increase in liquidity levels.

The real keynote to the panic

Savings bankers elect president

He is Alfred S. Mills, chairman and chief executive officer of the New York Bank for Savings* and a pioneer in providing housing for low-income families in New York State's inner cities.

Mills has just been elected president of the National Association of Mutual Savings Banks at the trade group's 51st annual conference in Montreal. He succeeds Frederick C. Ober, president of the Newton (Mass.) Savings Bank.

The industry. The association represents most of the 494 savings banks operating in the 18 states where such banks are legal and in Puerto Rico. The group's members hold 99% of the industry's \$82.6 billion in assets.

Francis B. Nimick Jr., president of the Dollar Savings Bank of Pittsburgh, is the new vice president of the association. The post leads almost automatically to the presidency.

Low-income housing. Mills has helped obtain commitments from savings banks for \$175 million in financing for lowcost housing throughout New York state.

Mills's own bank has joined non-profit neighborhood organizations and government agencies to finance rehabilitation of 17 buildings that will contain 277 apartments for lowand middle-income families in Harlem. The bank and another New York City mutual, Bowery Savings, are pooling their construction and financing knowhow to build 15 new buildings with 1,125 units for the city. was the word coverage. Mortgage bankers have had trouble obtaining forward commitments, and they sought shelter at FNMA. But Fanny May's officials mde it clear they would not abet the stampede.

President Oakley Hunter of FNMA reacted to the billiondollar offering by accepting only \$237 million—about 22%. He also told seller-servicers to Fanny May that the corporation "must not permit overuse of our facilities."

Position of FNMA. Hunter noted too, that Fanny May has an "obligation to purchase mortgages which are within a range of market prices," adding that his corporation must gain sufficient profit to be self-sustaining.

"The action of FNMA in the auction reaches as far as these guidelines reasonably permit," Hunter contended. "Thrift institutions and other private investors have sufficient financial liquidity to absorb a major portion of the demand for residential mortgage production."

\$10-billion level. The Fanny May president noted that the \$237 million accepted at the mid-May auction exceeds an annual mortgage market support rate of \$6 billion a year.

"This level of assistance plus FNMA commitments on multifamily projects could approach a \$10 billion annual rate," he said. "Such a degree of financial input to the market in a period when savings flows to thrift institutions are heavy can be justified only on the grounds of disorderly conditions in the capital markets." —A. M.

^{*}Ranking by deposits, Dec. 31: Bowery, New York, \$2.7 billion; Dime Savings of N.Y., Brooklyn, \$2.2 billion; Philadelphia Savings Fund Society, \$2.15 billion; N.Y. Bank for Savings, \$1.89 billion.

For ten selfish reasons, Levitt Building Systems chose Sears kitchen appliances.

Here's why:

"Quality is what we get from Sears," says Charles Biederman of Levitt.

And with every eye in the industry focused on this revolutionary new venture into modular townhouses, quality is one thing Levitt doesn't intend to skimp on.

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- 8. free design assistance
- 9. contract sales specialists

10. 85 years of customer satisfaction

"Having Sears kitchen appliances in these exciting new homes will give us a real boost when it comes to sales."

If Mr. Biederman is right, that might well be the best reason of all.



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NEWS/MARKETING

The Levitt blowup: merger malaise takes toll of two more housing leaders

They simply couldn't communicate.

All the quotes and rationalizations and non-explanations from Dick Wasserman and Dick Bernhard and Harold Geneen and, yes, even Bill Levitt, added up to that.

Another merger of a building company into an industrial giant had gone wrong—at least in part.

For Richard M. Wasserman, one of the brightest of the rising stars in housing's firmament, had up and quit at 44 as the \$150,000 president of ITT Levitt, the nation's largest homebuilder.

And when Harold S. Geneen, president of the \$6½-billion International Telephone & Telegraph Co., offered the job to Richard P. Bernhard, 41, the Levitt No. 2 man, Bernhard quit too.

"I was flattered to be asked," Bernhard explained, "but I said, "Thanks—but no thanks.""

King's return. It was homebuilding's biggest blowup of the year. The double defection struck ITT's New York headquarters like a bombshell, and that button-down executive suite had always prided itself on being surprise-proof.

The ITT reflex was to haul 64-year-old Bill Levitt out of retirement (and away from a highly agreeable co-existence with wife No. 3, age 41) to run the company he had founded in 1929 with his father and his brother.*

Levitt commanded an audience at New York's plush 21 Club, rather unfamiliar territory for the working press, and announced he would reassume the chief executive's title, succeeding Wasserman. He said Louis E. Fischer, a Levitt senior v.p., would replace Bernhard as an executive vice president, and that Norman Peterfreund would complete a ruling triumvirate by remaining an executive v.p.

In his only reference to the defections, Levitt said, "Some people can't live with a big management company over them. Some can, and I am one of



Levitt's Wasserman was cover subject for Business Week as recently as issue of Dec. 7.

those." And he insisted he would stay on duty as long as necessary.

But nobody, in or out of ITT, thought Bill Levitt was going to hang around any longer than it took to mesh the gears again. He would then be off to his wife and his new \$6-million yacht in the Mediterranean (see story, facing page.)

Why. What happened to shake housing's whiz kids loose from the enterprise whose name has become synonymous with quality homebuilding for the mass market?

Sudden as the resignations of Wasserman and Bernhard were, the discontent behind them had simmered for six to eight months. Both men left voicing high praise for ITT, admiration for its record of continued success, and even affection for Geneen, the chairman-president and guiding light of the worldwide conglomerate.

"No question about it," Wasserman said from Paris the day after his resignation had been made public. "ITT is a great company and Harold Geneen is a great guy. I've never had such an experience."

But from conversations with the two departing executives and with others in the Levitt operation, it became clear that all had not been well in relations between parent and subsidiary for some time.

Wasserman and Bernhard had signalled their discontent.

"But apparently no one was listening," one top Levitt holdover said, noting the esteem in which Wasserman was held by Geneen and ITT's reliance on Bernhard.

Communication gap. The most pervasive difficulty was lack of communication. It was perhaps occasioned by the mere size of ITT, with its scores of divisions in widely diversified lines of business. It may have had roots in a basic misunderstanding between an industrially oriented holding company and a subsidiary engaged in construction and in real estate op-

Big names (in housing) all left after mergers of great fanfare about how their new-found capital base would permit them to become national builders on a scale never seen before. In most cases, their new-found capital base was largely illusory: the corporate parent simply lent its name, as credit, and the newly merged builder was back at the bank borrowing to operate his business.

Richard W. O'Neill, former editor, HOUSE & HOME, in The O'Neill Letter. erations. It may have resulted from the inability of a longindependent, family-owned concern to adjust to a different climate when it became a cog no matter how important a cog —in a large machine.

"Perhaps we just have different life-styles," said Dick Bernhard, who had been in the Levitt organization for 10 years and was executive vice president until he quit. When Bernhard was offered Wasserman's job-a spokesman for Geneen would only say that "conversations were held" with Bernhard on the subject-Bernhard made it clear that both he and Wasserman wanted to leave and for basically the same reason: they felt that there was a lack of understanding of their way of doing things, no matter how pleasing the final results might be to ITT.

Wasserman hinted again at the communications gap when he commented on ITT's unwillingness to acknowledge Bernhard's refusal:

"They're probably waiting for it to be engraved on stone."

A subtle friction. All sides agree that ITT did not exercise a heavy hand in the affairs of Levitt and, at the same time, that the subsidiary was neither unruly nor defiant. The abrasions were more subtle. Levitt people mention such things as "different goals" pursued by the parent and the building concern, or "incompatibility" between traditional industry on the one hand, and the more iconoclastic construction business, on the other.

"I'm not saying they're wrong," a Levitt executive said of the ITT hierarchy, "but there never was real rapport.

"It isn't that they interfered. But there were frictions that we perhaps felt more than they did. It was really a conflict between the way they do things and the way we do. They're a management business and we're an entreprenurial business. Maybe there is a basic gap between the two."

Spokesmen for ITT, on the other hand, tend to ascribe the discontent in Levitt to personal desires on the part of Wasserman and Bernhard to "move in new directions."

Yet ITT prodded Levitt into

^{*} Asked his opinion on the Levitt summons, Eli Broad, president of Kaufman & Broad, another of the nation's biggest building companies, observed softly: "The king returns."

some areas about which Levitt was highly unenthusiastic. Spain and Brazil were mentioned as possible sites for Levitt operations. Everyone agrees that the pressure was not intense, however, and Levitt has turned one project initiated by ITT into a promising development. It is the 100,000-acre Palm Coast project in Florida (NEWS, Jan.).

As for moving abroad, Levitt has been building in France for years and it is pursuing a factorybuilt housing venture in Japan.

The future. What would the abrupt shifts at the top mean to Levitt as a business?

In the day-to-day operation, probably not much. The organization is large, middle management is strong, and the Levitt-trained staff has maintained high morale.

The company was in excellent shape. Wasserman, handpicked by Bill Levitt as his successor, had built the business impressively since the 1968 merger into ITT, and had recently completed an administrative reorganization establishing firmer control in the company's widening areas of activity. Levitt had weathered the 1969-70 housing slump better than almost any other producer. Sales hit a record \$250 million and in 1970 were expected to top \$300 million for fiscal 1971, which ended Feb. 1. Even more important to the parent ITT, profit is headed for a new peak. (Levitt has not announced profits since it posted \$3.98 million net on volume of \$93.6 million in 1967. Its sales were \$100 million in 1968 and \$225 million in 1969.)

Wanted—a leader. Both Wasserman and Bernhard agreed to stay on until July 1, and both expressed a desire to bring about an orderly transition in Levitt's affairs. Given the fact that most of the Levitt team has been together for several years, going back to the days when the company was privately held and later when it was publicly owned before the sale of ITT, the transition should not be difficult. But the rapid growth of its entry into new lines of endeavor—factory-built housing, mobile homes, and land sales most recently—makes firm guidance at the top essential.

With Bill Levitt an interim head at best, primarily because of his passion for retirement but also because of age, could the company develop a strong leader? The last thing ITT wanted was a subservient subsidiary.

A strong hand at the Levitt helm then—but where to find it? Bill Levitt's hand was firm enough, but it would be on the wheel of a yacht.

> -GLENN FOWLER New York City

N. Y. POST BY GUMMERE. (C) '71, N. Y. POST CORP.

Lunching with Levitt at the 21 Club or, the fork is mightier than the pen

The way to win an old reporter's heart is to wet his whistle just pour him a free drink.

No one has mastered that publicity secret better than William Jaird Levitt. So when he came out of retirement to run his old company last month, Bill rounded up his pals from the press for a booze and steak (with Béarnaise sauce) at New York's 21 Club.

Among friends. The lunch was billed as a press conference. But some of the older reporters, who looked as if they had crept out of retirement themselves for the occasion, were highly reluctant to put down forks and pick up pencils. And when one inquisitive soul asked Big Bill a mildly embarrassing question about whether Bill Jr. would return to ITT Levitt & Sons* along with his daddy, one of Levitt's old friends said: "Bill, please sit down and finish your dessert. You don't have to answer questions like that."

"No, no," said Levitt the diplomat. "This is a press conference. They can ask any questions they want."

And Levitt proceeded to make a joke of the first reporter's question.

The impertinents. Minutes later, however, there was another tough question. Had Rich-

* Former ITT Levitt Inc. is now ITT Levitt & Sons. Abraham founded the company in 1929. Sons were Alfred, now dead, and William J. ard Wasserman quit or been fired? Before Levitt could say, "Dick left on his own accord," the old pals who wanted him to eat muttered, "No, don't answer," and stalked from the table in apparent fits of disgust.

Yet the brusqueries continued. Younger reporters tried to pin down Levitt on why he had returned and on whether he was ITT's biggest stockholder. About all those young men got was:

"It's certainly fun to be back parrying your questions again."

Lady and the tiger. A newswoman, regal amid empty plates and a trail of Béarnaise, could take no more *lèse-majesté*.

"None of that matters," she said. "The only thing that does matter is that you're back, Bill, and we are all together again to welcome you back."

"In that case," came the Levitt riposte, "I'm sure you won't mind picking up the bill for today's lunch."

And all the reporters laughed. That Bill, what a card.

Exit line. Levitt was not quite such a card off camera.

One oldtimer, who had taken something of a going-over in the Q-and-A at the luncheon, tried to reopen a question with Bill in the elevator.

No dice.

"The press conference is over, Joe," Levitt said, and he sailed out the door. —F.L.



Levitt chairman, William J., and wife No. 3. ITT Levitt is no longer his only interest.

Levitt in private-life as a pleasure cruise

The yacht that has absorbed much of Bill Levitt's time and attention in the last year was to be launched late last month at the Marina Carrara in the Italian port of La Spezia.

The yacht will be christened La Belle Simone for the third Mrs. Levitt, the 41-year-old French beauty who has been married to the 64-year-old builder since 1969.

"Bill wants it to be the finest afloat," said a colleague at ITT Levitt a few weeks ago. "It may not be as big as the yacht Charlie Revson (of cosmetics fame) owns, but it's going to be crammed with so much sophisticated gear that Bill will be able to run it without a crew. And he won't even let it be compared with Onassis's boat. When anyone questions Bill about that, he asks: 'Who'd run around in a converted minesweeper?'''

The cost will be about \$6 million—some \$3 million for the craft itself, another \$1 million for furnishings and \$2 million for the artwork Bill plans to install. Mrs. Levitt is the former owner of an art gallery with branches in Rome, Paris, and Manhasset, N.Y.

"He was my best customer," she says, explaining how they met nine years ago. —G.F.

NEWS/MARKETING

Sewer disputes: how pollution and politics can halt homebuilding almost anywhere

A stiff new Illinois pollution law administered by a no-nonsense board, some politically muscled environmentalists, and a slow-moving sanitary district have all combined to make life miserable for builders in Lake County, north of Chicago.

The state's pollution control board last month ordered the North Shore Sanitary District, which serves the eastern half of Lake, not to permit sewer connections until the district expands a treatment plant's capacity from 8 million gallons a day to 18 million. Any hardship that resulted, the board stated, would be more than justified by preventing increased pollution of Lake Michigan.

Losses. "It's just another variation on the old game of 'Get the Builder,'" complained one Lake County homebuilder.

And it appeared that way. The immediate result of the board's order could be the suspension of \$120 million in construction for the balance of this year. according to Jack Lageschulte, president of the HBA of Lake County. Lageschulte was unable to give the precise figures on how much of \$120 million was in residential construction, but he said it was "substantial." Other figures cited by Lageschulte if the ban remains in effect: \$48 million in lost wages and 41,000 lost jobs in the building trades.

Five-year task. If the ruling stands, construction will halt and not just for this year. Even if the Clavey Road plant could be funded immediately, observers estimate, it would be at least $2\frac{1}{2}$ years before the expansion could be completed. The project has been stalled for several years, and it remains enmeshed in legal, financial, political, and environmental problems.

"It's likely to be at least five years before the plant is ready," says Peter Collins, a lawyer for a group of North Shore homebuilders, bankers, manufacturers, and union leaders who are fighting the ban.

A total building ban would reverse a substantial growth trend. Between 1960 and 1970, the county grew by a third, and estimates are that the present population of 200,000 will jump to 350,000 by 1990.



Sewer-connection ban halted building in the North Shore Sanitary District (above), which covers eastern half of 450-square-mile Lake Country, north of Chicago. The Clavey Road treatment plant, which services most of district, is at bottom of map.

National problem. Sewers have become a problem for builders in much of the nation.

Connections have been banned in Atlanta, Cleveland, St. Louis County, and San Francisco. Only Cleveland's ban remains in force, but its effect on homebuilding is minimal because it affects only the city.

The Illinois suspension, on the other hand, could last for several years and create extensive hardship among homebuilders.

"If this ruling stands," says Lageschulte, "many of our members will go bankrupt."

What happens in Illinois could happen almost anywhere within a few years. Many observers (McGraw-Hill's Air and Water News, for one) feel that Illinois now has the toughest antipollution control legislation in the country. Add a full-time pollution control board that seems bent on enforcement of all the pollution codes; a governor and an attorney general who, as political rivals, vie for the best environmental image; and a powerful group of vocal environmentalists. The

result is trouble for builders. Builder as target. "We're the most vulnerable and visible," says Lageschulte.

"We're not against cleaning up the environment," he says. "There is no question that the North Shore Sanitary District is polluting." But he is quick to add:

"U.S. Steel admittedly dumps 30,000 tons of pollution into the lake every day, yet the company can get delay after delay in construction of facilities to end this pollution."

Problems. Individual builders are reluctant to detail their problems. Said one: "If I tell you my difficulties, my line of credit could disappear."

Says another developer:

"Even if you already have sewer permits for the units you're putting up and the bans do not apply to them, the real crunch comes for the units that you planned but find yourself unable to build.

"Let's say a developer has purchased 100 acres and plans to build in three stages. He gets the sewer permits for the first section and builds, but he's stalled on the others. He could easily go broke."

Developers also fear that the public may think that new homes will have difficulty getting sewer permits and so stick to the used home market.

Counterattack. Illinois builders are proceeding on four fronts, according to Lageschulte. They plan to present their

case to Gov. Richard Ogilvie in the hope of sympathy.

The legislators of Lake County have filed a bill in this session of the legislature to limit the pollution board's powers in cases where economic hardship could result and to require the board to give substantial notice in cases where it prevents use of public utilities by individuals.

The builders will file individually for variances from the board's ruling and will utilize the legal remedies of the board and possibly of judicial review of the board's decision.

And finally, the builders' group is considering seeking judicial restraint of some of the board's powers.

-MIKE SHELDRICK McGraw-Hill World News, Chicago

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NEWS/MARKETING

Note to developers: California is overbuilding while state's growth slows

Try to think of when you last heard the band play "California, here I come."

A good guess is-not lately. For people are not flocking to the Golden State the way they used to. The birth rate is down sharply. And the builders, who are supposed to recognize such harbingers of horror, refuse to acknowledge that housing may have had it for now.

The economists worry because:

1. The builders have not really accepted the implications of a severe reverse in the state's growth pattern.

2. The builders are not looking at the limits of the market, so they are overbuilding.

Warning. The chairman of the Federal Home Loan Bank of San Francisco minces no words.

"The population boom is now a matter of history," says Anthony Frank. "The high rate of housing production is creating a surplus."

Frank, who is also president of INA Properties Inc., based in Los Angeles, points out that California homebuilding always has been based on an assumption of mass in-migration, and he warns.

"Once in a while it might be beneficial if we would take off our rose-colored glasses and look at the cold population statistics."

The big declines. The latest sum-up shows that net in-migration fell from 300,000 a year in the early 60s-when it accounted for 56% of the population increase—to an annual rate that is nearly zero at present.

During the decade, too, the birth rate dropped from 23 per 1,000 of population to 17.

The population cutback has not been nearly as well publicized, or analyzed, as the outflow of savings and loan funds or the mortgage-money shortage. And even economists, while prepared for fewer new faces, are taken aback at so drastic a drop in in-migration.

The state's department of finance is still struggling to interpret 1970 census figures and some statistics won't be firm before the end of the year. However, initial tallies show that population rose 4,133,000 between 1960 and 1970, to 19,-700,000. Of this, 2,082,000 was



California's in-migration, running at 300,000 a year in the early 1960's, has fallen to an annual rate of almost zero since the February earthquake. Birth rate is down, too.

from natural increases and 2,051,000 from net in-migration

Growth lag. What's so significant is that most of that net in-migration occurred during the decade's first five years. The decline started in 1963 and by 1970, says the department, net in-migration was only 27,000. Although the rate has run near zero for the last few post-earthquake months, the state thinks it may yet post a token gain of 25,000 for 1971.

Tony Frank is more pessimistic. He guesses the 1971 inmigration gain somewhere between zero and 25,000. And the population, he predicts, will increase by only 200,000 to 230,-000-"a growth rate not only less than the national average but mostly due to natural gains."

Researchers and economists for the state's big lenders say about the same thing. They don't project any new wave of migration or significant increase in the birth rate for the first half of this decade. So, they say, population gains are not likely to average more than 200,000 per year.

A leading economist, Con-

rad C. Jamison, vice president of Security Pacific National Bank in Los Angeles, says net in-migration was running at only 25,000 a year before the February quake, and he cautions: "With that event in the picture, there may be no inmigration whatever in 1971and, possibly, some net outmigration from southern California."

The 1970 census sets 10county southern California -which has 59.1% of the state's population-at 11,789,-000. This is up 2,677,000, or 29.3%, from 1960. Los Angeles County, at 7,032,000, is up 993,000, or 16.4%. The city, at see that southern California 2,816,000, is up 337,000, or 13.6%.

But a breakdown of the new figures-besides showing the lack of newcomers of lateuncovers some other statistics that builders may have to heed. Just one: much of the growth that did take place in Los Angeles was centered in minority groups. Ten years ago the city had 334,000 Negroes. Now, they number 503,000, or 17% of the population.

even the economists to think

of the old days as gone. Since the turn of the century, population has doubled every 20 years. Over the last 30 years, it soared from less than 7 million to today's nearly 20 million.

Gold and cheap land lured immigrants in the 1800s, along with new railroad routes. Later, California was looked on as a health spa. In the '20s, the movie industry provided glamor and jobs. During the depression it seemed a better spot than the Southwest's dust bowls. And the aircraft industry brought opportunities in the '40s, aerospace and construction in the '50s.

The state's all-time net inmigration record - 570,000 was recorded in 1942, when World War II brought thousands to work in defense plants. A 30year low was set in 1947-76,000 arrivals, a result of postwar readjustments. In 1942 inmigration accounted for 89% of the population increase. In 1947, 34%.

Loss of jobs. The Vietnam war can be blamed in part for the lack of new faces. California has few big defense plants to turn out the hardware needed in jungle fighting, so these jobs went to the East and Midwest. But the state has also suffered a certain loss of attraction.

Robert R. Dockson, chairman of the Los Angeles Chamber of Commerce's research committee and president of California Federal Savings & Loan, explains:

"When the losses we have experienced are combined with the image our city presents to the outside in terms of air pollution, congestion, and other environmental problems, we can doesn't have the appeal that it did."

Both property and business taxes are heavy and getting heavier. And in the hard-hit aerospace industry, payrolls are down from peak 616,000 in 1967 to 457,000. The state department of finance expects employment to stabilize in 1972 at about 400,000. (Defense jobs run about 34% of the state's manufacturing employment.)

Overbuilding. Raymond Jal-Good old days. It's hard for low says builders have not TO PAGE 18

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NEWS/MARKETING

Developers: California is overbuilding and overlending again ... (continued)

learned from the 1963-64 housing glut brought on by unrestrained building.

Jallow, the United California Bank's senior vice president and chief economist, reminds callers:

"Failure to interpret the housing market correctly today seems little different than the situation then. While it would seem most unusual to see a shift from housing shortage to surplus in just a few months, it appears that this is exactly what's taking place."

Conrad Jamison says California produced about 195,000 housing units last year (64% multiples) plus 20,000 mobile homes—and population advanced by about 215,000. It was the best building year since 1964, but one housing unit went in for every person added to the population. The economist warns:

"If you look rather coldbloodedly at economic facts, it's awfully hard to justify much of an increase. I think we are



SECURITY PACIFIC'S JAMISON 'There may be no in-migration'

building all that can be absorbed. If we build more, we are going to have an acceleration of the very gradually rising vacancy factor."

35,000 too many. The Bank of America's economic department projects 185,000 starts this year, and it says this will be well above market demand. Even taking into account marriages of post-war babies—and the need to upgrade existing housing—it believes the upper limits on market demand will be about 150,000 starts.

Tony Frank also points out

that producing one unit for



BANK BOARD'S FRANK 'Take off rose-colored glasses'

each additional resident for two years in a row is going to bring on serious over-supply. He adds:

"Unless new government housing programs are introduced to broaden the market, housing needs don't exceed 140,000 to 150,000 units a year."

Overlending. One problem experts anticipate is that, while housing demand justifies no increase in production, lenders—with more money on hand—will encourage construction.

"Mortgage lenders are in an aggressive lending mood," Jamison warns.

There are some people who

expect in-migration to increase when the Vietnam war winds down. The Los Angeles Chamber of Commerce says it wants to satisfy growth, not promote it. But it thinks people will stream in as they always have at the end of a war—not only veterans but workers now in eastern and midwestern defense plants.

Builders' route. Meanwhile, says Frank, builders must learn more about housing sub-markets, develop new products to cope with new markets—and work with Washington to design programs that will shift surplus funds into subsidized housing for the low-income end of the market.

"The easy way in California real estate has been to keep on doing what was successful," he says. "But, as a great many of the 'silent walking wounded' among our major builders would not like to admit, that can no longer be done."

—BARBARA LAMB McGraw-Hill News, Los Angeles

Some veteran Californians organize to save the state from its own promoters

A good many of California's natives have grown restless lately, worrying over whether it's a mistake to gauge progress merely by numbers or to set growth as a goal. Groups such as Lesser Los Angeles and Zero Population Growth are hitting the public-hearing trail along with Sierra Club conservationists to tell people that economic gains must be measured against the impact on environmental quality and natural resources.

Kingsley Davis, sociology professor at the University of California at Berkeley, told the Federal Commission on Population Growth in Los Angeles last month that 61% of California's 20 million residents were born outside the state or the United States. And, he said, the state holds 75% of all non-white migrants from the South, 53% of all this country's Mexican nationals, 45% of all its South Americans and 41% of all Japanese immigrants.

Overgrowth. At the same hearing, Rep. Jerome Waldie (D., Calif.) blamed politicians for operating under the policy that "growth is good and fan-

tastic growth is fantastically good. Growth is no longer good," he testified, "and it never has been good for the Los Angeles basin. It's a tragedy that growth has reached a point of diminishing returns for the present population."

Says Fred Abraham, president of Zero Population Growth of Los Angeles and a professor at UCLA'S Institute of Evolutionary and Environmental Biology: "We need fewer people—a quality of life, not a quantity of life."

The Sierra Club's president, Phillip Berry, believes the basic problem is that the land has been treated as a commodity and not a resource.

"The developer has to be put in his place," Berry warns. "He's no hero."

Keeping 'em out. Californians first proposed to keep out newcomers back in the '30s. (Some suggested building a fence around the state.) Most recently, in a survey for UC's demography department, about half of the white people interviewed thought the state should halt the publicity that entices people to California and should restrict in-migration. Non-whites, too, listed population as a paramount factor in environmental problems.

Some people have gone beyond talk. Malibu voters recently turned down a bond issue to finance a sewer system for a largely undeveloped 27-milelong coastal area. Proponents (including the Chamber of Commerce and Board of Realtors) say the major issue is health, that the septic tank system is polluting the beach. Opponents claim the whole thing is a smokescreen for growth.

"First come the sewers, then the freeway—and then the big developments," says Dick Stenger, chairman of Malibu Citizens for Good Community Planning, which helped defeat the bond issue.

City of 5 million? In another battle, opponents of a major document in the new Los Angeles master plan gave it such a going-over for "promoting growth" that specific population figures have been omitted. The concept pinpoints 29 highdensity urban centers that will hold most of the city's new residential-commercial growth —a future population of 5 million, it noted, or 75% more than today.

The population slowdown has already scaled back some projects.

The state has curbed some phases of its \$2.8-billion project that is just beginning to bring northern California water southward. Reduced growth, it says, indicates a population of 29 million in 1990, not the 35 million projected only four years ago—and 45 million in 2020 instead of 54 million. This, it adds, provides a breathing spell in water resources development.

A new University of California report says that instead of 250,000 students in 1985, as projected only four years ago, there will be only 134,000 to 140,000 (present enrollment, 100,000). The report makes no mention of new campuses, where the old growth plan listed four possibilities. And expansion of others, such as UC-Irvine, hub of Irving Ranch development, will be delayed. —B.L. Never underestimate the power of charm. And what it can do to sell your houses. Imagine the warm glow of solid brass on the handles, hinges and locksets of outside doors. And inside, the durable richness of copper alloys, brass and bronze, makes a model house warmer, more desirable. On interior doors, in lighting fixtures, lamps, bathroom fixtures.

Quality counts. Because a prospective customer recognizes value. He knows if you take the trouble to use solid brass, you take the trouble to build solid houses.

Copper Development Association Inc. 405 Lexington Avenue, New York, N.Y. 10017

Solid Brass. A beautiful first impression.



NEWS/FINANCE

Chicago homebuilder Robino-Ladd is branching into Florida and Puerto Rico

One of the last big independent builders still expanding apace, the Robino-Ladd Co. of Chicago, has just signed an agreement to acquire the International Investment Co. Inc. of Puerto Rico.

Robino-Ladd will exchange 480,000 shares, valued at \$10 million, for all of International's shares at a ratio of 1.2 R-B shares for one of International. Robino-Ladd trades over the counter.

International's shareholders must approve the deal.

Robino-Ladd already builds single- and multifamily housing in suburban Chicago, Delaware, and southeastern Pennsylvania. The acquisition will take the company into Florida and Puerto Rico.

New ventures. International owns the 450-acre Golf & Racquet Club of Palm Beach, which has a golf course and an 18-unit condominium apartment house. Zoning will permit construction of 3,000 such units.

The company owns another 645 acres in Puerto Rico's Dorado Beach resort area, and some of the parcels have a golf course and swimming pool. International has contracts, backed by



Robino-Ladd's founders Frank Robino Jr. (*left*) and Roger W. Ladd view company's job site for medium-priced houses at Bradley Run Country Club, West Chester, Pa.

500 deposits of \$2,500 each, to build the first 234 of 1,680 single-family homes planned for a resort community on the site.

Chairman Roger Ladd says Robino-Ladd will contribute to the merger its know-how in land planning, finance, marketing, and construction. He says International brings in holdings that, if started today, could not be brought to their present state of development in less than three years.

Expansion. The Robino-Ladd story begins in the postwar years with two young veterans —Roger Ladd, who was selling real estate on weekends in Illinois, and Frank Robino, who was launching a home building company in Wilmington, Del.

Ladd joined his father to create Ladd Enterprises in 1950, and the company acquired Frank A. Robino Inc. in October 1969. The combine went public with an initial sale of 310,000 shares at \$10. The shares were trading at about \$24 when the International deal was announced.

Robino-Ladd has increased sales from \$8.9 million (pro forma) in 1966 to \$24.7 million for the year ended January 31. Profit was up from \$290,947 to \$1.3 million in the same period. Multifamily construction usually runs about 40% of volume, and it was estimating about 600-700 apartment starts for fiscal '71.

Robino-Ladd bought Luigi Fortunato Inc., a Delaware developer and builder, in March 1970, and acquired Kendree & Shepherd Planning Consultants of Philadelphia five months later. Stanley Edge Associates Inc., the Washington market research service, was added in September.

The parent company ranks about 25th among builders on sales volume. It vows to be No. 10 within a year.

> —MIKE SHELDRICK McGraw-Hill World News, Chicago

The affluent rout the poor in battle for the Washington suburb of Watkins Glen

The battle for Watkins Glen has just about ended—with a clearcut victory for residents of that well-to-do Washington suburb.

The Department of Housing has ruled it will not fund the plan of the Montgomery (Md.) County Housing Authority to lease 52 luxury townhouses to poor families.

The lease proposal had been suggested by the housing authority after the builders of the \$45,000 townhouses ran into foreclosure problems (NEWS, May). The developers welcomed the leases as a bail-out.

Objections. But suburbanites objected strongly to HUD's subsidizing poor families in "luxury units" and these families moving into high-cost housing.

The housing authority director, Troy Chapman, had said: "Some occupants will be employed. Some will be on welfare. Some will be black, some white."

The lease proposal was delayed, and ten of the units were then sold at foreclosure proceedings. Another 23 were scheduled to go on the block in mid-May.

A county circuit judge had

earlier issued an injunction barring the housing authority from negotiating lease arrangements, but this order was over-

Senate rules Fed need not aid housing

Senator William Proxmire's annual run at the Federal Reserve Board has been beaten back once again this year. The Wisconsin Democrat's attempt to get the Fed to provide direct aid to housing was rejected by the Senate.

Proxmire, for the past several years, has introduced legislation that would in one way or another direct the board to pump money into the housing market. His proposals are consistently opposed by the Fed, which does not want to employ monetary policy to favor any particular economic sector.

Decisive setback. Proxmire has in the past come within one vote of winning such legislation, but he fell far short this year. His proposal never reached the floor of the Senate.

His approach was to have the Fed set variable reserve requirements for commercial banks, so that a lower reserve would be required for high-priority economic areas such as housing.

Lobbying. The Fed opposed the move. The housing lobbies, including the NAHB, supported it.

The proposal was approved by the Senate financial institutions subcommittee, of which Proxmire is chairman, 5 to 4.

In the subcommittee, however, Chairman John Sparkman of the full Senate Banking Committee and a longtime friend of housing, opposed the plan. When it came before Sparkman's own committee, it was rejected. —A.M. turned by a U.S. District Court, which said the authority could negotiate the lease.

The HUD decision rendered the court decisions moot, for a federal subsidy was necessary to enable the prospective tenants to pay rents ranging from \$230 to \$290 per month.

'Infeasible.' Said a HUD spokesman:

"It was concluded that the Watkins Glen proposal is financially infeasible, taking into account the amount of federal subsidy available and the tentative income limits that would be required.

"The housing authority and the Philadelphia regional office of HUD are fully aware of the critical need for family units, particularly for large families in Montgomery county. The regional office also recognizes the problems the authority encounters in developing low-income housing and has agreed to discuss with the authority the granting of priority status for such housing." —A.M. Gh_ products help you sell!



Rent your apartments sooner or sell your homes faster . . . with Electro-Glo Fireplaces by Leigh. Nothing compares to the warm, natural elegance of a fireplace. Now you can have all this plus smoke-free, clean electric heating . . . with the new Leigh Electro-Glo fireplace. Ideal for homes, apartments and cottages . . . a thing of beauty as well as a practical heat source. Available in wall or corner wall models in Early American Black, Shaded White or Shaded Mandarin Red. Choice of two quality nichrome heating units . . . no conventional open wire coils . . . 120 volt—6280 BTU or 240 volt with a 13,100 BTU output. Controlled by a thermostat. No venting needed. • Electro-Glo is easy to install too! Just pre-wire to the location and use a screwdriver. Real wood logs simulate a natural fire. Electro-Glo is U.L. and C.S.A. listed. CIRCLE 21 ON READER SERVICE CARD

New Gourmet range hood in Avocado, Coppertone, Harvest Gold, Black or White. Any model can be "customized" to match cabinets... simply insert your wood panels on job site.

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circle 142 on reader service card Leigh manufactures more than 200 building products

LEIGH PRODUCTS, INC. MAIN OFFICE: COOPERSVILLE, MICHIGAN 49404 Manufacturing plants in eleven locations: East Coast Warehouse: Edison, New Jersey. West Coast Warehouse: South El Monte, California



Alarm Lock by Leigh frightens away intruders. Two way protection chain door guard and a continuous burglar alarm. Easily installed, no wiring (uses 2 size AA batteries). Packaged for quick sale. Award winning demonstrator.

CIRCLE 140 ON READER SERVICE CARD



A NEW line of decorator aluminum shutters in soft, glare-free white, green or black. See-through packaging plus a display carton makes the new Leigh shutters a quick moving high profit item.

CIRCLE 141 ON READER SERVICE CARD





Roofing — Economical aluminum shingles & shakes with PPG color coatings. Durable. Attractive. Easy installation.

Siding—Various styles and textures in colorful prefinished aluminum siding. Stays bright for many years.

Today's Practical Paradise!

It's factory-finished aluminum, protected and beautified with DURACRON[®] Color Coatings by PPG for economical construction and sales appeal.

Practical is the word! Factory-applied DURACRON Color Coatings on aluminum siding, rainware, windows, shutters, soffit, shingles and shakes is a practical, attractive investment for both you and the buyer.

PPG color coated aluminum building materials are strong, lightweight, easyto-handle. Construction is quick, efficient. Every square inch of this building material is of finishing quality, so material waste is minimal. And aluminum products protected with DURACRON Color Coatings take usual handling and shipment with little or no damage. You save time. Labor. And materials!

distant.

Practical? You can count on it, and pre-planned vacation homes built with aluminum, protected and beautified with PPG DURACRON Color Coatings, have definite sales appeal. Customers appreciate their warm appearance, allweather comfort and their resistance to the forces and creatures of Nature. These care-free finishes simply will not chip, crack or peel, withstanding weathering for many years.

Find out for yourself how DURACRON Color Coatings on aluminum help you create a practical paradise. See Sweet's Architectural File, Industrial Construction File or write Product Manager, Coil Coatings, PPG INDUSTRIES, Inc., Dept. 16W, One Gateway Center, Pittsburgh, Pa. 15222.

PPG: a Concern for the Future



NEWS/FINANCE

Prices of the housing industry's principal stocks

May 5 Bid/ Close Chng. Prev. Month

COMPANY

BUILDING		
Alodex	17 1/8	- 25/8
Alodex. American Urban Corp	83/4	-70
Behring Corp. b.	143/4	- 1%
Bramalea Cons (Can.)	43/8	+ 1/4
Capital Divers, (Can.)	1.10	
Centex Corp.	263/4	+ 21/4
Centex Corp. Christiana Cos. b.	13	+ 3/8
Cons. Bldg. (Can.)	1.60	$+\frac{3}{8}$ 10
Cons. Bldg. (Can.) Dev. Corp. Amer. b	371/8	$+ 5\frac{1}{8}$ + 3\frac{1}{4}
Dev. Int. Corp.	221/4	+ 31/4
Edwards Indus	111/4	
First Nat. RIty. b.	21/8	+ 21/8
Frouge Corp.	33/4	$+ 1\frac{3}{4}$
Frouge Corp. -General Builders b	61/4	- 1
Hunt Building Marts	71/2	+ 21/8
-Kaufman & Broad e	61 1/8	+ 45/8
Key Co. b	10%	+ 1/8
Key Co. b. Leisure Technology b	253/8	- 1/4
McGrath Corp.	101/2	$+ \frac{2\frac{1}{2}}{+ \frac{1\frac{3}{8}}{1\frac{3}{8}}}$
McKeon Const.	383/8	$+ 1\frac{3}{8}$
H. Miller & Sons	101/2	+ 1/4 + 1/8
National Environment	1 1/8	+ 1/8
(Sproul Homes)		
-Presidential Realty A b.	131/4	- 11/4
Presley Development	441/4	+ 61/4
Pulte Home Corp.	15¾	+ 1/4
Robino-Ladd Co	231/4	$+ 1\frac{7}{8}$
Ryan Homes b	79¾	+ 43/4
Shapell Industries	31%	- 31/4
Shelter Corp. of America	211/8	+ 41/4
Standard Pacific b	71/4	- 1/8
3-H Building Corp.	131/4	+ 7
U.S. Financial	48	
U.S. Home & Dev. b.	52 421/4	+ 4
•Jim waiter c		+ 13/4
Washington Homes	271/4	+ 4
-Del E. Webb b	53/4	- 1/8
Western Orbis b.	5% 6%	- 1/8
Wyandotte Realtyb	0%	- 74
(First Hartford)		

SAVINGS & LOAN ASSNS.

MORTGAGE INV. TRUSTS

 $\begin{array}{c} -1\frac{1}{2}\frac{1}{2}\frac{1}{3}\frac{1}{4}\\ -++\frac{1}{2}\frac{1}{4}\frac{1}{1}\frac{1}{3}\frac{1}{4}\\ +\frac{1}{2}\frac{1}{4}\frac{1}{3$

3/4 3/8 11/2 1/2 5/8 31/8 31/8

1/2 7/8 1/4 111

Alison Mtg. b.	63/4
Alison Mtg. b. American Century b. Atico Mtg. b	261/4
Atico Mtg. b.	201/8
Atico Mtg. b BankAmerica Rity	28%
Barnett Mtg. Tr.	221/2
Barnett Mtg. Tr. Beneficial Standard Mtg.	191/4
Cameron Brown	29
Capital Mortgage SBI	24 1/8
Chase Manhattan e	443/8
CI Mortgage Group	201/2
Citizons Mtg	133/4
Citizens Mtg. Citizens & So. RIty	273/4
Cleveland Tr. Rity. In-	L1 /4
voctore	193/4
vestors Colwell Mtg. Trust	261/2
Conwell Milg. Trust	30
Conn. General	241/2
Cousins Mtg. & Eq. Inv. b	
Diversified Mtg. Inv	271/8
Equitable Life o	301/2
Fidelco Growth Inv	24
Fidelity Mtg. b. First Memphis Realty	20%
First Memphis Realty	201/2
First Mtg. Ins. Co	161/2
First of Denver	18¾
First Pennsylvania	23 1/8
Franklin Realty b.	101/4
Fraser Mtg.	271/4
Galbreath Mtg	293/4
Great Amer. Mtge	27
Guardian Mtg b	331/2
Gulf Mtg. & RIty.	193/8
Heitman Mtg. Investors	113/4
Hubbard R. E. Invest-	
ments •	24
Larwin Mtge. b.	235%
Lincoln Mtge.	101/8
Lincolli mige	10/8

	May 5 Bid/ Close	Chng. Prev. Month
MassMutual Mtg. & Realty « Median Mtg. Investors Morg. Associates Mortg. Associates Mortgage Trust of Amer. North Amer. Mtg. Inv. « Northwestern Mutual Mtg. & Rity. PNB Mtg. & Rity. In- vestors ^b . Palomar Mtg. Inv. ^b . Penn R. E. Inv. Tr. ^b . Realty Income Tr. ^b . Republic Mtg. ^b . B. F. Saul, R.E.I.T. Stadium Realty Tr. Stadium Realty Tr. Stadium Realty Tr. Stadium Realty Tr. Stadium Realty Tr. Stadium Realty Tr. Mus. Nuc. Stadium Nearly Tr. Mus. Nuc. Stadium Realty Tr. Mus. Nuc. Stadium Realty Tr. Machovia Realty Inv. « Wells Fargo Mtg.	27% 12% 25% 25% 24% 24% 26% 22% 33% 11% 17 20% 9% 20% 9% 20% 9% 19% 19%	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$
MORTGAGE BANK	ERS	
Charter Co. CMI Investment Corp. b. -Colvell b. -Cont. Mtg. Investors e Excel Investment. Fed. Nat. Mtg. Assn. e First Mtg. Insc. Co. -First Mtg. Investors e -Lomas & Net. Fin MGIC Invest. Corp. e Midwestern Fin Palomar Fin. b. UIP Corp. b. (United Imp. & Inv.)	43% 35% 34% 22% 14 64 16% 30 18% 89 23% 16 3%	$\begin{array}{r} - 6\frac{1}{2}8 \\ + 5\frac{1}{2}8 \\ - 2\frac{3}{2}8 \\ + 3\frac{3}{2}8 \\ + 3\frac{3}{2}8 \\ + 1\frac{3}{2}8 \\ + 1\frac{3}{2}8 \\ + 2\frac{1}{2}\frac{1}{2} \\ + 3\frac{3}{2}8 \\ \end{array}$

LAND DEVELOPERS

All-State Properties American Land	15%	+	1/8
AMREP Corp. b.	261/4	-	95%
Arvida Corp.	11		2%
Atlantic Imp.	16	+	1
Canaveral Int. b	51/4	-+++	3/4
Crawford Corp.	53/4	+	1/4
Deltona Corp. b.	381/4		31/4
Disc Inc.	4	-	1/8
Don the Beachcomber	-		
Ent. (Garden Land)	7	+	1 7/
PA Corp. Gen. Development .	31	Ŧ	
Gulf State Land and	51	T	"
Ind, b	45/8	-	1
Holly Corp. b	11/8		1/4
forizon Corp.	373/4		41/4
Major Realty	93/4	-	%
McCulloch Oil b	543/4	+	
Scientific Resources	1 1/8	+	%
(Sunasco)	=1/		71
So. RIty. & Util. b	51/4		1/2

MOBILE HOMES & MODULES

Con. Chem. Co. b	121/4	+ 11/2
-Champion Home Bldrs. b	401/4	+ 71/8
Commodore Corp.	101/2	+ 1/2
DeRose Industries b	121/4	- 1%
•Fleetwood •	381/4	+ 21/2
Golden West	121/2	- 1/2
•Guerdon b	24 1/8	+ 43/8
Mobile Americana	10%	
Mobile Home Ind, b	181/2	$+ \frac{3}{8} + \frac{3}{4}$
Monarch Ind	203/8	- 1/2
-Redman Indus. •	351/2	+ 53%
Rex-Noreco b	231/2	+ 21/8
Skuling a	363%	$+ \frac{2}{3}\frac{1}{8}$
-Skyline . Town & Country Mobile b	3078 91/2	+ 378
Triangle Mehile		- 78
Triangle Mobile	51/2	+ 23/4
Zimmer Homes b	18¾	+ 2%
AABCO Industries	1%	14
Brigadier Indust.	53/8	- 1/8
Environmental Systems.	151/4	+ 1 18
Lownonnental Systems.		+ 1
Hodgson Houses	71/2	+ 11/2
Liberty Homes	201/2	+ 1 1/2
Modular Dynamics	21/4	
Modular Housing Systems Inc.		
Systems Inc	181/2	- 1/2
National Homes A	313/8	- 1/4
Nationwide Homes	81/8	+ 1/2 + 21/8
Shelter Resources b	12 1/8	+ 21/8
Stirling Homex	201/4	- 1 1/8
Swift Industries	4	+ 1/4

	May 5 Bid/ Close	Chng. Prev. Month
DIVERSIFIED COM	PANI	ES
Amer. Standard	26¼	- 1
(Wm. Lyon) AVCO Corp. « Bethlehem Steel «	16	+ 1%
Bethlehem Steel	231/2 445%	+ 1%
Boise Cascade . CNA Financial (Larwin) .	21/8	$+ 1\frac{1}{8} + 1\frac{1}{8} + \frac{5}{8}$
Castle & Cooke e	211/2	- 278
(Oceanic Prop.) CBS • (Klingbeil) Christiana Securities	45½ 124	$+7\frac{3}{8}$ +1 +4\frac{3}{8} + $\frac{1}{2}$
Citizens Financial b	20 1/8 23 1/2	+ 41/8
(Sterling Forest)	2372	
Cousins Properties	267½ 31 325%	$+24\frac{3}{4}$ - 9 + $\frac{7}{8}$
Christiana Securities Citizens Financial b City Investing e (Sterling Forest) Corning Glass e Cousins Properties Dreyfus Corp. e (Bert Smokler) Evans Products e Ferro Corp. e	325/8	
Evans Products	47 26	+ 31/8
Fischback & Moore	38½ 26¼	- 1%
Ferro Corp. « Fischback & Moore « Forest City Ent. » Fruehauf Corp. «	361/2	+ 4 4
Fruqua Indus, «	24¾ 54½	$\begin{array}{r} + 3\frac{1}{8} \\ - \frac{3}{8} \\ - 1\frac{5}{8} \\ - \frac{1}{4} \\ + 4 \\ + 1\frac{1}{2} \\ - 1\frac{3}{8} \end{array}$
Glasrock Products b.	83	
Gulf Oil (Gulf Reston)	31 ½ 48½	$+ \frac{1}{14}$ + $1\frac{1}{4}$ + $6\frac{3}{8}$ + $1\frac{1}{4}$
Inland Steel	313/4	+ 11/4
Inland Steel		- 1/4
International Basic Econ. International Paper « Internat. Tel. & Tel. «	39 ³ / ₈ 64 ¹ / ₈	+ 2%
Leroy Corp Monogram Industries « Occidental Petroleum « Occidental Petroleum «	3 ¹ / ₂ 13 ³ / ₈	+ 1/4
Occidental Petroleum e	13%	$+ \frac{\frac{1}{4}}{- \frac{1}{4}}$
(Occ. Pet. Land & Dev. Perini Corp. b)	- 54
Philip Morris e	66½ 40	+ 6 + 6 + 8
(Occ. Pet. Land & Dev. Perini Corp. 5 Philip Morris © Rouse Co. Santa Anita Consol.	561/2	
(Robt. H. Grant Corp.) Tishman Realty o	273/4	$+ 3\frac{3}{8}$ + $\frac{1}{8}$
Titan Group Inc. Uris Bldg. • U.S. PlyChampion	45/8 235/8	+ 4%
U.S. Ply,-Champion (Lewers & Cooke)	33 7/8	- 1/8
(Lewers & Cooke) Weil McLain b	25 92	+ 1/2 +113/4
(Coral Ridge Prop.)	56	+ 1
(Centennial Homes)	103/	
Whittaker (Vector Corp.) Wickes Corp. e	123/4 381/2	+ 2%
BUILDING PRODU	CTS	
Alcan Aluminium	235%	+ 1/8
(Alcan Design Homes)	181/2	- 3/8
Automated Bldg. Com-	13	- 1%
Bird & Son	50	+ 3
Ceco Corp. •	24¼ 26	+ 1/4 + 1/8
Brooks Scanlon Ceco Corp. «	325/8	+ 1%
(Realtec Inc.) Clow Colonial Sand ^b Consolidated Rock. Flintkote Co. « Florida Steel « Glen Gery Corp. ^b Interpace « Johns Manville « Keene Corp Kirsch Co. «.	19½ 12½	- 1/8 - 1/8
Consolidated Rock	29½ 29%	
Florida Steel «	19½ 9¼	- 1/8 - 21/8
Interpace .	321/2	- 11/2
Keene Corp.	441/2 133/8	$+ \frac{15}{2}$ $+ \frac$
Kirsch Co. « Knape & Vogt	50 36¾	$-1\frac{14}{4}$ + 1 $\frac{14}{4}$
Lowe's Companies	651/4	$+ 6\frac{1}{8}$ + 6 ¹ / ₄
Mouldings Inc. b	11 7/8	- 1%
NL Industries •	221/2	- % + %
Knape & Vogt Lowe's Companies. Masonite Corp. «	413/4	+ 11/2
PPG Industries Permaneer Corp. b	36½ 16%	+1 + 5 ³ / ₈
Philips Industries a Pioneer Plastics b	14%	
Ply Gem Industries b	101/2	-2 -1
Pratt & Lambert b	16	$-\frac{3}{8}$ - 1 $\frac{3}{8}$
Republic Gypsum	34 10¾	+ 31/4 - 2
Robertson (H. H.) e. Scotty's Home Builders b	241/4	- 5/8 + 73/8
Nc industries o Owens Corning Fiber- glass o. PPG Industries o. Pioneer Plastics b. Ply Gem Industries b. Ply Gem Industries b. Potlatch Forests o. Pratt & Lambert b. Reliance Universal Republic Gypsum. Robertson (H. H.) o Scotty's Home Builders b Sherwin Williams o. Southwest Forest Indus, b Standard Brands Paint o.	481/4	$\begin{array}{r} -2 \\ -1 \\ -3 \\ +3 \\ +3 \\ +2 \\ -5 \\ +7 \\ -3 \\ +7 \\ -3 \\ +4 \\ -4 \\ -4 \\ -4 \\ -4 \\ -4 \\ -4 \\ -4$
Standard Brands Paint e. Supercrete Ltd. b.	60¼ 3¾	+12%
Sapererete Etd. "	374	- 74

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. k-not avail-able. - Computed in HOUSE & HOME's 25-stock value index. y-adjusted for 3 for 2 split. NA-not applicable. Sources: Blyth & Co., 14 Wall, New York City; NY, Hanseatic Corp., Gairdner & Co., National Assn. of Securities Dealers, Philip Beer of Russell & Saxe, American Stock Ex-change, New York Stock Exchange, Mid-west Stock Exchange, Pacific Coast Stock Exchange.

	May 5 Bid/ Close	Chng. Prev. Month
U.S. Ceramic Tile b U.S. Gypsum ° Valspar Corp. b Vulcan Material ° Warner Co. °		
APPLIANCES		
Bernz-O-Matic. Hobart Manufacturing e. Hoover Co. Magic Chef e. Maytag Co. e. Tappan Co. e. Welbilt Corp. e. Whirlpool Corp. e.	14½ 53¾ 53 30½ 37⅛ 24¾ 4⅛ 89	$\begin{array}{r} + 1\frac{3}{4} \\ + 5\frac{1}{2} \\ + 5\frac{1}{4} \\ + 3\frac{5}{8} \\ + 3\frac{7}{8} \\ + 1\frac{7}{8} \\ + 10\frac{3}{4} \end{array}$
Alpha Portland « American Cement « California Portland » Giant Portland « Ideal Basic Indus. « Kaiser Cement & Gyp. «. Lehigh Portland « Loue Star « Louisville Cement » Martun Marietta « Medusa Portland « Missouri Portland « Puerto Rican Cement « Puerto Rican Cement «	18% 8% 38% 32% 15% 17% 20% 16% 31 27% 27% 17% 25 40% 29 12% 12%	$\begin{array}{r} + & \frac{3}{16} \\ + & \frac{1}{78} \\ + & + & 2\frac{5}{16} \\ + & - & \frac{5}{16} \\ + & - & + & \frac{2}{16} \\ + & - & + & \frac{2}{16} \\ + & - & + & \frac{1}{16} \\ + & - & \frac{1}{16} \\ + & - & \frac{1}{16} \\ \end{array}$
CONSTRUCTION M	ACHI	NERY
American Hoist & Der- rick °. Bath Industries ° Clark Equipment °. Harnischeger American b Kaiser Industries b Deere & Co. °. Pettibone.	141/4 311/2 533/4 443/4 263/4 141/8 45 141/2	$\begin{array}{r} + 1\frac{1}{4} \\ + 4\frac{1}{4} \\ + 6\frac{1}{2} \\ + 3\frac{1}{8} \\ + 1\frac{1}{2} \\ + \frac{1}{2} \\ + \frac{1}{2} \\ + \frac{1}{3} \\ + \frac{1}{3} \end{array}$
HEATING-AIR CO	NDITI	ONING
HEATING-AIR CON Borg Warner • Buffalo Forge • Carrier Corp. • Copeland Refrig. • Crane• Culligan • Fedders • Intertherm Inc. Masco Corp. • Tecumseh Trane Co. •	31½ 40¼ 38½ 32½ 61½ 37¾ 19¼ 44¼ 8 58 184 63¾	$\begin{array}{r} - & 1\frac{3}{4} \\ + & 3\frac{3}{8} \\ + & 3\frac{3}{8} \\ + & 4\frac{3}{8} \\ - & 6 \\ + & 2\frac{3}{8} \\ + & - & 1 \\ + & - & 2\frac{1}{2} \\ + & - & 1 \\ + & - & 2\frac{1}{2} \\ + & - & 1 \\ + & - & 2\frac{1}{2} \\ + & - & 1 \\ + & - & 2\frac{1}{2} \\ + & - & $
HOME FURNISHIN	GS	
American Furniture Co American Seating e. Armstrong Cork Co. e. Bassett Furniture. Baumritter Corp. General Housewares. Giffen Industries. Hamilton Cosco b. Henredon Furniture. Hickory Furniture. Hickory Furniture. Kroehler Mfg. e. Levitz Furniture b. Lightolier. Ludlow Corp. e. Mohasco Industries e. Ozite Corp. Simmons Co. e.	38% 52% 61 10% 5 8% 37 11% 30 105% 14% 24	$\begin{array}{c} + \frac{16}{11}\\ + \frac{11}{12}\\ + \frac{11}{12}\\ + \frac{11}{12}\\ + \frac{11}{12}\\ + \frac{11}{12}\\ - \frac{11}{12}\\ - \frac{11}{12}\\ + \frac{11}{12}$
TOOLS & HARDWA	RE	
Black & Decker « Bliss & Laughlin « Emhart Corp. « Kliklok Corp. b Scovill Mfg. « Skil Corp. « Shap-On-Tools Stanley Works « Tool Research « MISCELLANEOUS	76¼ 23½ 39¾ 16⅔ 48 27½ 67 63 26¾	$\begin{array}{r} + 6\frac{3}{1}\\ - 1\frac{3}{16}\\ + 1\frac{5}{16}\\ + \frac{15}{16}\\ + \frac{15}{16}\\ + \frac{15}{16}\\ + 2\frac{15}{16}\\ + 2\frac{15}{16}\\ + 1\frac{15}{16}\\ + 1\frac{15}{16}\\ \end{array}$
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Doors used to stick out like a sore thumb...

until our"know-it-all" stepped into the picture.



Never again will you have to settle for a door that doesn't match the room it's going in.

U.S. Plywood has the "in" doors to suit any interior opening. Wooden bifolds. Metal bifolds. Sliding door systems. Hollow-core doors. Louvered doors. Flush doors.

In finishes to match or complement any room decor. For example, the Varidoor[™] sliding closet door system shown above is designed to accommodate a variety of over 100 panels and finishes. But even more important to you, U.S. Plywood doors are designed to reduce in-place costs. Most come with hinges, hardware, mounting accessories, all fitted and ready to install.

Of course, the expert on doors is our "know-it-all." Our Builder Service Representative. He knows doors inside and out. In fact, it was one of his many suggestions on what you need that led us to our low-cost sliding door system.

But remember, this man of ours is

not only up on your product problems, he can also be helpful in the areas of research, merchandising, advertising, you name it. And if he doesn't know the answer, you can bet he'll know where to find it.

Give him a call at your local U.S. Plywood Branch Office. Door-wise, he really knows it all.



NEWS/FINANCE

Housing's shares up

HOUSE & HOME's index of 25 housing stocks crept from 418.39 to 418.93 in the month ended May 5 to keep the trace moving upward, at least technically, for a sixth month.

Here's the composite index:



D'F'AJA 80'D'F'AJA 80'D'F'A 1969 70 71

How top 5 did in each group:

	May'70	Apr. '71	May'71
Builders	339	539	550
Land develop.	329	593	585
Mortgage cos.	463	795	784
Mobile homes	394	763	864
S&Ls	119	185	170

Stock list expanded

The current issue expands HOUSE & HOME's stock price tables to 340 listings that cover virtually every segment of American business related to homebuilding. (See page 24.)

With an assist from Blyth & Co., the Wall Street securities house, the editors have almost tripled the magazine's previous list of monthly prices for some 120 issues. The larger tables will permit HOUSE & HOME to present by far the widest stock price coverage of any housing trade magazine.

A list of trusts. A new section of 56 mortgage investment trusts is included, largely in response to wide reader demand for quotations on the stocks of these comparatively new companies.

Industry index. The industry index of 25 leading companies, five from each of the five principal sectors of housing activity, will continue to appear along with the expanded list.

The weighted index, using share prices of January 1965 as a base of 100, has appeared monthly since April 1967. It is prepared for HOUSE & HOME by Standard & Poor's, the New York investment research service. The index appears above.

THE ZONING SCENE



"Everybody's talking about the advantages of P.U.D. But, does the green-look really pay off in long green?"

We've all heard (and read) glowing descriptions of P.U.D. (Planned Unit Development) —green spaces, balanced growth, planned communities.

And, we've all also heard a lot about how to sell the idea to local officials in the "frontier" townships. The key word is ecology, and by this time most developers have listened to so much talk about the subject, you might think they'd have trees growing out of their ears.

Sure, everybody wants to do a quality project, but why bother with a P.U.D.? Are all the planning and careful negotiations worthwhile? Can the green-look really pay off? Let's read the answer by numbers—in this case numbers of dollars.

Take Narraticon, a 170-acre P.U.D. recently approved by Deptford Township, N.J. (H&H, Feb.). Hypothetically, we'll say the developers Bob and Hank Herskowitz bought the land, zoned for half-acre, singlefamily homes, for a half-million dollars. Rezoning and negotiating for P.U.D. approval at eight units per acre took two years.

How much did they gain for their trouble? A lot, as you'll see when you compare costs of constructing each type of community.

In a typical single-family house development, it costs \$9 per sq. ft. (or \$18,000 to erect a 2,000 sq. ft. home that sells for \$30,000). Add \$6,320 for land and improvements for the same unit. That's a profit of \$5,680 per unit, or approximately 19% of the selling price of the home. Since 340 units are permitted under half-acre zoning, there's a gross profit of about \$1,930,000 before administrative, financing, and marketing expenses.

P.U.D. can do better.

The typical 1,500 sq. ft. P.U.D. townhouse costs \$8 per sq. ft. to build—\$12,000 for a house that sells for \$20,000. At Narraticon, the land and improvements (including fees) for each unit are worth \$1,400. Gross profit per unit is \$6,600. That's 33% of the selling price, compared to 19% for the conventional project. And, this tract will accommodate 1,360 such units for a total gross profit of \$8,980,000.

Let's back up a minute to those figures on the cost of developing the site. P.U.D. means that the developer has to foot the bill for certain amenities (at Narraticon, a small community building was the largest item), schools, and larger fees. But the accompanying chart illustrates that these "extra" costs are far less than the savings that accrue from shorter roads and utility runs under a cluster P. U. D.

The result is that it actually costs less to develop a site for 1,360 units under P. U. D. than for 340 single-family homes on the same site—some \$250,000 less.

The figures in the chart point out that environmental planning isn't a matter of costly frills. On the contrary, natural amenities pay their own way.

\$7,050,000

	Sit	te Develop	ment Costs-170	Acres		
			Single Family units per acre)			P. U. D. (8 units per acre)
Land Cost			\$ 500,000			\$ 500,000
Roads			780,000			675,000
Utilities			865,000			400,000
Amenities			d			100,000
Schools						125,000
Fees		a di Citta	5,000			100.000
Totals		in the state	\$2,150,000			\$1,900,000
Total Cost Per Unit			6,320			1,400
		Cost-P	rofit Relationshi	P		
	Construction	Site Deve Costs	l. Total	Sale Price	Gross Profit Per Unit	Percent Profit on Sale Price
P. U. D. Townhouse	\$12,000	\$1,400	\$13,400	\$20,000	\$6,600	33%
Single Family House	18,000	6,320	24,320	30,000	5,680	19%
		Comp	arison of Profits			
and the second	Number of U	nits	Sale Price	Total Cost pe	r Unit	Gross Profit
P. U. D.	1,360		\$20,000	\$13,400		\$8,980,000
Single Family	340		30,000	24,320	6.5.6	1,930,000

Gain for P. U. D. at Narraticon

WALTER S. SACHS JR., PARTNER, RAHENKAMP SACHS WELLS AND ASSOC. INC., PHILA., PA.

Barricade your doors!

You lock out the world with this rugged five pin cylinder deadbolt. Bolt extends a full 1". It's solid brass and conceals <u>2</u> steel roller inserts; can't be cut through, can't be jimmied either; positively deadlocks. Operates by thumb on the inside — by key only on the outside. It's top security. **And it sells.**

All of this — and still not a word on the other side of the sales story — the great looks. But then, that's what the picture is all about.



CIRCLE 27 ON READER SERVICE CARD

THE PLANNING SCENE



"One minor local rule can force an undesirable and costly design element into a subdivision plan"

Regulations decreed by city and county agencies can have a profound effect on the planner who seeks to create a development in keeping with the natural environment.

Although you normally would not expect a single design criterion to affect the overall plan, there are instances where one small, but vital ruling could be the key to an undesirable end result—a development that might be environmentally insensitive as well as unnecessarily costly.

For example, if a builder is forced to put drainage facilities underground, even though open surface drainage may be more desirable, construction funds will be diverted from such amenities as attractive plantings and trees.

How can this be avoided? First, the builder must be able to identify the problem regulation and know what effect it will have on his project from both an aesthetic and an economic point of view. Second, he must have practical alternatives to offer. Armed with this information, he can select the best alternative and then fight for what he feels is right for the good of the total development.

Let's look at one regulation that drastically affects the environment—that of storm drainage for a typical cul-de-sac street.

Most engineering departments require or strongly insist upon draining the cul-de-sac from its end to some adjacent street, carrying water next to the curb in a gutter. (*See Sketches A&B*).



The usual reason given for doing it this way is to facilitate upkeep, since the typical gutter is easy to clean and maintain.

Since water has a rather difficult time moving uphill, a subdivision has to be graded to facilitate this drainage pattern, whether that grading fits the natural contour of the land or not.

This engineering design method is logical when the natural contour of the land is already running generally in the direction of the drainage.

What, though, if the street drainage runs in opposition to the natural contour? Something must be sacrificed, and usually it's natural terrain—mature trees, shrubs, and ground cover. In addition, when streets are constructed in opposition to the natural slope, it usually means excessive grading, resulting in greater costs to both builder and buyer. (See Sketch C).



Assuming the design method can be modified, what are some alternative solutions?

First, drainage can be carried in the street to the end of the cul-de-sac, then transferred to a lower street, another cul-de-sac, or to a natural drainage channel. This can be done with a catch basin and pipe, a concrete ditch, or natural swale. (See Sketch D).



A second possibility is not to carry the drainage in the street at all, but in natural drainage courses on the site, either next to the street or otherwise. This water then continues from the end of the cul-de-sac down to other natural drainage swales, a culvert, or catch basin. Again, this allows the street to fit the natural terrain as much as possible. And the planner, keeping the natural environment in mind, can place that street in the right location for the overall site plan. This solution should be quite economical since no curbs and gutters are required adjacent to the street roadway. (See Sketch E).



Another solution, more applicable to larger developments, is the ponding technique. Water is carried in a natural swale from the area of the cul-de-sac to a collection point, possibly common to other culde-sacs. Depending upon the nature of the local area as to frequency and amount of rainfall, various facilities could be used to collect or pond the storm water, allowing it to be drawn off by evaporation, absorption, slow release, etc. A small existing lake, a golf course, a common green area, or a natural mud flat are a few examples.

To sum up, all too often the natural environment of a site has been doomed to destruction in the initial stages of site design. A preconceived engineering design method has already ruled out alternatives that would allow for an environmentally superior plan. Add to this a planning commission and council that is oriented only to going by the book, and there is no place left for alternatives that may produce a far superior land plan at one with the natural environment.

What can the land planner, developer, and builder do?

Start with the initial objective of obtaining a land plan of superior quality even if it doesn't initially conform to all the design methods of a particular municipality. Look for meaningful and practical alternatives to these methods and present them with all the facts.

In this example, obviously, your solution must meet all the basic criteria—minimization of flood danger to residents, ease and economy of maintenance, and safety. With these basics solved to the satisfaction of your community, there should be no reason for the ruling body not to accept a more aesthetically pleasing and economically superior solution that conserves the environment as well.

ROBERT W. HAYES, PRESIDENT, THE COMPLA CORPORATION, SAN FRANCISCO, CALIF.

SPEAKMAN



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Adjustable through a full spectrum of spray patterns from needle to flood.

Non-stick, deposit-resistant Lexan* plungers to practically eliminate maintenance.

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Selection includes swivel ball-joint, wall-type and vandal-proof models.

Speakman Anystream: An eloquent expression of your ideas.

Over 100 years of service to the nation's builders.

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CIRCLE 29 ON READER SERVICE CARD

Cuts costly call-backs.

Buyers won't complain about sticking or binding. Perma-Shield Windows fit snug—yet operate with ease, because they're made of strong, stable wood and protected with thick, vinyl sheathing.

Silent salesman.

Surveys show that home buyers are more aware of Andersen Windows (by a 7 to 1 margin). So this label adds sales appeal and value to a home.

HH-61

This is Andersen's Perma-Shield® Narroline" Window. This elegant double-hung window really delivers on features that appeal to both builder and buyer. Andersen dealers deliver; toofast and reliably from the biggest inventories in the business. Call your Andersen dealer for more information, or mail coupon to: Andersen Corporation, Bayport, Minnesota 55003. Send me literature on your Perma-Shield Windows.

Please have a representative call on me.

Name		
Company		
Address		
City		Zip.
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No on-site painting.

You save about \$10 a window, because there's no need for exterior painting. The sash has a weather-resistant polyurea finish, and the exterior frame is sheathed in rigid vinyl. Interior wood surfaces can be painted or stained to match any decor.

Here's the window that delivers more.

No storms.

The welded insulating glass option will eliminate the need for cleaning and changing storms an economical way to put real sales appeal into your homes.

Low installation cost.

Perma-Shield Windows come completely assembled. All you do is nail the pre-punched side flanges into the window openings. That's all there's to it. What a savings on labor costs!

Low maintenance.

The vinyl-protected frame won't ever rust, peel or chip, and the factory-finished sash won't need paint for at least 10 years. Saves money for homeowners... saves on your investment, too, when these added features can help you sell homes faster.

THE MERCHANDISING SCENE



"Accessories are the spice in your model home decor. But just a dash of seasoning goes a long way"

A house without accessories is an unfinished product—void of the personality that makes it come alive. Just as the right tie puts life into your plain grey suit, or the perfect item of jewelry makes a simple dress dazzle, carefully selected accessories wrap up the package and make the model house or apartment a home.

Accessorizing is the last step an interior designer takes to give the home warmth and personality—in short, the homey feeling the prospective buyer subconsciously looks for and relates to when trooping through model-home complexes.

As I've stressed before, the "total theme" concept is important in creating a responsive mood. But it can never be captured solely by furniture and wall coverings. The completeness of a theme does not come across unless complemented by unusually eyecatching, conversation-sparking accessory objects.

However, like most other aspects of decorating, the primary rule is "don't overdo it." And in accessorizing, that's an easy trap to fall into.

For example, chances are you've visited a model home with an oriental theme and can almost smell the incense burning. Or, there are squat Buddhas or bamboo shades in every room. That's overdoing it. The overpowering presence of jade figurines, vases, and gongs make the home look like an import gift shop. And you know what most people do in gift shops—they look but rarely buy.

And that's just what you want to avoid. A few well-placed items such as an oriental screen or a distinctive ash tray can understate the theme and convey it to the prospective buyer far more effectively.

One of the most natural and effective ways to accessorize is with plants. Greenery fits every home no matter what the style. A corner calls for a tall-standing plant such as a fiddle leaf. Try a full fern for a coffee table or a box arrangement on a window sill. Plants give a home a look of vitality and realism.

Naturally, live plants and flower arrangements are preferable but maintenance problems often make them impractical. Artificial plants are just as effective and can be easily transferred to new projects for reuse.

Books are, in my estimation, a vital accessory in any model. They warm up a room quicker than anything else. But don't just throw a couple of books here and there for show. Stuff floor-to-ceiling built-in bookcases with old books readily available in secondhand stores. An occasional book opened facedown on a desk, bed, or table, gives the illusion that your model is actually occupied.

Newspapers and magazines casually, although strategically, situated in various rooms are a must. They take up space, the buyer identifies with them and, believe it not, they inject livability into the model. And, like plants and books, they give great mileage. Example: use Wall Street Journal in a man's den.

Selectivity a must. Because accessories are used to complete a theme, they must be carefully chosen. As an illustration, let's take the dining room table setting in several different model home decors.

For a traditional home, you probably have a formal dining room and a rather elegant atmosphere. So coordinate your accessories with the "fine china look." But you should not price yourself out of the homebuyer's range by using expensive china and crystal. Wine glasses, perhaps a decanter and a colorful floral arrangement, will create the effect.

A setting in a Mexican or ranch house calls for a heavier, more masculine tone. You would use rustic pottery dishes augmented with mugs and wooden bowls. Bright warm place mats or table runners could further amplify the theme.

In a modern or contemporary home, the setting could feature sleek, white plates and smoke glass goblets which would mirror the clean lines of the contemporary look.

But don't feel constricted by these basic themes. For an oriental mood, use oriental pattern plates, tea cups, and chopsticks on grass place mats.

The ABCs of accessorizing. Every room can be made more inviting with accessories. Here are a few basic do's and don'ts you may want to follow:

Entry. Don't make the mistake of leaving it barren without wall hangings, but use decorative mirrors to open up what is usually a tight space. Entries are ideal for plants. Use a leafy palm, if space permits, in a modern house, or for a heartier look in a ranch house, use a rhododendron.

Living room. Here's the place where most people get carried away. And it's easy because you have a good deal of open table space. So use large items to eliminate the temptation for people to drop your accessories into pockets and purses.

For example, mix a few antiques in with your modern furniture. An old clock, circa 1930, occupying a prominent place on a glass and chrome étagère (free standing shelves), generates interest and conversation. An old ship's wheel or bell reinforces a nautical theme. An oriental rug or a silk screen behind the sofa silently whispers the call of the Far East. Pre-Columbian figures and a Mexican tapestry on the wall can be used to lighten the heaviness of Mexican furniture.

Bedrooms. Never forget that these rooms serve other purposes than sleeping. A sewing nook can be accented with patterns and bolts of material on a nearby table. Even an old wire mannequin, the kind your grandmother used, adds charm and life to the woman's retreat.

Children's room. Don't make the mistake of limiting accessories to bedspreads and curtains. Do use such things as tennis rackets, baseball mitts, record jackets, posters, old street signs, busy bulletin boards loaded with clippings, and popular toys. But coordinate with your overall theme; be imaginative.

Bathroom. Don't try to make this room something it isn't. Traditionally the bathroom is drab, but give it life with unusual soap dishes, antique bottles, or jars of bathpowders or cotton balls.

Kitchen. Here is probably the most important room in the home in terms of accessorizing. Fill glass canisters with beans and macaroni (then glue the lids down) and toss around mixing bowls. Artificial foods, randomly placed, and an open cookbook can target in on specific markets: a gourmet cookbook for a more expensive home, or "50 Ways to Cook Hamburgers" for the young marrieds. Sounds silly but people relate to them. In short, the kitchen should imply activity, creativity, productivity.

Pictures are probably the most important accessories; they should be chosen mainly for color and style of frame. The picture must relate to the theme of the home, and the buyer should relate to the pictures. You wouldn't use a Picasso in a Williamsburg or Early American home. However Picasso would work in a modern home. And a picture doesn't necessarily have to stand alone. Group them, cluster them—the effect is intriguing.

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And help you build in the sales appeal of quality-outside, inside, or both.

Available with faces that are clear-knot free-and without conspicuous patches.

Redwood has long been known for its superior ability to hold finishes. Now, we've added saw-texturing to further increase this ability. Result: PALCO redwood plywood holds finishes up to twice as long as other smooth surfaces. Or, may be used in its natural color; or leave it unfinished—it will weather beautifully.

Available in 3/8" & 5/8" thicknesses—8', 9' & 10' lengths, and in a variety of patterns.

Choose from the many faces of PALCO redwood plywood for the beauty and quality of redwood plus the economies of panel construction.

Write us for color brochure that describes application and various finishing recommendations.



NEWS/DESIGN



If you'd rather switch (design) than fight, here's how



UPPER LEVEL



LEVEL

Three basic plans were used for four models. All have three large skylights and basements (not shown). "Get into a new community one planned for buyers who are ready for something different," says Alan Bomstein, vice president, Page Corporation, Maryland builders. "Don't try to jam contemporary design into an area of traditional homes."

Tidesfall, shown here, is Page's second contemporary development in Columbia. In the company's first community, 75 single-family homes were sold in a little over a year. Work has started on a third project.

Page previously built in Montgomery County, a highly traditional area where attempts at contemporary by other companies have bombed, says Bomstein.

When Columbia developer James Rouse approached Page, he asked for contemporary homes. Initial nervousness about the switch proved groundless and now everything on Page's drawing boards is contemporary. Bomstein says he probably would not as yet go contemporary in Montgomery County. But, even there, he adds, acceptance is growing as people are exposed to contemporary in nearby areas.

Tidesfall townhouses, designed by architect Hugh Newell Jacobsen, cost from \$42,500 to \$46,900. (Waterfront lots are \$9,000 additional.) In five months 14 of 21 units have been sold.



lake. Privacy of individual units achieved by extended side walls. U 20 40 40 PT WILDE LAKE WILDE LAKE

Indoor bridge on bedroom level of some models creates a partially-sheltered entryway.

Dining balcony is a half-level above living room which, in turn, opens onto a broad, rear deck.
Northampton includes single-family, townhouse, apartment, highrise, commercial and industrial land uses. It is at Exit 33 on the 65-mile circumferential Capital Beltway, 3 miles from the District Line. Washington's other new satellite towns, Columbia and Reston, are about 15 miles away.

NORTHAMPTON CORPORATION A Wholly-Owned Subsidiary of DISC Incorporated



NORTHAMPTON

NORTHAMPTON a new town in the shadow of the Nation's Capital

Northampton is closer to Washington than any other new town! Only 3 miles from the District Line. Reston, Va. and Columbia, Md. are about 15 miles away.

THE REAL PROPERTY AND

That's just for starters. Northampton fronts on the Capital Beltway. It's minutes from any part of the Washington Metropolitan Area. Take Exit 33 and you are there.

Big things are happening. Growth rate in the Washington Metropolitan Area from 1960 to 1970 was the greatest in the nation. 38.4%! That's more than double the rate of the runner up. Prince George's County, where Northampton is located, gained 84%! Far and away the highest in the area. And now the County has a modern, new, streamlined form of government to meet these challenges, now and for the future.

The 2800 acre new town package planned at Northampton includes everything from a 27 hole golf course to the Prince George's Community College, a 300 acre town core with commercial, office, and hotelconvention facilities, a center for government, and a complete variety of residential uses. Phase I is under way.

A *planned* new town. Close-in. On the Beltway. In the fastest-growing county in the Nation's fastest-growing market. That's Northampton.

the fastest growing market in the country Prince George's County, Maryland



To get the facts, write to: William J. Levitt, Jr., Chairman of the Board Northampton Corporation, 1828 L St., N.W., Washington, D. C. 20036. Phone: 202–223-6505

NEWS/DESIGN



Community play areas are centrally located within the development. Top-floor balconies open out from living-dining rooms of one-bedroom apartments.



Individual play areas, reached from living and family rooms of each three-bedroom, two-level unit, are screened from the public areas by wooden fencing.

Split plan transforms a problem area into a plus feature

Public hallways-a major source of vandalism and maintenance problems in most lowincome developments-have been virtually eliminated at Martin Luther King Square in San Francisco (an FHA Section 236 project).

A split design, working naturally with the slightly sloping site, creates what are essentially private entrances for each apartment, and contributes a corollary benefit: tenants develop a sense of ownership which helps reduce anti-social acts throughout the project.

The plan, by architect Kaplan and McLaughlin, is the outgrowth of an informal survey of prospective occupants. They found that:

· Families with children prefer "private" play areas with direct access to their apartments, plus common play areas; and, they want street-level entrances without common halls.

• Single people or childless couples don't want noise of children overhead; and since they are often away from home, feel there's more security away from street-level entrances.

Typical buildings have two back-to-back, three-bedroom duplex units, each with its own garden. Above are a pair of single level one-bedroom units.

Monthly rentals range from \$112 to \$187. Cost of the project was \$12.30 per sq. ft.



Staggered levels (cross section, above) are key elements in the design. The plan, adapted to the site's slope, creates almost-private entrances (floor plan, right) on uphill elevations (shaded area, site and floor plans) for top-floor units. Note that while one-bedroom units share a common hall entrance, one actually is a half-level above its counterpart. Four-bedroom units (not shown) also are available.





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That's right. At Slater, we make them better. Our expanded Decorative Line of specification-grade touch-switches and receptacles, for example.

We've come up with a rather unique idea. Personalized embossing on the touch switch. Let's say you're bidding on the electrical contract for a new motel. There isn't a motel around who wouldn't love to see its name on every switch in the building. We can emboss other things, too, like switch functions (fan, disposal, etc.). The possibilities are limitless.

À small detail? Let's face it. In your business, an advantage is an advantage.

Speaking of advantages, here are some more. We've added a new single receptacle to our

Decorative series. Also a wide variety of combination devices. Slater's soon-to-be-a-classic 770 touch switch now comes in a 20-Amp version called the 2770.

And the modular design of our Decorative series enables you to really reduce your inventory. One plate fits both the switch and the receptacle.

We also ask you to remember that selling up to Slater means greater profit per item. As if we had to tell you. And last, but not least, are the colors. The newest

And last, but not least, are the colors. The newest decorator pastels belong in the newest buildings. The only part of an installation that your customer sees is the devices installed on the wall. If he likes what he sees, so much the better.

We have a whole bunch of new ideas. But they all boil down to one thing:

Slater. The Decorative Line that makes you look good.



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Seven ways to get your prospects inside with

You see, the outdoors is what makes the indoors so great.

And bringing the outdoors in is what brings the prospects into your homes; and that's where glass comes in. Glass can open up every room in your homes. Let the sunshine in, but keep the weather out. Interior decorating becomes interior-exterior decorating. Rooms become part of the total landscape, and look many times larger.

Use glass to open up the wide open spaces for the people who buy your homes. Use glass to open up your potential for sales and profits.

Here are just a few ideas for building "now" homes with glass. Look into them.

PPG: a Concern for the Future



1 This kitchen has a sunny disposition because the cabinets are positioned to hang in front of the sunlit glass wall. Beautiful idea, and in cold climates PPG *Twindow*[®] insulating glass makes it even more practical.



2 The garden bath, which uses a picture window overlooking a private court, lets the ladies bathe in Roman splendor. But in privacy. In an area like this PPG Herculite[®] K safety glass lets them move about in safety.

Deane Brothers, Builder





3 Mirrored wardrobe doors introduce glamor, a feeling of spaciousness, more light and beautiful practicality to the master bedroom in your homes. Or use this idea in a guest room to give it importance. Look into PPG *High-Fidelity*[®] mirrors for this idea.

4 Now the outlook for your kitchens can be exciting, as well as practical. Sliding glass windows with a wrap-around, pass-through serving counter make this kitchen and the great outdoors one big happy unit.



PPG glass (by bringing the outdoors indoors).





Who says attics have to be dull, dark and dismal 5 places. Gable end windows in this colonial create a cheerful upstairs rumpus room. It means more usable floor space, more salable floor space.

Richard Chalfant, Architect

obert Andrews, Builder

A two-story fixed-glass window wall overlooking a private court 6 gives this dining area light, excitement and a real outdoors flavor.

7 For leisure living, here's the up-dated sun porch. PPG *Herculite K* safety glass in glass walls and sliding glass doors make it possible, practical and safe. The idea itself is one that helps build quality-builder reputations.

If you'd like hundreds of other innovative ideas with glass, send the coupon for PPG's full-color brochure, "Open House /USA." It's yours, free.

PPG Industries, Inc., Dept. HH-1-6 One Gateway Center Pittsburgh, Pa. 15222

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City_

State. CIRCLE 38 ON READER SERVICE CARD

Zip.

NEWS/TECHNOLOGY



In mini-size ...

TELEVISION CONTRACTOR OF THE SAME

Single-house sewage plant is made entirely of fiberglass, including inner tank. It weighs only 150 lbs. and can treat 600 gallons of wastes a day. Air supply is from compressor.

Large system is for a 350-unit mobile home park near Allentown, Pa. Tanks are epoxy-coated steel. Two inner units (*right in photo below*) are about to be hoisted into outer shells.

... or maxi



... two on-site treatment plants for homes in non-sewered areas

The smaller plant (top) is for single-family homes; it can also serve as a replacement for wornout septic tanks. The larger plant is for housing projects of 25 units or more.

According to the manufacturer, Nyadic Sciences Inc., West Chester, Pa., the operating principle of both plants is the same—a combination of activated sludge and forced aeration. A stream of compressed air keeps the wastes constantly aerated to promote bacterial action, and the sludge, instead of settling, is recycled. The smaller plant gets the job done in two stages; the larger one in three. The larger plant is also capable of chemically removing phosphates.

For the small plant, a leaching field the size of a septic tank's (or slightly smaller) is required. Effluent from the larger plant is discharged directly—as with a conventional plant. The efficiency of the two treatment plants is high—well above government requirements. The smaller unit gets 85%-95% solids removal—even better than some large-scale municipal plants. One reason for this, says Nyadic Sciences, is a longer-than-average detention time (20 hours). The larger plant has a shorter detention time (9 hours), but gets 90%-95% efficiency through its three-stage system.

The small plant costs \$995, not including installation and the building of a leaching field.

The larger plant costs about \$75,000. But this price includes a complete turnkey package design engineering, obtaining a permit, installation, putting the plant in operation, training an attendant, and a year's servicing. There is also a leasing arrangement available to builders and developers if desired.

CIRCLE 276 ON READER SERVICE CARD

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Paint our factory primed hardboard siding any color you want. And we'll stand behind your paint job for five years. Just read the guarantee below to find out how it works.

G-P hardboard sidings are easier to work with too. They are all tempered for durability and dimensional stability. And then backsealed and prime coated to give you a hard, tough surface. Tough enough to resist almost anything.

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applied as a conditions set forth on the Application and Installation and Painting Instructions for lactory-primed exterior hardboard siding (available with the siding or at any G-P distribution Center) have been met, the paint will not blister, peel, chip or crack for a period of five (5) years from the date the siding is installed when painted within 90 days of installation. This guarantee does not cover damage caused by improper storage before installation or damage as a result of dust storms, hail or other acts of God, or any physical abuse. In the event the paint blisters, peels, chips or cracks under

Five (5) Year Painting GUARANTEE: Ge

conditions covered by this guarantee, G- agrees that it will, and G-P's liability shall in any event be limited to, furnishing the pain necessary to repain the affected portion of the siding. In order for this guarantee to be effective the siding installation must first be registered by filling in the registration form providee with the siding and sending the form to Georgia-Pacific Corpora tion, 900 S.W. Sth Avenue, Portland, Oregon 97204. The form mus be received by G-P not later than thirty (30) days after the topcoa has been anothed

GEORGIA-PACIFIC Portland, Oregon 97204

CIRCLE 41 ON READER SERVICE CARD



LETTERS

Joint ventures

H&H: The subject is timely, the need is great. Your presentation ["Joint Venturing," MAR.] deserves praise and support.

May I add that I am pursuing this theme with land acquisition. We are at the point in one parcel of 80 acres (300 acres in various areas) in a large metropolitan area where we are looking for an equally aggressive group, be it factory, developer, etc., to joint venture with.

May we continue to receive "pulse" notes on this matter.

BERNARD D. SOBLE GEORGE G. ALDER Howland-Alder Realty Inc. Ann Arbor, Mich.

Mobiles vs. modulars

H&H: During the past year the distinction between modular housing and mobile homes has been blurred, especially by those charged with upgrading the image of the mobile home. The tendency is to emphasize only the general similarity that both types consist of three-dimensional units hauled by trailer.

The fact that modular housing is permanent housing built to meet local building codes and qualify for long-term mortgage financing is too often ignored.

The fine article in your April issue should do a lot to remind the housing industry that there is a major basic difference in the two types of housing.

RICHARD L. BULLOCK executive vice president National Association of Building Manufacturers Washington, D.C.

H&H: You did an excellent job in the April article on mobiles and modulars. The exception I would take is that the most obvious obstacle to modulars is not in the manufacturing or production area but in the marketing area.

The mobile home people have solved their marketing problem to the current tune of 400,000 units a year. Further, the growth rate of mobiles over recent years shows that a satisfactory, industry-wide marketing solution has been achieved. The mobile home marketing solution (via dealer networks, bank floor/dealer financing, mobilehome parks, and financing for the consumer purchase) has allowed this industry to put millions of people into low-cost, clean housing.

Whether the same marketing approaches are right and workable for the modular firms remains to be seen. It is first important to recognize that a significant marketing problem exists and that it is a new problem. The modular industry does not appear ready with sales and marketing plans to support even 50 modular plants at two units per day, let alone the 200 plants that are ready to build modulars. To sustain minimum production rates for 200 plants, the industry's marketing arms must deliver 100,000 buyers, each with access to a piece of land and \$10,000 every year.

I anticipate that far more modular companies will fail for lack of ability to solve their marketing problems than for lack of ability to solve their production problems.

JOSEPH B. BONNEY, project director Leonard Guss Assoc. Inc. Tacoma, Wash.

Reader Bonney's point is well taken if one assumes that those modulars that compete with mobiles will be sold in the same way-wholesaled to dealers who then retail them. We don't think it will happen that way. The modular is, after all, just a small house; a homebuilder is the logical person to develop land, put modulars on it, and sell. This is the business he's already in. Hence the modular manufacturer has a market ready and waiting. All he must do is produce enough of the right units at the right price.

We take exception to one of Mr. Bonney's statements: we don't consider mobiles as low-cost housing. As we showed very clearly in our April story, the modular is far less costly in the area that really counts —the monthly payments. Further, no housing that depreciates 50% in five years can be considered low cost—ED.

HAH: The HAH survey on mobile homes indicates the average cost of a mobile home to be substantially higher than the average price quoted by the industry for a $12' \times 60'$ home—\$6,100.

However, your field correspondents surveyed such metropolitan areas as Atlanta, Miami, Chicago, Dallas, San Francisco, and Seattleall high-cost areas. Only about 20% of the nation's mobile home sales are made in the nation's major metropolitan areas. The heart of mobile home sales is in rural areas and medium and small municipalities. In the metropolitan areas, higher prices are reflected in the demand for economical shelter and supply of homesites. Had H&H visited and interviewed industry persons in areas such as Marion. Ill.; Paducah, Ky.; Fargo, S.D.; Mountain Home, Ark.; Fayetteville, N.C.; Charleston, W. Va.; etc., an average price would have been realized.

The homes are built to exceed a 20 year life—two to three times as long as the financing period. The A119.1 standard is a performance standard and the tests were designed by the Battelle Memorial Institute.

JERRY BAGLEY, public relations director Mobile Homes Manufacturers Assn., Chicago HOUSE & HOME did not check mobile-home prices in smaller towns, so we cannot agree or disagree with Mr. Bagley.

We suggest, however, that the MHMA declare openly in all future press releases it distributes that the \$6,100 average price of a 12' x 60' mobile home applies only to those units sold in Paducah, Fargo, and Broken Elbow—ED.

H&H: I read your article, "It's time to take the low-price market back from the mobiles," with mixed emotions.

As a building inspector, I certainly agree that there is a market for modulars, and have been a proponent of this type of dwelling unit for several years. I have been surprised that manufacturers haven't jumped into this field. However, as a mobile home owner I believe the authors of this article were quite unfair to the mobile home industry and to the public in general in the presentation of their "facts."

The insinuation that mobile homes are all constructed with 2x2 studs, and are of inferior construction throughout makes it quite apparent that the authors have little knowledge of actual mobile home construction.

Before I purchased my 20'x60' Vagabond mobile home, I visited the factory, and you can be sure I watched the entire process with a critical eye. The studs are kiln dry 2x3's at 16" on center; the roof was adequately trussed; the floor joists were more than adequate; and the construction throughout met performance code standards. The ceilings, walls, and floors were insulated.

The authors are apparently talking mobile home and thinking trailer. Well-built mobile homes will last as long or longer than many of the low-priced homes being erected in this city under the uniform building code with proper inspection. Compare a line wire stucco exterior with good anodized aluminum or redwood siding on a mobile home. How about a composition roof versus a lifetime aluminum roof? Fire blocking in a frame is no longer required by code. They are installed at three heights in a mobile home wall. How many modern low-priced homes in California are insulated throughout?

The Blue Book used by dealers does not reflect the actual market value. In many cases the price is higher that the original cost. Proper maintenance is required on any home.

The authors have overlooked the fact that there are several million satisfied mobile home owners who enjoy this way of life. Retired and semi-retired couples living in a good park, well regulated and maintained and providing recreational facilities for their leisure time would not trade this way of life for another home.

We do need modulars in varying price ranges; however, to meet the need of lower-priced homes, it is doubtful that the construction and finish will differ much from wellbuilt mobile homes.

The state of California has preempted the rights of building officials as pertains to field inspection of factory-built homes. This is a step in the right direction and will make it possible for modulars to be erected without local harassment Zoning is another problem. No doubt, many neighborhoods will take a dim view of a modular being erected in their area. Land developed strictly for modulars in this city would require planning commission and city council approval. It is doubtful at the present time that developers could get either, but I am sure this will change.

I can appreciate the homebuilders' attitude toward mobile homes. They have certainly been hurt by this business and should be prodded into the modular market. I cannot agree with the authors' approach. I believe it is poor business to run a competitor down in an attempt to improve the image of another product. The proper approach should be to build a better mousetrap.

I have owned several homes. We purchased a mobile home after making a thorough study of the matter simply because this was a type of living we could enjoy. Personally, I would never change back. Most of the people in good parks in this area feel the same way.

In conclusion, I have high hopes for good modulars. They have a place and could be one answer to our present high-priced housing. Perhaps good modulars will shake up the manufacturers of the poorer mobile homes, and everybody will get a better product.

KEITH W. SOWL, senior building inspector Richmond, Calif.

There are good mobiles and Reader Sowl seems to have found one. However, most mobiles aren't like this. We know. We checked. And the contention that many mobiles will outlast some low-priced homes is certainly unproved.

The Blue Book may not reflect exactly what a buyer will pay for a used mobile, but it does show what a buyer will get for one when he sells. And it's a poor bargain in our opinion.

Homebuilding has been hurt by mobiles because builders haven't gone after that market properly. But the group really being hurt is mobile buyers, who are paying extraordinarily high loan rates and suffering very high depreciation —ED. What's our "know-it-all" doing at the bottom of a stone quarry?

<complex-block>

how this ad in House & Home paid for itself 18 times over in actual sales

CIRCLE 69 ON READER SERVICE CARD

\$54,612 in sales have been traced directly to readers who used House & Home's reader service card to request more information on U.S. Plywood's new Sanspray stone-on-plywood siding.

Not counting action taken by readers who contacted U.S. Plywood directly, actual sales triggered by the ad totaled 18 times the cost of the ad.

In addition to actual sales, the U.S. Plywood ad resulted in \$127,302 in specifications...\$82,067 in siding readers are planning to purchase...\$1,740 in approvals...\$176,568 in recommendations...and \$1,167,394 in siding 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 U.S. Plywood ad paid for itself 18 times over is readily available from



Jet Setter, Price Pfister's new concept in bathing luxury. This sleek new deluxe shower head permits a wide choice of spray patterns. Long-lived showering pleasure is assured by its self-cleaning agitating action and effortless operation. Competitively priced Jet Setter by price Pfister . . . for a beautiful sales splash.

the day the Jet Setter made a big splash

PRICE PFISTER Manufacturers of Plumbing Brass • Pacoima, Calif. 91331 • Subsidiary of Norris Industries •

Patman's banking reform bill

Does it really make sense to ban piece-of-the-action deals by apartment lenders?

We don't think so. And that's why we're strongly opposed to Section 14 of the 1971 Banking Reform Act.

Chairman Wright Patman's House Banking and Currency Committee has been holding hearings on the reform bill; the section in question here would rule out participation by lenders in either the income or the ownership of apartment projects.

It's aimed, of course, at eliminating the socalled kickers which give the lender a share of a project's equity or profits as part of the mortgage deal. Kickers became prevalent over the last couple of years when money was tight. Not all lenders insisted on them, by any means. But many did—most of them insurance companies. And builders and developers who had to borrow on kicker terms or stop building have been vocally angry, especially since rates have eased and money is available on more or less normal terms again.

Section 14 has become a hot issue, fraught with emotion and beclouded by charges and counter-charges. Its supporters—NAHB and the National Association of Real Estate Boards, for example—see it as the one way to halt "unconscionable deals" by apartment lenders. Its opponents—mainly lenders but also many builders and developers—call it "an abomination."

In our view, Section 14 is a simplistic, political approach to a complex economic problem. Granted, some lenders took advantage of scarce money to wring extra blood out of some developers. But overreacting is not a sound solution, and Section 14 is overreaction. In times when money is plentiful, such as now, there's no need for it. In times when money is tight and costly, it could shut off a major source of apartment financing. And at any time, it could kill the possibility of lender-builder joint ventures.

Somehow, the idea has gotten around that participation deals are, by their very nature,

bad. We don't believe they are.

In the first place, they give the builder, who is traditionally undercapitalized, the extra front money he needs to expand and to produce better planned, better designed projects than he usually can with just his own capital. Although he parts with a slice of his equity, he lessens his risks, and he is often able to make up much of the profit he gives to his money partner by being able to build more efficiently.

In the second place, participation deals bring into housing money that might otherwise go elsewhere. Housing, like any other segment of the economy, competes for what money is available. And lenders, like any other investors, seek out the most attractive investment—be it stocks, bonds, convertible debentures, or mortgages.

When credit is tight and money expensive, mortgages are not all that attractive as investments. For one thing, a lender may feel that a proposed project doesn't support a competitive interest rate. For another, he may balk at putting money into a long-term, non-liquid investment that offers no hedge against inflation. So he either takes his money elsewhere or looks for a sweetener to render the mortgage more attractive. And the sweetener that usually looks best is a piece of the developer's action.

In any case, the builder can take the deal or leave it. Nobody is forcing him to take it.

We don't like many of the deals that were made. We believe that a lender should buy his equity, not squeeze it out as the price of a loan. But we believe that to react in a manner that risks shutting off a major source of money is throwing the baby out with the bathwater.

If Mr. Patman's committee is seriously concerned about the plight of the builder when money is tight, we suggest that it might better employ its time seeking a constant supply of reasonably priced money for housing.

-JOHN F. GOLDSMITH

Who's building the modulars... anc how many?

These questions can now be answered, thanks to a just-completed survey by HOUSE & HOME's research department. A great deal of other significant information was unearthed too, and it all adds up to the beginnings of an accurate picture of housing's newest and most promising sub-industry Between 25,000 and 26,000 modular homes were built in the United States last year.

The bulk of these—about 19,000—were single-family detached units; about 6,400 were multifamily units.

Most of them were manufactured by 183 different manufacturers.

Approximately 25% of these manufacturers are also building mobile homes.

If all the plant space in which modulars are being built this year were fully utilized, the manufacturers could turn out more than 150,000 units annually.

Those are the most obviously interesting facts to come out of HOUSE & HOME's survey of modular producers, the details of which are given on the next ten pages.

The importance of these figures is that they give the housing industry accurate pegs on which to hang its modular hat. There have been some other surveys and a lot of estimates in the modular field, but while results of most of the responsible ones are more or less in the same ballpark, discrepancies are considerable. Our own estimates of annual modular production for 1970 were about 25% low; others have been as much as 50% or more on the high side.

There are some special aspects to this survey that make it unusually valuable:

First, we believe it is much more accurate than any other survey on this subject to date. Our reasons are given below.

Second, it contains information on plant sizes—present and future—which is indispensable if accurate judgements on the immediate future of modular housing are to be made.

This does not mean, however, that HOUSE & HOME considers its survey 100% accurate. Modular companies are starting or folding up every day, and there is no way to keep track of them

all. Possibly we have omitted a couple of sizeable companies simply because their names do not appear on any industry list available to us. If companies of any size have been omitted, we would appreciate hearing from them so that they can be included in future surveys.

Also, the survey data came from the modular companies themselves. And while we have no reason to doubt any of it, at the same time we have no way to verify it.

How the survey was made

We began with every list of modular producers we could lay our hands on—from associations, consultants, and even other publications (the differences among these lists were astonishing). After eliminating the duplications, we added companies we knew of that hadn't appeared in any of the lists. The final number receiving questionnaires was 480.

This number decreased rapidly as answers came in. There were duplications from companies that operated two or more plants, and many "no address", "moved", or "out of business" returns. We found that many of the companies produced components, prefabs, mobile homes, or non-residential modular buildings—but not modular houses.

All of this reduced the list to about 200 companies.

Next, we arbitrarily decided that companies which have plants of less than 10,000 sq. ft. and no plans for immediate expansion were too small to be included on a national list of manufacturers.

If such companies grow, we expect them to appear in later surveys. Meanwhile their current production is too low to affect overall totals very much.

Finally, we cross-checked the information on the questionnaires, and when something

didn't jibe, we called the appropriate company. This took about 50 phone calls, and pared the list to a final 183.

Let it be noted that our results are based on actual count, rather than the statistical projections used by some other modular surveys. If a survey with a 50% return showed, say, 20.000 units built, projected results would indicate 40,000 units for a 100% return. This technique, common to both private and government research, wasn't necessary in our case because 1) our return was nearly 90% and 21 it included all major producers and most smaller ones. So our total is a little low.

What questions were asked—and why?

The first group of questions gives a picture of the company itself: Is it independent or a subsidiary of a larger corporation? Is it publicly held? The answers have a bearing on the financial strength of a modular producer, hence his ability to expand.

The second group of questions covers the manufacturer's type of operation: Does he produce single-family or multifamily modulars (the two types usually involve markedly different operations)? And what other types of house manufacturing is he doing—prefabs, for example, or mobile homes?

The third group pertains to the manufacturer's modular production: How many units did he produce in single-family and/or multifamily categories? Were they sold to other builders or dealers, or used in the manufacturer's own projects? In future years the answer to this question will help determine the shape of not just modular housing but the entire housing industry.

The fourth group deals with the size of the manufacturer's plant: How much space is he

now using, and how much expansion does he plan? This is perhaps the most meaningful portion of the whole survey. If vou know a modular producer's plant size, you know his production capability; if you check this against his present production, you know whether he's living up to his potential or not; if you know how much he plans to expand his plant space you know how much his production capability will increase; and if you add up all the plant areas in the country, you get a reasonably accurate picture of how far modular housing can go in the next year or two. All of this is covered in the analysis at the end of this survey.

The last question asks the manufacturer's estimated production for 1971, and we suggest that not too much weight be given to the results. Not all producers answered the question, and some were obviously over-optimistic. Other surveys have used the same question: According to one, 1970 modular production should have been nearly 40,000 units instead of 25,000; according to another, this year's production should reach over 130,000 units; and still another predicts over half a million units by 1974. Nevertheless, the answers do offer a clue to how the companies feel -individually and collectively -about the immediate future of the modular housing industry.

Answers to all the survey questions are tabulated on the next ten pages. The companies are listed alphabetically in three groups based on plant size: 50,000 sq. ft. or more in the first group, from 25,000 to 50,000 sq. ft. in the second, and from 10,000 sq. ft. to 25,000 sq. ft. in the third. A special group includes companies that can't be accurately placed in any of the other three.

Finally, a general analysis of the meaning of the survey results starts on page 58.

Company	State	Parent company	Publicly held company?	/?	of housing _l	produced								
				Prefab		Mobile	Modular							
				Precut	Panelized		Single-fam.	Multifam.						
Companies with plants of 50,000 sq. f	ft. or more													
Aabco Industries	S.C.		yes				1							
Active Homes	Mich.	Active Tool & Mfg. Co.	no			1	. 1							
Americana Homes	Pa.	Hodgson Houses	yes				1	1						
American Modular Homes Corp.	Ala.	Hoover Ball & Bearing Co.	no				1							
Arbor Modules	Conn.	Arbor Homes	no				V 	· ·						
Automated Cubical Space	Fla.	Sanford Ind.	no				V 							
Behring Corp.	Fla.		yes				✓ ✓							
Brown Enterprises	Mo.	Brown Enterprises	yes .			1	✓ ✓							
Builders Homes Inc.	Ala.	Wm. Lyon Dev. Co.	yes				(Start June)	1971						
Building Block Invest. Group	Cal.		no				(Start) tart,	19/1						
Cardinal Industries	Ohio		no					J						
Coastal Mobile & Modular	Md.	Kirk Corp.	yes				1	1						
Commodore Corp.	Neb.		yes				<i>J</i>							
Conner Homes Corp	N.C.		yes			<i>√</i>	<i>✓</i>							
Contemporary Bldg. Systems	Fla.	Florida Gas Inc.	yes											
Contempri Homes	Mich.	Inc. Royal Craft Ind.	yes											
Crown Inc.	Conn.		no											
Cubex Inc.	Pa.	Mathew-Phillips					1	1						
Custom House Bldgs. Inc.	Cal.	Mathew Finings	no				1	✓						
Deluxe Homes	Mich.	Fleetwood Ent.	no											
DeRose Industries	Ind.	Fleetwood Lat.	yes			√ /	1							
Thomas J. Dillon & Co.	Ohio	Forest City	yes				✓							
Educator Sales Inc.	Mich.	Enterprises	no				-	1						
Environmental Systems Ind.	Mich. Cal.	Environmental	no				✓ /	<i></i>						
Fruehauf Buildings	Cal. Mich.	Systems Int'l Fruehauf Corp.	yes ves				<i>✓</i>							
General Electric	Pa.	Fruenaur Corp.	yes ves					J						
Sibraltar Industries	Pa. Md.		yes					~						
Guerdon Industries	Ky.	Guerdon Ind.	no				1							
Hanover Modular Homes	Ky. Tex.	International	yes		✓ . 		1	✓						
Hauser Homes	Pa.	Shelters Poloron Products	yes			1	1	1						
I.M.I.	Pa. Md.	Poloron Products Hercules Inc	yes			~	1							
Iome Building Corp.	Md. Mo.	Hercules Inc.	yes					1						
nland Homes	Mo. Ohio	Inland	no				V	1						
al-Donn Modular Bldgs.	Ohio Ohio	Systems Inc.	yes		<i>_</i>		J	1						
ingsberry Homes (All)	Contraction of the local division of the loc		no					1						
angsberry Homes (All)		Point Constants	yes		1		1							
ancer Mobile riomes the	Ga.	Boise-Cascade Standard												
andola	Cal. Ind.	and the second sec	no			✓ ✓	✓ ✓							

1970 modu	ılar produc	ction			Field erection provided	Factory data				Est. 1971 production	
Total	Single-fam.	Multifam.	% of production sold to builders or consumers	% of production built in own projects	provided	No. of plants	Location	Total plant area (sq. ft.)	Planned plant expansion area (sq. ft.)		
							s.c.	140,000		1,500	
400	400		100		no	2	S.C. Mich.	<u>140,000</u> 210,000		750	
350	350		80	20	no	1	Mich. Pa.	<u>210,000</u> 62,000		265	
150	150		100		no	1	Pa. Ala.	<u>62,000</u> 56,000		450	
200	150	50	100		yes	1	Ala. Conn.	<u>56,000</u> 80,000		500	
200	50	150	100		yes		Fla.	80,000	40,000	240	
10	6	4		100		1	Fla. Fla.		10,000		
35	35		40	60	yes	1	Fla. Mo.	350,000		450	
18	18		100		yes	1	and the second second	60,000		450	
				100		1	Ala.	100,000		1,200	
27		27		100		1	Cal.	100,000		500	
12		12	50	50	no	1	Ohio	72,000			
173	25	148	100		yes	1	Md. Ala.	85,000		156	
100	100		100		no	2	Va. N.C.	100,000		700	
200	200		20	80	yes	2	Ga.	120,000		400	
			100		yes	1	Fla.	120,000		1,500	
279	279		100			1	Mich.	71,500		500	
50	35	15	75	25	yes	1	Conn.	65,000	40,000	100	
175	35	140	10	90	yes	1	Pa.	90,000		500	
30	30		100		yes	1	Cal.	250,000		125	
460	460		100		yes	2	Pa. Mich.	220,000	120,000	1,400	
34	34		100		no	1	Ind.	98,000		250	
			20	80	yes	2	Ohio	66,000		800	
6	6		100		yes	1	Mich.	100,000		30	
30	30		100		no	1	Cal.	77,000		410	
3		3	50	50	no	1	Mich.	90,000	260,000	300	
30		30	100		no	2	Pa. Cal.	130,000		500	
300	300		100		yes	1	Md.	125,000		400	
1,500	and the second second	dormitories, hospitals, etc.	100		no	33					
300	300	line in the second seco	80	20	yes	13		500,000		300	
150	150		75	25	yes	1	Pa.	65,000		1,250	
250		250		100	yes	1	Pa.	100,000		700	
150	150		100		no	1	Mo.	68,000		900	
80	10	70	100		no	1	Ohio	100,000		500	
00	10		100		no	1	Ohio	80,000		300	
1.170	1,150		100		no	7	Ala. Utah Ohio Idaho	260.000	300,000	2,000	
1,150	1,150		5	95	yes	1	Ohio Idaho Cal.	53,000		100	
	22		80	20	yes	1	Ind.	75,000		200	
22	22	1			100						

Weslock Systems Fla. Westville Homes Corp. N.H. Amoskeag Co. no Wickes Corp. Mich. Yes Image: State of the sta									
Problem Problem Note Model Lexinguing Main Lexinguing Main Lexinguing Main Lexinguing Main Lexinguing Main Lexinguing Main Markar Elexing Mai	Company	State	Parent company	held	?	of housing			
PricePresP							Mobile	Modular	
LCA Modular Enterprises N.Y. LCA Modular Enterprises No. No. <td< th=""><th></th><th></th><th></th><th></th><th>Precut</th><th>Panelized</th><th></th><th>Single-fam.</th><th>Multifam.</th></td<>					Precut	Panelized		Single-fam.	Multifam.
LCA Modular Interprises NY Interprises no Image of the second seco	Levitt Building Systems	Mich.		yes					
Markinal Housing Corp.Md.Olin Corp.ywsAAAAAMaidand Co.ywsCo.A/AA/AA/AA/AMidland Co.ywsCo.A/AA/AA/AModular Housing SystemsPaywsCo.A/AA/AModular StructuresMinnYwsA/AA/AA/AModular Housing SystemsPaywsCo.A/AA/AModular Housing SystemsPaywsA/AA/AA/AModular Housing SystemsPaywsA/AA/AA/AModular Housing SystemsPaywsA/AA/AA/AMothar Housing SystemsPaywsA/AA/AA/AMothar Housing SystemsPaywsA/AA/AA/AMathonal Housing Corp.IndYwsA/AA/AA/AOtis InternationalTexPaywsA/AA/AOtis InternationalTexA/AywsA/AA/APestige StructuresMinhA/AywsA/AA/ARubiner Homes Inc.TexGypsum Co.ywsA/AA/ASpecific Technology Corp.TexGypsum Co.ywsA/AA/AStrike Homes Inc.TexGypsum Co.ywsA/AA/ASpecific Technology Corp.TexGypsum Co.ywsA/AA/ASpecific Technology Corp.TexGypsum Co.ywsA/AA/A </td <td>LCA Modular Enterprises</td> <td>N.Y.</td> <td></td> <td>no</td> <td></td> <td></td> <td>1</td> <td>1</td> <td>1</td>	LCA Modular Enterprises	N.Y.		no			1	1	1
National Corp. C.d. no -	Marlette Homes	Mich.		no			1	1	
Midland Co.YesImage: Solution of the sector of the s	Maryland Housing Corp.	Md.	Olin Corp.	yes		1			1
Modulage Ohio Alber Homes yes Image: Marcial Systems Pa yes Image: Systems Pa Modular Honsing Systems Pa yes Image: Systems Pa Image: Systems <	Matisohn Corp.	Cal.		no		1		1	
Modular Housing Systems Pa yes Ima yes Ima yes Modular Simetures Minn yes Ima	Midland Co.	Ohio	Midland Co.	yes			1	1	
Modular Housing Systems Pa yes No	Modulage	Ohio	Albee Homes	yes				1	1
Monarch Industries Ind. No Ind. No Ind. No National Homes Corp. Ind. yes I I I/I I/I National Homes Corp. Ind. yes I I/I I/I I/I Northwest Homes of Chehalis Wash yes IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Modular Housing Systems	Pa.		yes					1
Monarch IndustriesInd.noImage	Modular Structures	Minn.		yes				1	
National Homes Corp.Ind.yes/////////Northwest Homes of ChehalisWash.yes100	Monarch Industries	Ind.						Contraction of the	
Northwest Homes of Chehalis Wash. yes Image: Second	National Homes Corp.	Ind.			1	1	1		
Otis International Tex. no Image: Constraint of the second se	Northwest Homes of Chehalis	Wash.							Contraction of the
Ozark Homes Mo. no Image: Motion of the section of the	Otis International	Tex.		a management of					
Permon Minn. no Image: Minn. No Image: Minn. No Image: Minn. No Image: Minn. Im	Ozark Homes	A CONTRACTOR					1		
Prestige Structures Mich. Alco Universal Republic yes Image: Construction of the structure	Pemtom	Distant and the second		S A STREET					
Republic Modular Homes Inc. Tex. Gypsum Co. yes // // // // Rushmore Homes S.D. Clary Corp. no //	Prestige Structures								N. Y. BUNKSON
Rushmore Homes S.D. Clary Corp. no // // // Scholz Homes Ohio Inland Steel yes // // // // Scholz Homes Ohio Inland Steel yes // // // // Service Technology Corp. Tex. Corp. yes // // // // Shelter Resources Corp. N.Y. no // // // // Sterra Homes Cal. Kit Mig. Co. yes // // // Speedspace Cal. Potlatch Forests no // // // Starrett Modular Const. N.Y. Starrett Bros. yes // // // Swift Modular Systems Pa. Swift Industries yes // // // Swift Modular Systems Pa. Swift Industries yes // // // U.G.I. Corp. Pa. yes // // // // U.S. Factory Built Homes Cal. U.S. Affiliates no // // // U.S. Financial Yes // // // // //		STATISTICS.							
Scholz Homes Ohio Inland Steel yes J J J Service Technology Cop. Tex. LTV. Aerospace Corp. yes Image: Corp. J J Shelter Resources Cop. N.Y. no Image: Corp. J J Sierra Homes Cal. Kit Mfg Co. yes Image: Corp. J J Speedspace Cal. Porlatch Forests no Image: Corp. J J Starrett Modular Const. N.Y. Starrett Bros. yes Image: Corp. J J Swift Modular Systems Pa. Swift Industries yes Image: Corp. J J Swift Modular Systems Pa. Swift Industries yes Image: Corp. J J Swift Modular Systems Pa. yes Image: Corp. J J J UGCI Corp. Pa. yes Image: Corp. J J J USCO Corp. Va. Universal Leaf yes Image: Corp. J J USCO Corp. Va. Universal Leaf yes Image: Corp. J J USCO Corp. Ala Certain-Fried yes Image: Corp. Image: Corp.<	Rushmore Homes	No. of Street, St						1	
Service Technology Corp. Tex. LT.V. Aerospace Corp. yes Image: Corp.	Scholz Homes	COLOR DO	Inland Steel			1		1	1
Shelter Resources Corp. N.Y. no no Image: Market Resources Corp. N.Y. Sierra Homes Cal. Kit Mfg. Co. yes Image: Market Resources Corp. V V V Speedspace Cal. Potlatch Forests no Image: Market Resources Corp. V V V Starrett Modular Const. N.Y. Starrett Bros. yes Image: Market Resources Corp. V V V Swift Modular Systems Pa. Swift Industries yes V V V V Suift Modular Systems Pa. Swift Industries yes V V V V UGC Corp. Na. Universal Leaf yes V V V V USC O Corp. Va. Universal Leaf yes V V V V US. Factory Built Homes Cal. U.S. Affiliates no V V V V Valley Forge Corp. Ala. Certain-Teed yes V V V V Vindale Corp. Ohio yes	Service Technology Corp.		L.T.V. Aerospace						
Siera Homes Cal. Kit Míg. Co. yes // // // Speedspace Cal. Potlatch Forests no // // // // Starrett Modular Const. N.Y. Starrett Bros. yes // // // // Stirling Homex Corp. N.Y. & Eken Inc. yes // // // // Swift Modular Systems Pa. Swift Industries yes // // // // // Swift Modular Systems Pa. Swift Industries yes // // // // // UG.1. Corp. Pa. yes // // // // // USCO Corp. Va. Universal Leaf yes // // // // US. Factory Built Homes Cal. U.S. Affiliates no // // // // // Valley Forge Corp. Ala. Certain-Teed yes // // // // // Weil-McLain Ind. yes<	A REAL PROPERTY AND AND A REAL PROPERTY AND A REAL	Contraction of the							
Speedspace Cal. Portlatch Forests no V V Starrett Modular Const. N.Y. Starrett Bross yes V V Stifling Homex Corp. N.Y. Starrett Bross yes V V Swift Modular Systems Pa. Swift Industries yes V V V Swift Modular Systems Pa. Swift Industries yes V V V Town & Country Mobile Homes Tex. yes V V V V U.G.I. Corp. Pa. yes V V V V USCO Corp. Va. Universal Leaf yes V V V U.S. Factory Built Homes Cal. U.S. Affiliates no V V U.S. Financial Cal. U.S. Affiliates no V V Valley Forge Corp. Ala. Certain-Teed yes V V V Weil-McLain Ind. yes V V V V Westville Homes Corp. N.H. Arnoskeag Co. no V V V Weickes Corp. Mich. yes V V V V	A REAL PROPERTY AND A REAL	Sector March 199	Kit Mfg. Co.						
Starrett Modular Const. N.Y. Starrett Bros. & Eken Inc. yes Image: Const. N.Y. Stirling Homex Corp. N.Y. yes Image: Const. N.Y. Image: Const.		STATES AND INCOME.							1
Stirling Homex Corp. N.Y. yes Image: Corp. N.Y. Swift Modular Systems Pa. Swift Industries yes Image: Corp. Im			Starrett Bros.						
Swift Modular Systems Pa. Swift Industries yes Image: Construction of the system of the syste	Stirling Homex Corp.								
Town & Country Mobile Homes Tex. yes Image: Complexity of the second seco	and the second se		Swift Industries	- Indication	1	1	1	1	
U.G.I. Corp. Pa. yes V V USCO Corp. Va. Universal Leaf yes V V V USCO Corp. Va. Universal Leaf yes V V V U.S. Factory Built Homes Cal. U.S. Affiliates no V V V U.S. Financial ves V V V V V U.S. Financial U.S. Financial yes V V V Valley Forge Corp. Ala. Certain-Teed Products Corp. yes V V V Vindale Corp. Ohio yes V V V V Weil-McLain Ind. yes V V V V Westville Homes Corp. N.H. Amoskeag Co. no V V V Wickes Corp. Mich. yes V V V V Zimco Fla. Zimmer Homes Corp. yes V V V	Town & Country Mobile Homes	V PARTY AND INCOME.							V
USCO Corp. Va. Universal Leaf Tobacco Co. yes Image: Constraint of the state of the		A CONTRACTOR OF THE OWNER							1
U.S. Factory Built Homes Cal. U.S. Affiliates no Image: Constraint of the second secon	USCO Corp.	Country and the	Universal Leaf				1		
U.S. Financial Cal. U.S. Financial yes Image: style="text-align: center;">V Valley Forge Corp. Ala. Certain-Teed Products Corp. yes Image: style="text-align: center;">V Vindale Corp. Ohio yes Image: style="text-align: center;">V Image: style="text-align: center;">V Weil-McLain Ind. yes Image: style="text-align: center;">V Image: style="text-align: center;">V Weslock Systems Fla. Image: style="text-align: center;">Ves Image: style="text-align: center;">Image: style="text-align: center;">V Image: style="text-align: center;">V Image: style="text-align: center;">V Weslock Systems Fla. Image: style="text-align: center;">Ves Image: style="text-align: center;">Image: style="text-align: center;">V Image: style="text-align: center;">V Vestor: Mich. Vestor: Vestor: V Image: style="text-al	The second s								V
Valley Forge Corp. Ala. Certain-Teed Products Corp. yes Image: Corp.							1		
Vindale Corp. Obio yes Image: Corp. Image: Corp. <td></td> <td>The second second</td> <td>Certain-Teed</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		The second second	Certain-Teed						
Weil-McLain Ind. yes Image: Marcon and the strength of the strengt			Products Corp.					1	
Weslock Systems Fla. Westville Homes Corp. N.H. Amoskeag Co. no Wickes Corp. Mich. Yes Image: State of the sta	Weil-McLain					1			,
Westville Homes Corp. N.H. Amoskeag Co. no Image: Constraint of the state of th	Weslock Systems	and the second s		700			1		
Wickes Corp. Mich. yes Image: Corp. Image: Corp. Zimco Fla. Zimmer Homes Corp. yes Image: Corp. Image: Corp.	Westville Homes Corp.		Amoskeag Co.	10					V
Zimco Fla. Zimmer Homes yes / / / /	Wickes Corp.			-					
Corp. yes v v v	Zimco			TRACTOR PLACE	1				
			Corp.						V

1970 mod	O modular production				Field erection	Factory da	Est. 1971 production			
Total	Single-fam.	Multifam.	% of production sold to builders or consumers	% of production built in own projects	provided	No. of plant	s Location	Total plant area (sq. ft.)	Planned plant expansion area (sq. ft.)	
			3		yes	1	Mich.	140,000		600
(05	600	5	100		yes	3	Ind. Wisc. Iowa	220,000	80,000	1,050
605	600	3	100		no	AND THE PARTY OF	Kan. Mich. Ga. Ore. Pa.	1,080,000		1,500
1,000	1,000		100	100	yes	1	Md.	150,000	80,000	150
				100	yes	1	Cal.	100,000		100
15	15		100	100	no	2	Va. Ga.	366,000		1,000
400	400		100 80	20	yes	1	Ohio	70,000		455
197	169	28	Sand in contrast	40	yes	2	Pa.	90,000	40,000	2,100
500		500	60	40				78,000		300
50	10	40	100		no	-	Minn. Ind. Ga.	100,000		500
168	8	160	100		yes	21		150,000		1,575
1,050	350	700	50	50	no	1	Ind.	120,000		415
49	37	12	80	20	yes	1	Wash.	Es has even and a	-	400
			100		yes			95,000	12,000	500
14	14		75	25	yes	1	Mo.	525,000	12,000	300
100	100		100					56,000		1,050
326	324	2	70	30	yes	1	Mich.	110,000		1,050
60	60		60	40	yes	1	Tex.	150,000	The second second	30
38	38		100		no	1	S.D.	65,000	-	
98	98		30	70	no	1	Mich.	60,000	30,000	700
1	1		100		no	1	Va. Ala.	87,000	100,000	400
870	650	220	70	30	yes	3	Pa. Kan.	140,000		1,500
200	200		100		no	2	Ohio Pa. Cal.	130,000	140,000	400
410	350	60	100		yes	3	Pa. Cal. Ind. N.C. Pa.	342,000		650
125	100	25	50	50	yes	3	N.C. Pa. N.Y. N.Y. S.E./U.S.	265,000		750
1,200		1,200		100	yes	2	S.E./U.S.	200,000		3,000
370	320	50	80	20	yes	2	Pa. (2) S.C.	256,000	100,000	1,000
81	81		100		no	3	(1) Miss.	250,000		225
400	400		50	50	yes	2	(1) Miss. Pa. N.Y. (2) Va	175,000	85,000	1,200
350	260	90	50	50	yes	3	(2) Va. (1) N.C.	230,000		500
			30	70	yes	1	Cal.	58,000		675
200	200		100		yes	1	Cal.	60,000		340
				100		1	Ala.	66,000		
450	450		50	50	no	3	Fla. Ohio Okla. N.H. Va.	275,000		
740	712	28	100		yes	3	N.H. Va. Miss.	350,000		1,120
25	25		100		yes	1	Fla.	110,000		250
110	110		60	40	yes	1	N.H.	80,000	110,000	400
	402	36	90	10	no	3	Mich. Pa. Alberta, Can.	219,600	100,000	2,100
438	402	30	100		yes	1	Fla.	69,000		

Company	State	Parent company	held	Types	Types of housing produced					
			company?	Prefab		Mobile	Modular			
				Precut	Panelized		Single-fam.	Multifam.		
Companies with plants of 25,000 to 50,0	000 sq. ft.									
Allstate Modular Systems	Fla.		no				1			
American Eagle Homes	Mo.	Tampko Asphalt Prod.	no				, ,			
Architectural Specialties Inc.	N.Y.		no				1			
Avco Systems Crafted Homes	N.H.	Avco Corp.	yes				1	1		
Barber & Ross	Va.		no		1		v _	× ✓		
Barcraft Homes Inc.	S.C		no			1	✓ ✓			
Beaver Enterprises	Ga.	Brigadier Industries				v V				
Better Living Inc.	Va.		по							
Bradley Homes	Ga.	W. C. Bradley Co.	no				1			
Brand-S Homes	Ore.	Brand-S Corp.	no		1			/		
Burkin Homes Corp.	Mich.	Diana di Cong	no							
Cary-Way Portable Bldgs.	Tex.					,	1			
Concord Homes Corp.	Mo.	Valley Forge Corp	no		1		1	1		
Continental Mfg. Co.	Colo.	Forge Corp. M.S.I. Industries	yes		~		1			
Continental Modules Inc.	N.J.		no			~				
Creative Buildings Inc.	Ill.	P & F Industries	yes							
Cypress Homes Corp.	Fla.		no					1		
Del Nero Homes Inc.			no			J		J		
Design Homes	N.Y.		no				1			
The second s	Wisc.		yes			~	V			
Designaire Modular Home Diversified Structures Inc.	Pa.		no				1	1		
The second s	Va.						1			
Dixie Royal Homes Domino Homes	Tenn.						1			
	Mich.	Hessee Ind.	no					1		
Dukor Modular Systems	Cal.		yes				1	1		
Echo Module Systems Inc.	Mass.		no			and the second		1		
Endure Products Inc.	Fla.	Geri-Care	no	V	1		~			
Fontaine Modular Structures	Mass.	Nursing Ctrs.	yes					1		
Four Seasons Structures	Wisc.		no				~	1		
Fuqua Homes Inc.	Cal.	Fuqua Ind.	yes			1	1			
Geer	Neb.	Swett Homes	no			1	1			
General Homes Corp.	S.C.		no				1			
Heckman Industries	Ind.		no				1	1		
Highland Homes Inc.	N.D.	Robertson Co. Inc.	no				1			
Homestead Corp.	Mich.	Sterling Precision	no	\checkmark	1					
House of Merrill	Wisc.		yes				1	1		
Housing Systems Inc.	Ky.		no					1		
Insta-Housing Inc.	Ind.		no				1	1		
International Modulex Corp.	N.Y.		no				. 🗸	1		
52 H&H JUNE 1971										

1970 modu	ılar produ	ction			Field erection provided	Factory da	ata			Est. 1971 production
Total	Single-fam.	Multifam.	% of production sold to builders or consumers	% of production built in own projects	province	No. of plan	ts Location	Total plant area (sq. ft.)	Planned plant expansion area (sq. ft.)	
50	50		100		yes	1	Fla.	50,000		365
100	100		90	10	yes	1	Mo.	40,000	40,000	200
60	60		100	120-10	yes	1	N.Y. N.H.	30,000	30,000	300
84	84		100	A REAL	yes	2	Ind.	27,000	60,000	432
	and and and	1 miles	100		yes	1	Md.	46,000		200
240	240		100		yes	1	S.C.	46,000		600
		A. A. Martin	100		yes	1	Ga.	45,000		550
25	25		100	10.61	2 The Course	1	Va.	50,000		75
12	12		100		no	1	Ga.	45,000		144
115	105	10	100		no	1	Ore.	30,000		200
325	325		100		yes	2	Mich.	40,000	20,000	400
13	10	3	100		yes	1	Tex.	50,000		65
45	41	4	100	1912392	no	1	Mo.	32,000	30,000	490
134	134	10.00	100		no	1	Colo.	45,000	12,000	275
				100		1	N.J.	32,000		
550	50	500	50	50	yes	1	m.	50,000	20,000	1,100
36	30	6	100	THE REAL	yes	1	Fla.	30,000		175
50	50		100		yes	1	N.Y.	30,000		150
159	155	4	100		yes	2	Wisc. Iowa	35,000		235
100	70	30	100		no	1	Pa.	50,000	60,000	650
153	150	3	100		yes	1	Va.	45,000	20,000	200
110	110		75	25	yes	1	Tenn.	32,000		200
56	110	56	40	60	yes	1	Ind.	40,000	100,000	500
74	20	54	100		yes	1	Cal.	30,000		
/4	20		100		no	1	Mass.	40,000		500
20	20		100		yes	1	Fla.	37,000		100
20	20	240	80	20		1	Mass.	30,000		300
39	39	210	100		yes	1	Wisc.	30,000	30,000	110
350	350		100		yes	1	Ore.	50,000	A Constant	450
86	86		100		no	1	Neb.	40,000		150
40	40		80	20	no	1	S.C.	35,000		100
75	75		100		yes	1	Ind.	35,000		275
8	8		100	The state	yes	1	N.D.	28,000	4,000	90
0 1	1		100		no	1	Mich.	40,000	E Statistics	
41	38	3	100		yes	1	Wisc.	47,400		2.30
41	36	-	100		yes	1	Ky.	50,000	25,000	200
31	30	1	90	10	yes	1	Ind.	31,000		162
51	00	-	75	2.5	yes	1	Tenn.	40,000		590
			15		A State State	C. C	The second second		H&Hu	NE 1971 53

Company State	Parent company	held		of housing _j	produced		
		company?	? Prefab		Mobile	Modular	
			Precut	Panelized		Single-fam.	. Multifam.
Martin Modules Ill.	Metro-Modular Corp.					1	~
Miracle Homes Inc. Tenn.		yes				1	↓ ↓
Modular Homes Inc. Kan.		по				1	
Mullins Homes Ga.		no		1			
Munday Homes Inc. Ky.	Convenient Ind. of Amer,	no				<i>√</i>	<i>√</i>
Northland Homes Inc. Mich.		no				1	
Pacific Homes Ind. Cal.		no			1	, ,	
Panorama Corp. Wash.	Panorama Corp.	по				<i>,</i>	1
Person & Person Wash.		no	1			, ,	
Post Coach Inc. Pa.		no				1	
Precision Structures Tex.		no				<i>,</i>	
Reasor Corp. Ill.	Reasor Corp.	no	\checkmark	1		1	1
Sandler Bilt Homes Iowa	U.S. Home Inc.	no				<i>,</i>	/
Stiles-Hatton Inc. Mich.		no					✓ ✓
Stylemaster Mfg. Co. Ind.		yes		1		1	
Stylex Homes Inc. N.Y.		yes				V V	
Suburban Homes Corp. Ind.		no				V V	
Tek Homes Corp. Ind.		no	1	1		V V	1
Transamerica Homes N.C.	Transamerica Corp.	yes				✓ ✓	
Tri-Par Homes Inc. Mich.	Corpe	yes				V 	
Uni-Home Inc. Tex.		no				✓ ✓	
Union Mfg. & Supply Co. Colo.		по	1	1		√ √	
United Module III.		no				√ √	
Utah Mobile Home Inc. Utah	Vista Int'l	yes			1	✓ ✓	V
Welbilt Homes Ga.		no				<i>✓</i>	
Westway Building Center Wash.		no	1	1		V 	
William Bond Inc. Tenn.	William Bond Inc.	no				V 	
Wisconsin Homes Wisc.	Rollohome Corp.	no			<i></i>	V 	
Companies with plants of 10,000 to 25,000 sq. ft.							
Allied Builders Corp. Colo.		yes				1	
C & M Construction Mont.		no				V 	
D & J Palmer Pa.		no				√ √	~
Dadco Modular Inc. Wisc.	Dadco Diversified	no					
Davenport Homes Corp. Fla.		no					<u></u>
Delta Homes Ind.						1	
DMH Company Mich.	National	no					
Dyna-Flex Modular Homes Fla.	Gypsum	yes	,	,	~	/	
Everglades Fla.	J. D. Manley	10	~	<i>_</i>		1	
Vigiano	Const. Co.	no				1	

1970 mod	1970 modular production			Field erection	Factory dat	Est. 1971				
Total	Single-fam.	Multifam.	% of production sold to builders or consumers	% of production built in own projects	provided	No. of plants	Location	Total plant area (sq. ft.)	Planned plant expansion area (sq. ft.)	production
35	35		1000		yes	1	111.	50,000		350
205	80	125	100		yes	1	Tenn.	30,000		260
203	200	120	100		no	1	Kan.	40,000	15,000	250
142	142		75	25	yes	1	Ga.	30,000	Constant States	250
234	226	8	70	30	yes	1	Ky.	45,000		500
40	39	1	10	90	yes	1	Mich.	44,500	16,000	60
40	39		100		yes	1	Cal.	50,000	50,000	300
30		30		100		1	Wash.	30,000	Contraction of the	140
	3		100		yes	1	Wash.	40,000		10
3	4	The state of	100		yes	1	Pa.	30,000	20,000	150
4	60		20	80	yes	1	Tex.	50,000	100,000	300
60		5	100		yes	1	III.	36,000	12,000	400
105	100	1 Contraction	100	125	100	1	Iowa	30,000		150
105	95	10	The second second	50	yes	1	Mich.	50,000	50,000	900
290	34	256	50	50		2	Mich.	40,000	10,000	1,150
75	75	-	50	50	yes	1	Ind. N.Y.	30,000	32,000	400
140	140		100	10	yes	1	Ind.	40,000		300
150	150		90	10	yes	1	Ind.	32,000		750
230	200	30	100	Entry	yes	The second second second	N.C.	40,000	200 300	
			100		yes	1		30,000		150
50	50		70	30	no	1	Mich.	37,000	15,000	200
2	2		100		yes	1	Tex.		15,000	195
40	40		100		yes	1	Colo.	42,000	and the second second	200
41	27	14	10	90	yes	1	Ill. Utah	38,000		350
117	117		100	-	yes	2	Wash.	27,000		400
200	200	R. Stars		100	yes	1	Ga.	43,000		110
4	4		80	20	yes	1	Wash.	50,000		200
20	20	-	100		yes	1	Miss.	35,000		250
112	112		100		no			40,000		200
							and the second second			100
15	15		100		no	1	Colo.	18,000	20,000	240
150	150		50	50	yes	2	Mont.	25,000	20,000	240
	19 J. C. S. S.		10	90	yes	1	Pa.	8,400	6,000	500
			50	50	yes	1	Wisc.	22,000		500
25	25		100		yes	1	Fla.	18,000		150
70	70		100		yes	1	Ind.	25,000	5,000	250
12	12		100			1	Kan.	25,000		125
87	87		92	8	yes	1	Fla.	18,000		184
190	190		95	5	yes	2	Fla.	15,000	50,000	500

Company	State	Parent company	Publicly held company?		of housing	produced		
			company.	Prefab		Mobile	Modular	
				Precut	Panelized		Single-fam.	Multifam.
Foremost Industries	Pa.		no				\checkmark	
Gateway Homes	S.C.	Land Lease Corp.	no				1	
Homes by Keystone	Pa.		no				1	
Knecht Industries	S.D.		по	1	1		1	1
Manufactured Homes of Cal.	Cal.	Boise-Cascade	yes		1		1	1
Modufab Corp.	Fla.		yes				1	1
Modular Component Systems	Cal.	Gimbel Ind.	yes				1	
Modular Systems Inc.	Ohio	Weakley Mfg. Co.	no		1	1	1	1
Module Corp.	Minn.	Modular Industries	yes				1	
National Modular Inc.	Miss.		no				\checkmark	1
Nationwide Manufacturers	Va.	Nationwide Homes Inc.	yes				1	
New England Homes Inc.	N.H.		no		1		/	1
Oldsmar Industries	Fla.	Customline Products Inc.	yes			1	1	3. 2 T
PreBuilt Structures Inc.	Wash.		no				1	✓
Quali-Con Homes	Ky.		no		199-197 m		1	
Savina Home Ind. Inc.	Kan.		no				1	1
Sigma Industries	Ga.		по				1	
Southwest Forest Homes	Ariz.	Southwest For. Ind.	no			1	1	
Starcraft Homes	Idaho	Publishers Paper Co.	no				1	
Stearnswood Inc.	Minn.		no				1	
Stressed Structures Inc.	Colo.		no		LED MEN			
Superior Modular Homes	Mo.		no				1	V
Timbercraft Homes	Iowa		no		1			
Timley Corp.	Tex.		no				1	V
Truss & Component Co.	Tex.	Wilson Cos.	no		1			/
Trus Manufacturing	Conn.		no					
Unibilt Industries	Ohio		no					×
United Durham	N.C.	United Durham Inc.	yes					V
U.S. Modules Inc.	Ariz.	Dunan me.	ло					
Whitman Industries	Mich.		yes				/	
Special category								
Champion Home-Bldrs. Co.	Idaho		yes			1	1	
In production, but output figures not a			705			~		
Construction Modules Inc.		H. B. Zachary Co.	no				,	
Manufactures concrete modules on an outdoor production setup		The Di Zachary Co.	no					V
McCann Homes	Pa.							
Company does not wish to divulge day			по					✓
Totals								
					and the second second			and the states

-					Field	Factory da		Est.			
1970 modi	ular produc	ction			Field erection provided	ractory d	a tot			1971 production	
Total	Single-fam.	Multifam.	% of production sold to builders or consumers	% of production built in own projects	provideu	No. of plant	ts Location	Total plant area (sq. ft.)	Planned plant expansion area (sq. ft.)		
45	45			100	yes	1	Pa.	17,000		50	
24	24		100			1	S.C.	8,000	19,000	52	
75	75		100		yes	1	Pa.	21,500		150	
109	102	7	70	30	no	1	S.D.	22,000		215	
35	35					1	Cal.	14,000	14,000	200	
			100		yes	1	Fla.	22,000	6,000		
1	1		90	10	yes	1	Cal.	18,000		200	
58	56	2	100		no	1	Ohio	20,000		175	
11	11		50	50	yes	1	Minn.	10,000	10,000	36	
			50	50	yes	1	Miss.	22,500	20,000	250	
60	60		100		yes	1	Va.	24,000	114,000	250	
108	88	20	100		yes	1	N.H.	19,000	55,000	300	
134	132	2	80	20	yes	1	Fla.	10,000	48,000	246	
55	5	50		100	yes	1	Wash.	20,000		40	
17	17		50	50	yes	1	Ky.	7,200	6,000	100	
18	18		100		yes	1	Kan.	12,000		150	
8	8		50	50	yes	1	Ala.	13,000	8,000	300	
3	3		50	50	no	1	Ariz.	10,000	123,000	2,500	
30	30		100		yes	1	Idaho	22,050		160	
40		40		100	yes	1	Minn.	19,000		80	
40			50	50	no	1	Ind.	15,000		600	
100	100		100		yes	1	Mo.	20,000		175	
16		16	50	50	CHELES-MA	1	Iowa	13,000	5,000	50	
101	101		50	50	yes	1	Tex.	20,000	20,000	500	
30	2	28		100	no	1	Tex.	10,000	25,000	60	
108	36	72	15	85	yes	1	Conn.	10,000	10,000		
20	20	1	100		yes	1	Ohio	14,000	30,000	270	
20			98	2	yes	1	N.C.	11,000	49,000	55	
			100		yes	1	Ariz.	25,000		175	
130	130		100		yes	1	Mich.	20,000		230	
150	100										
			100		no	7 Calif	f. Colo. Fla. Idaho nd. Minn. Neb.	° 505,000			
			100								
			75	25	yes	2	Canada Tex.				
			15								
			100		yes					750	
			100								
25,528	19,093	6,435				278		15,357,650	3,051,000	77,217	
25,528	19,093	0,405		_							

Out of the modular statistics, a picture begins to emerge

It would probably be more accurate to call it a sketch than a picture. Despite the fact that such figures as are available show that modular volume roughly doubled from 1969 to 1970, there simply aren't enough modular companies in full production to indicate with any certainty where this sub-industry is going.

Nevertheless, there are hints. Mix them with a little common sense and it's possible to draw at least a few tentative conclusions about what's going to happen to modulars over the next two or three years.

Mobile companies are big in modulars

And there are very good reasons for believing that their role will increase at least proportionately as modulars gain an increasing share of the housing market.

Forty-five mobile companies produced modulars last year and will presumably continue doing so. They make up 25% of all the modular firms on the survey list.

However, their modular production was proportionately higher than that of the modularonly companies; it reached nearly 10,000 units, or almost 40% of 1970's total production.

And looking to the future, mobiles currently have the plant capacity to turn out some 400,000 mobile homes a year. Allowing for the fact that the typical modular unit is considerably larger than the typical mobile home, mobile companies have the capacity to produce perhaps a quarter of a million modular units a year.

Thus it would seem that on the basis of existing manufacturing capacity alone, mobile manufacturers will inevitably occupy the number one position in modular housing. Certainly they have already shown themselves highly interested in the field.

However, another portion of the survey raises some interesting questions in this regard.

Mobile firms may have dealer problems

Of the 45 mobile manufacturers covered in the survey, 31 sold all of their modular houses to builders, dealers, or consumers. Only 14 put any of their modulars into their own housing projects, and the volume was only a reported 1,204 units, out of a total of 9,826 produced by the mobile companies.

The inference here is that mobile manufacturers are tending toward the same marketing pattern for modulars as for mobiles, with the manufacturers acting as wholesalers and leaving the retailing up to their dealers. The manufacturers are heavily dependent on their dealers' ability not just to sell their units but to develop the parks they go into.

This sales pattern may not work well with modulars on any large scale. The advantage of a modular over a mobile is that while the modular may cost a little more, it is eligible for a mortgage rather than a loan, and so costs far. far less in monthly payments (H&H. April). But to realize that advantage, the modular must go into a conventional housing project, not a mobile home park. Few mobile park operators have any experience as developers. So the mobile manufacturer who wants to move strongly into the modular field will have to set up a whole new network with a whole

new type of developer-dealer. This will not be a quick or easy process. Also, the mobile manufacturers, with some exceptions, will have to upgrade their modular houses to a quality that buyers of permanent homes generally expect.

Single- vs. multifamily: the same pattern

You would expect the dealeroriented mobile companies to favor single-family modulars over multifamily modulars, and that's just what's happening. Only 10 mobile firms produced any multifamily units at all. The overall score was more than 18,400 singles to about 1,400 multifamily units. Furthermore, just two companies accounted for almost all of that multifamily count: Guerdon, with approximately 500 such units, and National Homes. with 700.

Obviously, the other mobile manufacturers, having produced only about 200 units, are playing with prototypes rather than actually moving into production on any serious scale.

This figures. Multifamily modulars must be sold to experienced developers, and few of the mobile manufacturers have developed close ties with such developers. The alternative-that the mobile companies develop their own multifamily modular projects-is even more remote: only three companies, National, Swift, and USCO Corp. are both multifamily-modular producers and developers of their own projects.

(It should also be noted that National Homes is a mobile producer only by virtue of having bought mobile companies. The original firm was, of course,

of the pioneers in modular housing.)

Modular-only firms: a confused picture

The non-mobile ranks of modular producers in the survey include 138 companies, and they vary enormously in size. There are 47 of them in the large category-plants with 50 -000 or more sq. ft.; 54 in the medium-sized category-plants with 25,000 to 50,000 sq. ft.; and 35 in the under-25,000 sq. ft. group. (Three companies could not be classified.)

Even this does not convey the real range of size covered by these firms. Many of the smallest-down to 10,000 sq. ft. of plant space-are almost what could be called backvard operations which can be set up with minimal capital investment. At the other extreme is Behring Corp., which has started production in a 350,000 sq. ft. plant, representing not only millions of dollars in investment but a totally different type of operation and marketing program.

Obviously, no single set of ground rules can 'cover such a range. Further, it's too early to tell whether the big, the small, or the in-between operation has the best chance of survival. No major modular producers have bitten the dust yet; many small ones have, but the reason is more likely to have been poor management. than failure of a concept.

Nevertheless, some tentative and interesting conclusions can be drawn from the survey's figures.

The modular-only manufacturers are much more heavily in the developing business than their mobile counterparts. Only a prefab producer, and also one | half of them-68 firms-sell

all of their production to other builders. The other half—70 firms—use or plan to use at least part of their production in their own projects; and of these, 15 firms put all of their output into their own projects. Like the mobile companies, modular-only firms favor the single-family detached unit. More than two-thirds of their production went into such units —not as high a ratio as for the mobile companies (about 80%), but still surprisingly high.

One thing this suggests is that many of the modular-only companies are challenging the modular-producing mobile firms, and will inevitably end up fighting for many of the same builder-dealers.

However, the market for small single-family houses built outside of projects, as are most of the modulars, is limited. If modular producers continue concentrating on it to the present degree, it could become saturated quite soon. Modular producers would then have to concentrate on their own developments, work more closely with other big developers, or turn to multifamily production.

Multifamily: small but promising

Less than 7,000 multifamily units were turned out by modular producers in 1970—only 25% of total modular output. Considering the fact that many experts foresee modular housing's greatest promise to be in the multifamily field, this would seem a disappointingly low volume.

But there are mitigating circumstances:

Multifamily modulars are comparatively new; single-family modulars, in the form of

sectionals, have been in production for several years.

Multifamily modulars create more complex design engineering problems because they are joined to other units and are usually two-story. Single-family units are usually made up of two halves, and almost always are one-story.

Multifamily modulars can be marketed only to developers, while single-family units can be sold to a wide variety of builders and/or buyers.

Multifamily modulars have so far been built chiefly as government subsidy housing. And while this field has expanded enormously, many potential manufacturers are loath to invest several million dollars in a plant for a field so fraught with red tape and uncertainties about funding.

But the picture is changing. There are signs that more nonsubsidy multifamily housing will go the modular route. And among the big new plants just going into production, many notably Levitt, Fruehauf, HMI, and Westinghouse—will join other large, already-producing companies like Stirling Homex and Modular Housing Systems in building nothing but multifamily modulars.

The question of who will manufacture the multifamily modulars seems to be answered, for the immediate future, at least. In 1970, the survey shows, only 17% of the mobile companies' modular output was in multifamily; for modular-only companies, the figure was 30%. Further, as previously noted, two mobile manufacturers accounted for almost all of that group's output of multifamily housing.

So it's reasonable to say that for the next two or three years at least, 1) modular-only

companies will account for most of the multifamily modular production, and 2) new plants just going on stream will raise multifamily's share of total modular production by a marked amount.

Plant area: best measure of potential

In a modular factory of a given size, only so many units can be manufactured per year. Thus the survey figures on plant area for each modular company provide a yardstick for the company's potential. Set against production figures, the area figures also suggest how efficiently the plant is operating.

The rule-of-thumb formula is one complete housing unit per year for each 100 sq. ft. of plant area operating on one shift per day.

Of course this is not exact. A plant producing small singlefamily modulars may be able to exceed this figure by as much as 50% or more, while complex multifamily units might cut it by 25% or more. But it is close enough for average projections.

Thus a 50,000-sq.-ft. plant can produce 500 units a year, a 200,000-sq.-ft. plant 2,000 units a year, and so on.

As noted on the opening page of this article, there is in theory at least more than 15 million sq. ft. of plant area available for modular production right now. This could, according to the formula, provide 150,000 modular units a year, and more if second and third shifts were used.

But about 6 million sq. ft. of this space is in mobile company plants which are used for both mobiles and modulars, and it's impossible to know in ex-

actly what proportion they are produced.

The modular-only companies are more easily pinned down. Their present plant area totals just over 9 million sq. ft. According to the formula, they are thus capable of producing 90,000 units per year on one shift; they are actually producing 15,700 units, so there is considerable room for growth without increasing the existing plants.

But many of these companies do plan to expand in the immediate future—by about 2.2 million sq. ft. So another 22,000 or so units per year will soon be possible.

The 1971 estimates: probably optimistic

Not all firms were willing to estimate this year's output. But taking the figures of those that did, and adding the 1970 production of those that didn't, 1971 shapes up as an 80,000unit year.

This is possible but not likely; for example, some companies which didn't start producing until this year estimated their annual output at the plant's maximum production. Plants don't start up that fast. Further, companies—especially publicly-held companies, as are 72 of the firms covered in the survey—like to be very, very optimistic in their public utterances.

A better guess—and it's only a guess—is that in 1971, modular production might, as it did in 1970, double. That would make 1971 a 50,000-unit-plus year.

> -MAXWELL C. HUNTOON JR. JEFFREY A. SMITH

At a time when planning commissions and the general public are looking askance at any building project that strips an area of its natural amenities . . .

Here's a shopping complex that mirrors its environment

The locale is Bucks County, Pa. (map, overleaf), whose history antedates the Revolutionary War. And the sales appeal of Peddler's Village stems from its eye appeal—the close resemblance of its shops to the area's Colonial houses and farm buildings. A few of the buildings are new, but most have been remodeled from dilapidated, abandoned structures (site plan, also on overleaf).

Peddler's Village, started on a modest scale (two shops) in 1962 by builder/developer Earl Jamison, is about 60% completed. Much of the \$3- to \$4-million annual business done by the 39 shops is in repeat trade from residents living within 20 to 60 miles. But a good share comes from thousands of tourists who are drawn by word-of-mouth advertising.



Newly-built "house" (left) actually is a series of three shops selling such diverse items as furs, lamps, and women's wear. As shown in this photo, landscaping is of prime importance throughout Peddler's Village. (Shops are numbers 33-35 on site plan.)



New building (foreground, *left*) incorporates architectural style of older buildings in background. Stores in this section sell leather goods, rugs, and electronic equipment. (Shops are numbers 11-12 and 13-15 on site plan.)

Remodeled buildings (below) make up the major portion of the shopping community. Long, continuous structure in center, formerly a two-story chicken house, now contains stores selling items ranging from antiques to shoes. (Shops are numbers 13-15 and 21-27 on site plan.)







Former chicken house—now an antique shop—shows the authentic architectural detailing used throughout the shopping center, i.e., multi-light bow windows, carriage lamps, carved decorative moldings, stable-type doors. (Shops are numbers 28-30 on site plan.)



How to ease the front-money load on a townhouse recreation project



I t's the townhouses that cause the problems. Consider this:

The developer of a single-family detached vacation project has long since learned how to ease the front-money strain: he sets up a lot sales program which starts cash flowing early and allows him to pay much of his development costs out of quick earnings. The houses in the project are financed by construction loans, and the developer's only front-money needs are controlling the land and doing such development work as is necessary to assure that lot sales will go well.

Now consider this:

Townhouses can make great sense for a vacation project for reasons both ecological and economic. Their cluster nature can leave as much as 85% of the site in its natural state—an essential feature in recreation areas whose governments are becoming increasingly hard-nosed about environment. Buyers too are becoming increasingly environment-conscious and they also appreciate the maintenance-free aspects of townhouse living. Finally, townhouses are cheaper to build, hence to buy, because of their common walls, short road and utility runs per unit, and less extensive excavations.

But you can't sell a townhouse lot to a buyer and have him build when he pleases; all the townhouses in a group have to be built at once. And if the lot sales program doesn't work, the project will have to be done as a conventional townhouse community, and front-money will become a real problem.

So how do you set up a lot-sales program for townhouses?

Tom Cullen, president of Haystack Corp., faced just that problem last year in planning a 1,200-acre recreation facility in southern Vermont. Plans included a championship golf course, a major ski facility with hotel, swimming pools, tennis courts, riding stables, and 1,100 year-round vacation townhouses. All of these are big-ticket front-money items.

Cullen could have gone the routine townhouse route: put up about 40 units, furnish a few as models, sell them during the next six months to a year, then build the next batch when the Vermont weather allowed.

But that route would have demanded about \$2 million in front money, Cullen estimates. Here's where the money would have gone:

Land, \$750,000; getting-started money (sales expenses, office equipment, early salaries, etc.), \$250,000; an 18-hole championship golf course, \$500,000; 40 townhouses, \$500,000.

Cullen couldn't raise that much money. So the conventional townhouse route would have meant splitting the deal with a joint-venture partner. Cullen didn't want that.

Instead, Cullen devised an ingenious plan that let him get his project underway with just \$1 million in front money: \$750,000 for land and \$250,000 for gettingstarted money.

The plan: sell the lots first, then pre-sell townhouses

Positive cash flow began immediately, and allowed Cullen to start building roads, sewers, and recreational facilities, including the golf course, out of cash flow.

In detail, the lot-sales program allows Cullen to offer a buyer two options: (1) to build his townhouse, according to a construction timetable, or (2) to forego building and hold the lot as an investment. And Cullen estimates that by adding the investment possibility, he has doubled his early sales.

Here's how the two options work:

For those who want to build: Each townhouse village—consisting of five, 10, sometimes 20 clusters with up to 88 townhouses —is assigned a specific construction date. Thus, families must select their lots with those dates in mind.

Each village is to be constructed one cluster at a time. When building time arrives for cluster #1, the lot owners in that cluster will select their models, pay their money, and sign their contracts. At that point, construction of cluster #1 begins. The process is then repeated for clusters #2, #3, and so on.

Selecting a townhouse model is relatively simple because more than one model may be inserted into whatever site in a townhouse cluster the buyer has picked. Further, even after a cluster's plans are on paper, a buyer may change his mind, pluck out his original townhouse selection and substitute another. (For a detailed explanation, see diagram on page 67).

If a lot owner decides not to build when his time arrives on the timetable, he will be taken out of his cluster and placed in a comparable location in a cluster with a later construction date, either in the same village or in another village.

(The land sales contract he signs says in effect: "If you are not ready to build when Haystack Corporation is ready to build, you hereby agree to give up your lot and select another.")

Even though lot prices may have risen since his original purchase, he will pay no premium for his new lot. A lot-owning family ready to build will be substituted in the first cluster.

For those who want to hold a lot as an investment: The selection of investment lots for the long term is confined to the higher-numbered clusters within a village where townhouse construction in the immediate future is less likely. (Cullen sees no



Ski-area section of Haystack (above) revolves around the proposed hotels in lower center of the plan. Ski trails are at the top of the plan, and sites for condominium townhouses are at right. Relative location of this and other section of Haystack are shown in the small drawing on the facing page.

Country-club section (*right*) is built around an 18-hole golf course. The area includes both single-family homesites and townhouse clusters.

Typical townhouse village (below) is an enlargement of the bottom portion of the plan shown at right. These units are built on a slope overlooking two holes of the golf course. At left of center is a neighborhood recreation center with pool and tennis courts.





problem for any village that ends up with fewer clusters than planned. "The rest of the land in that village will remain in its natural state and will only enhance the property that much more," he says.) Investors may also buy a lot in an area slated for construction in mid-1973, for example, and then sell the lot in, say, early 1973 to someone who wants to build.

How does anyone market a complex deal like that?

Cullen just naturally capitalizes on the program's flexibility: sales personnel stress that a buyer may build now, or in a year or two when his financial situation may be better. They also point out that a family might do well to buy a lot for investment purposes only. ("When the grass initially starts to grow on that golf course," Cullen predicts, "lot values will go up in price.")

Yet it's the total environment of the recreation project that really turns the lookers into buyers, according to Cullen. Hardly anyone is concerned with lot size, he says, nor are they concerned about their neighbors. The big question: what recreational benefits will they get, if they buy.

"Apparently," says Cullen, "the customers are prepared to buy the concept now and settle for housing later."

Nonetheless, to reach the point where Haystack's salesmen are standing on the site, chatting with potential buyers requires a tight, well-administered sales effort. Cullen and his sales staff operate this way:

Each week, 50,000 invitations to dinner parties and at-home demonstrations are mailed to people in Connecticut and Massachusetts. Roughly 100 couples—or families—accept.

At the parties and in the home, the salesmen explain the Haystack concept, and also qualify the families—often with a candid "Can you afford this?"

Those families that seem to qualify are invited to the Vermont site for a free weekend. But with that invitation goes this admonition: "We expect you to say yes or no to the proposal once you've seen the property." (Cullen admits, however, that some families end the weekend visit with a: "Gotta think it over.") Those who accept the invitation are given a contract and asked to show it to their lawyer *before* they go to Vermont.

Invitees are put up at a local motel near the site, and are greeted on Friday and Saturday night by a Haystack employee who answers their questions about nearby churches and local movie attractions, and sees that they are comfortably settled in their rooms.

At the site the next day, the families are introduced to a salesman. He sells the project's concept steadily—and comfortably—as he guides the family through maps of the surrounding locality and of the project itself, indicating the location of townhouse clusters and the adjoining recreational facilities.

(Cullen has a salesmen's schedule that rewards the best man. The top salesman gets the day's first prospect, the No. 2 salesman gets the second, etc. Result: the best salesman see the most prospects, and all salesmen in the lower ranks fight to move up.)

Once the orientation ends, the salesman and the family drive out to the project and spend hours looking at sites. They then return to the office to thrash out any lingering questions, and hopefully, reach a yes-or-no decision.

Since construction entails a lot of headaches he doesn't enjoy, Cullen has turned his back on that side of the project and is subbing the work to an independent but

Five years ago, lanky Tom Cullen (now 40; married, one child) was searching for a way out of the New York City rat race; he'd been smothering in J.C. Pennev's realestate department. He spotted 600 acres of land for sale near his vacation home in Wilmington, Vt., rallied friends to buy the property (called Chimney Hill), fled his city job, and with his associates launched a general contracting business, erecting single-family houses and using the cash flow to support the land-development activities.

"We lost our shirts," Cullen recalls today.

Four years and 120 houses later, Cullen proposed his next land purchase to his associates: 1,200 acres and a ski facility called Haystack, adjoining Chimney Hill. The property was a logical development now that Chimney Hill was completed, Cullen argued. He held that Haystack's current management was inexperienced, undercapitalized, and therefore approachable.

Cullen's associates declined, whereupon, Cullen formed Haystack Corporation and undertook the deal himself. He purchased an equity interest in the 1,200-acre development and got an option agreement from the principal stockholder to acquire another substantial equity position later. Today Cullen has a contractual arrangement that gives him control over Haystack's property and its ski facility. Flexibility is the key to Haystack's townhouse cluster illustrated on the facing page and at right. Without such flexibility, buyers would be forced to buy one style of townhouse within an already pre-determined cluster. With flexibility—interchangeability, actually —buyers are able to select among several models that will fit in a townhouse cluster.





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Realization

BEFORE

AFTER

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The drawings at right show how Haystack's townhouse interchangeability works. Three townhouses (those shaded gray) in the top drawing are replaced in the cluster by the shaded units in the bottom drawing, maintaining the cluster's harmonious design. Desmond Muirhead Inc. designed the townhouses and also did the golf course and the master plan.



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closely supervised builder. In return, Cullen expects the builder to build Haystack ski lodges and some speculation townhouses "at a lower than normal price." And he plans to ride herd on the builder, protecting Haystack buyers from escalation clauses in building contracts, shoddy material, missed delivery dates, etc. Says Cullen, "The builder won't get his final payment until the customer has signed a statement declaring he's satisfied with his townhouse."

This attitude toward the builder is entirely practical, Cullen says. "Sooner or later our customers are going to blame us for everything that goes wrong with the construction. If they're unhappy, we'll get the grief."

And the grief will include unhappy townhouse owners who won't spend as much money on skiing, golfing, and horseback riding as happy townhouse owners.

Pre-selling can also raise front money for a hotel

Concurrent with the development of Haystack's recreation-townhouse project, Cullen plans also to build a 100-room condominium hotel* (p. 69) at Haystack via a unique-and consequently untested-investment vehicle. It will enable Cullen to 1) get the building erected at no cost to his company, 2) operate the hotel, 3) and share in the profits. The investment is aimed at high-tax-bracketed individuals who need tax shelters. Investors buy a room in a condominium hotel, lease it back to an operating company to run it. Depreciation write-offs go to the investors. Profits are shared by investors and the operating company.

In brief, the plan-which had to be

cleared by the Securities & Exchange Commission—is as follows:

Haystack Hotel Association will sell 100 hotel rooms for roughly \$18,000 to \$20,000 apiece via a prospectus to investors in Vermont, Connecticut, and Massachusetts. (The Hotel Association will dissolve once the task is completed.)

As an investor buys a room (cash or mortgage), he signs away his right to use that room for 20 years via a lease-back agreement with Hotel Management Corporation, the Haystack arm that will operate the hotel. (It is this giving up of *total* use of the room that sets this plan apart from all others, says the Securities & Exchange official who worked on the prospectus with Cullen's lawyer.)

The investor also agrees to buy his share of the hotel's land from Haystack Corp. (3.78 acres; \$94,500), paying for it out of income over the 20-year lease.

Development Management Corporation, a third Haystack company, will supervise the development of the hotel, receiving a \$100,000 fee from the proceeds of the condominium offering.

Haystack Hotel Association will dissolve once the investors are all on board and Haystack Condominium Hotel Association, a Vermont non-profit membership association, will come into existence as a repository for investor funds. The investors' association will be run by three directors elected from the ranks. (Cullen and two other Haystack officers have already purchased rooms, plan to guide the selection of association leaders.) The association's directors alone have the right to retain or distribute the investors' profits.

While Cullen reports that surveys show the annual occupancy rate for resort hotels in the Northeast averages 48.5%, he prefers to base his first-year profitability projections on a lower rate: 30%. At that rate, a Haystack hotel room would generate an average \$5,200 a year (\$47 per occupied day) in gross sales. Annual expenses per room would total \$4,210. And the annual profit per room would be \$990.

The agreement on how the hotel's profits will be split states: On each \$3,000 per-room profit each year, the investor will receive 75% and the operating company 25%. All profits per room above \$3,000 are split 50-50.

Each investor, however, is guaranteed the first \$750 in profits as minimum annual rent to him for five years. (If the investor gets only \$600, say, in the first year, the following year he must receive \$750 plus \$150 due him from the year earlier.) If the investor has not received \$3,750 (\$750 x 5 years) by the end of the fifth year, the agreement between the investors and the operating company is automatically terminated. At that point, the investors are free to hire another operating company, use the facilities for themselves (giving up the hotel business) or turn the hotel into a private club.

Whether or not profits are produced, each investor's annual expenses—apart from his mortgage payments—are as follows: \$48 for water and sewer assessments; \$96 for road and ground maintenance; and an estimated \$200 for realestate taxes. And when profits do exist, the investor must give 10% of that money to pay his share of the land purchase.**

The investment in the hotel ought to interest individuals in the above 50% tax bracket, Cullen maintains, because of the depreciation write-off each investor can claim on his income taxes. Cullen states that the first year's depreciation on a \$20,000 room will total \$3,000. It will, of course, decline in subsequent years.

^{*}Two 60-room hotels are also contemplated once this building is completed.

^{**}If the investors ever choose not to run the building as a public hotel, they must then pay Haystack annually for the land.



50 FT

Haystack Hotel complex is planned to eventually include: three hotels (100room luxury, 60-room first-class, and 60-room economy); convention facilities; and a commercial center where stores will offer recreation-related items. The luxury hotel, shown in the black-andwhite drawing in the plan at left, is presently being sold as a condominium to investors at \$18,000 to \$21,000 per room. The other hotels will also be sold as condominium investments once the luxury hotel's rooms have all been purchased. Drawings below show the probable design of the luxury hotel with its floor plan.

PILLER ILLA

A new way to plan yields a new kind of house –and ideas unlimited

Even though this is a test house, many of its planning ideas and products can be used right now. Two examples: a step-saving storage wall for groceries and a multi-purpose children's room. Others ideas like a cool-to-the-touch range and a dishwasher for pots and pans, can be filed away for the future.

New ideas are only a part of the story. Equally important is the design approach used by Westinghouse's Urban Development Coordinating Committee in planning Electra 71 as a product showcase. The house was developed as a series of centers (rather than rooms) based on functional requirements—shelter, hygiene, communication, maintenance, leisure activity, food, and textile care. Each center was planned independently, studied as to needs for service systems such as water, air, and lighting, then further divided into subcenters for grooming, sleeping, etc. Outdoor areas for leisure and storage were added, and the final interrelated design was drawn up by Ferendino/ Grafton/Pancoast. For more details about the house, see the next five pages. For product information, circle 275 on the Reader Service Card, p. 101.





Aerial view shows driveway through porte cochere at main entrance of 2,700-sq.-ft. Electra 71. Built by Coral Ridge Properties, a Westinghouse subsidiary, it is next to a golf course in Coral Srpings, the builder's 10,500-acre project near Ft. Lauderdale, Fla.






Indoor leisure center: an open area at the heart of the house

Designed for group activities—family or entertaining—the interior leisure center *(left side, photo, left, and 10 in plan)* takes up half of the high-ceilinged mid-area of Electra 71. It stretches the length of the house and opens to the rear patio.

Built-ins play an important role in all areas of the home. Here, a 22'-long storage wall (part of which shows at lower left in photo) has shelves and cabinets for TV, radio, stereo, books, magazines, and games.

Lighting arrangements are subtle. For example, lights are built into the top and bottom of the storage wall; spotlights slide along tracks high on the wall near the entrance; and built-in spotlights are in the skywell (over the seating area) that drops down to bring in daylight or moonlight.

Actually, the only prominent fixture is the chandelier in the formal dining area which, with the food preparation center and family eating area, is seen in the right half of the photo. Here, there is additional indirect lighting—this time built into tops of food preparation units.

The formal eating area is screened from the interior leisure center by a circular free-standing stud wall. Just 6'8" high, it gives diners a sense of privacy, but leaves the area open enough for serving from the buffet side of the food preparation center (described in detail on page 72).

Near the area shown are the main entrance and lounge (1 and 2 on plan). The entrance includes a bench, mirror wall, mail drop cabinet, and TV monitoring camera. The lounge has couches built in on three sides, a fireplace on the fourth.

Outdoor leisure center: pools, patios, and a barbecue

An extension of the indoor leisure center, the screened outdoor area (photo left) is planned for sport, dining, or just relaxing.

For sport, there's a triple-purpose pool (20 on plan): a large J-shaped section (foreground) with a 6'8"-wide lap-swimming channel on the long leg, a shallow wading area across the bottom and up the short leg, and, set-off in the center, a small whirlpool bath and fountain. A new wave detector in the large pool area sounds an alarm if anything—or anyone—falls in. A cabana/bath, behind the tiled barbecue counter (right, rear in photo), serves the swimmers.

For dining, the terrace (far right) is served by the barbecue counter. A new and compact water cooler that purifies by reverse osmosis (see page 75) hangs on the barbecue counter wall.

For relaxing, there's a sunken area with built-in benches between pool and patio.

The outdoor leisure center is heated by overhead infra-red lamps, protected from wind and rain by overhangs and projecting walls, and lighted by spots and low landscaping lamps. Out of the picture at left is the textile center window.

Food preparation center: open plan for three separate units

They are a dinner unit (photos, right), a quick-meal unit (below, right), and a storage wall (below). All three make up the food preparation center (12 on plan, p. 70) in the heart of the house. Together, they form a step-saving work center in the shape of a broken U (plan, below).

The dinner unit serves the formal dining area. The quick-meal unit serves the informal eating area and the patio beyond. And the storage wall, which opens into the garage, serves the other two units, as well as the family eating area.

The dinner and quick-meal units, each 12' long and 8' high, are prebuilt and selfcontained. Even refrigerators and freezers are concealed—on both sides—by standard cabinet doors that close against rubber gaskets.

The white Micarta-clad doors have colorcoded touch latches: orange for serving items, blue for refrigerated space, lavender for frozen storage, pink for miscellaneous food storage, and green for cleanup.

The slightly curved tops of the units are



Storage wall: groceries roll through, trash slides back out

The storage wall (plan above) is a highly adaptable planning idea that eliminates a pair of tiring household chores; carrying heavy shopping bags or lugging sacks of trash.

In the garage, groceries are unloaded from the car into a market cart. Then they are rolled through the lockable sliding doors of a small repair shop (16 on plan) at the rear of the garage, and on into the back of the storage wall (top photo, right), which has shelved-doors that swing open into the kitchen (bottom photo).

On the kitchen side of the storage wall, the cart is unloaded and pushed back to the shop or garage. Heavy bottles, six-packs, and canned goods go into door racks and adjacent cabinets. Cereals and baked goods are put into cabinets near the family eating area. And bulky frozen goods are stored in the large freezer which is vented out the back to the shop.

Sacks of compacted trash are dropped into a chute, which slides them through the storage wall to a plastic can in the shop. When the can is full, it can be wheeled out to the curb for pickup. removable and contain all the wiring as well as indirect lighting. Removable kick plates facilitate servicing, and set-in appliances like microwave ovens can be lifted out for service. So can communications equipment, which is concealed by bright yellow plastic panels that unscrew and lift off.

The dinner and quick-meal units are designed to be shipped on a truck to the site, ready to hook up to plumbing and electrical connections in the floor. They are prototypes for future units that could be used in a similar three-part plan or manufactured with different combinations of elements for use singly or in tandem.

Lighting in this section of Electra 71 is controlled by sensitivity switches that work like magic: a close wave of the hand turns lights on or off. These switches are at the ends of the units, behind piano-hinged panels that close off the food preparation center from the interior leisure center.

The entire food preparation center, a product of the Westinghouse research labs, was shown in Houston early this year during the NAHB convention. From there, the units were shipped to Coral Springs for installation in Electra 71.

Although it contains some futuristic products, the food preparation center is not merely a product of the labs. The design has been tested for several years in the home of a Westinghouse industrial designer. His plan, similar to this one, has undergone many revisions—all of which have contributed to the workability and efficiency of this complete center.









Dinner unit: buffet serving on one side, cooking on the other

From the dining side (photo, left) the unit dispenses all the items needed for setting a table or serving food in the formal dining area or the nearby interior leisure center. On the cooking side (photo, below) it is a complete kitchen.

The dining side features a pass-through with infra-red lamps above shelves to keep food hot, a pull-out hot shelf with plugs for a coffee pot or bun warmer, a roll-out bar cart, a refrigerator and freezer (for cold drinks, hors d'oeuvres, and ice), and storage for glasses, dishes, and silverware (kept in aerated carry-to-the-table plastic trays).

The cooking side features a prototype dishwasher for pots and pans and an experimental range. The smooth-surfaced cooktop works on the magnetic principle: molecules in a metal pan are activated to high speed so they cook food while leaving the surface cool. Other features: a large experimental fiberglass sink, a chopping board that slides over the sink, roll-up doors to a spice center, a complete mixing center, and a microwave, self-cleaning oven.





Quick-meal unit: two-sided cooking—plus a command post

This is more than just a tightly designed short-order cooking unit. For one thing, it can be used from both the kitchen (photo,. left) and the family eating area (right). For another, it controls the household communications and security systems.

All cabinets—as well as the refrigerator, freezer, and prototype dishwasher—open to both sides of the unit. So children can make their lunches—and stow away dishes without tracking up the kitchen.

Other food center features are 1) a soda dispenser (next to the small sink), 2) pushbuttons to control water temperature and volume, 3) a storage cabinet and retractable cords for small appliances, 4) and eye-level, microwave oven for speedy cooking *(left center in small photo)*, and 5) a retractable vent (shown closed above coffee pot in large photo and in use near the housewife's head in small photo).

A rather formidable-looking control board (*left in large photo*) operates the security and communications systems.

An oblong screen (top, left) and speaker flash and sound an alarm if fire, smoke, or an intruder is detected; there's a panic but-



ton to police and doctor; and main doors can be locked from here.

The communications system is all-inclusive: in addition to the usual clock, intercom, telephone, and tape recorder, there's a memory bank for 500 telephone numbers, controls and speaker for AM/FM radio, a light to indicate recorded messages, and temperature and humidity controls.

The circular TV set, that swivels 360°, is equipped to bring in closed circuits from the community and other intercom locations inside and outside the house as well as network channels.

Below the communications center in a flip-down desk, are files and calculator.





Children's center: a playroom flanked by sleeping nooks

The nooks, at opposite ends of the playroom (*photo, above*) can be closed off with sliding, cork-paneled doors that double as pin-up surfaces for art work.

Within the nooks, all storage is built across the 8' end walls. There's a closet with built-in drawers and a mirror-topped chest, set into a mirrored recess and lighted from above. Doors next to the nooks (7 on plan) lead from the children's center into the family-activity areas. Sleeping nooks are carpeted.

The only furniture in the 9'x18' playroom is an 11' counter. At one end of the counter is a sink for cleaning things like paint brushes. And running its length is a plug-in raceway for tools, trains, or toys.



The play area, also a hobby and study area, contains a complete communications center with a TV set, a video tape recorder for replaying shows, and a TV camera that can be used to monitor the playroom or to make films. There's also a keyboard teaching machine (here a mockup) that could be hooked into future closed-circuit programs from local schools.

A crow's nest play area, flanked by a ladder for entering and a fireman's pole for exits, cantilevers over two small baths *(doors on left wall, photo above).* One bath has a sink and tiled shower, the other a sink and toilet. The entire play area is paved with easy-care cork tile.

Lighting provisions are more than generous. Spotlights on tracks run across the inner walls of the sleeping nooks and above the sliding doors on the playroom side. There's also concealed lighting behind a cornice that runs the full length of the Micarta-finished work counter.

During the day, light comes in through a window in each sleeping nook, through the high window opposite the crow's nest, and directly onto the counter through low sliding windows.



Utility center in one garage wall (17 on plan) has standard heat pumps, condenser, air cleaner, and power controls. Servicing is easy. Closets keep in heat and noise, are vented to outside. Meter is outdoors. Cost-cutting ideas: air-cooling the condenser, reheating with hot refrigerant gas. System keeps temperature constant, despite 10° difference between rooms, keeps humidity within 2%, uses air at 2,200 cfm.



Adult center: starting with the bed, it's all built in

The focal point of the adult sleeping area (5 in plan) is the large platform bed.

This bed platform (photo, left) has everything: beneath it are night lights; in the sides and one end are drawers for pillows and blankets; at the head are tilt-up pillow rests; on top is a mechanism, operated by a foot pedal, that raises the bed for changing linen (photo, below); and at either side are wings with retractable consoles. These contain twin communications centers, like the one in the kitchen, with clocks, door locks, light switches, intercom, etc. Over the bed is a prototype air filter that emits a gentle stream of clean, cool air.

On one wall of the sleeping area are three double closets with built-in drawers, shelves, and door racks. The study (4 in plan) has a long work desk with drawers below and shelves above. And in the master bath is a long counter with deep drawers and a flip-up makeup table, plus a lockable closet.

Sliding doors lead to a patio; folding doors close off the study; and the whole center becomes a separate wing of the house.





Compact textile center (14 on plan) features a space-saving laundry unit (41" wide, 61½" high, 23¾" deep). This prototype unit includes a washer, a dryer, storage, and control panel (lights indicate cycles). Other features: ironing-board closet, storage for soiled and clean clothes, lift-top sink in work counter, plugs for iron and sewing machine, and a sliding window that opens into exterior leisure center.

Water-treatment center: new purifying and heating systems

City water is first cleansed of its impurities, then heated—or chilled—in the water treatment center (19 in plan).

The home water purification system (photo and drawing, right), to be on the market within months, handles 200 to 500 gals. a day. It works on a reverse-osmosis principle. In osmosis, a natural process, a diluted fluid is absorbed through a membrane into a concentrated fluid.

Here, the concentrated fluid becomes a diluted fluid. Specifically, impure—concentrated—water is fed through the membrane under high pressure, and thus sheds the impurities and becomes potable water. Salts, mineral particles, bacteria, viruses, and 90% of solids are removed and flushed away. Once the water is clean, it is heated by a circulating system that keeps 80 gals. of hot water constantly at the ready, with no waiting for the water to warm up.

A smaller wall-hung unit handles five gals. a day. Already on the market, it is shown on the wall of the barbecue (23 on plan) in the exterior leisure center. It also chills water, using steel plates instead of a compressor, hence is a very compact two or three cu. ft.





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GENERAL CE ELECTRIC

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 107,558 advertising inquiries from its reader service cards and received a 32% return involving 34,015 inquiries.

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

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

			13.03.15		Sales	Actions			
Industry Classification	Literature Requested by Respondents	Literature Received by Respondents	Specified Product	Recom- mended Product	Approved Product	Purchased Product	Still Investigat- ing Product	Total Number	Actions as % of Literature Received
Builders & Contractors	13,839	11,755	992	1,401	1,184	1,445	3,929	8,951	76.1%
Architects & Designers	7,503	6,610	1,006	1,061	716	248	1,861	4,892	74.0%
Commercial/Industrial Government/Other	7,070	6,026	419	684	434	319	1,923	3,779	62.7%
Realty	1,567	1,392	103	160	144	88	562	1,057	75.9%
Subcontractors	1,098	930	79	126	92	133	307	737	79.2%
Consulting Engineers	1,275	1,121	74	127	64	66	330	661	59.0%
Financial	760	687	44	76	33	42	243	438	63.8%
Distributors: Wholesale	425	370	18	37	25	34	135	249	67.3%
Dealers: Retail	478	395	37	37	40	47	120	281	71.1%
TOTAL	34,015	29,286	2,772	3,709	2,732	2,422	9,410	21,045	71.9%

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American Door Distributors, Inc., Needham, Mass.

Artesia Door Co., Artesia, Calif. Crown Door Corp., Tampa, Fla. General Plywood Corp., Louisville, Ky. Glen-Mar Door Mfg. Co., Phoenix, Ariz. Lifetime Doors, Inc., Livonia, Mich., Denmark, S.C., Hearne, Tex., and Easton, Pa.

Mohawk Flush Doors, Inc., Northumberland, Pa. and South Bend, Ind. Morgan Co., Oshkosh, Wis. Pease Co., Hamilton, Ohio Premium Forest Products, Ltd., Scarborough, Ontario, Canada Walled Lake Door Co., Richmond, Ind., Stanley, Va., Tupelo, Miss. and Cameron, Tex. Young Door Co., Plymouth, Ind. and Sunbury, Penn.



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PRODUCTS



Newest development in smooth-surfaced cooktops: the modular look

The three cooking surfaces above modules are easier to replace, less look very much alike: each is divided by metal strips into four rectangular modules that conceal electric heating elements.

And they are all made of the same material: Cer-Vit, a glass ceramic first introduced by Owens-Illinois in 1966, which was also used on earlier cooktops in large sheets (H&H, Apr. '69). These new smaller

expensive, and more readily available.

Cer-Vit's main advantage as a cooking surface is that it only transmits heat vertically so little is lost on the way to the food, and surrounding surfaces stay cool.

Cer-Vit can take temperatures up to 1,200°, so cooking time is similar to that on normal ranges.

And flat-bottomed pans of any material work equally well.

There's little danger of Cer-Vit's breaking under normal use: fourlb. cast iron pots dropped from more than 30" failed to damage pieces tested.

Surfaces are easy to wipe clean: tops are china-smooth and edges slant down to fit tightly against mounting strips.

Newest manufacturers in the smooth cooktop line are: Magic Chef (left) with "Counterchef", a range with self-cleaning oven; Tappan (center) with "Smooth-Top" unit that has two 1,200-W and two 1,600-W elements; and Modern Maid (right) with "Smoothie" cooktop on a double-oven range. CIRCLE 250, 251, of 252 on reader

SERVICE CARD





Three-part bath system

Smooth fiberglass walls add high style to the bathroom at left, while cutting installation time and costs. After bathtub unit is installed, conventional toilet (above) is connected to plumbing tree left exposed against masonry (or stud) wall, lavatory unit (above right) is hooked up, shroud for toilet is pushed into place (right), and lid is attached. Concept III units are 32" wide, fill 21/3 walls of a 5'x8' bath, come with different widths of vertical spacers and in popular colors. Elier, Pittsburgh, Pa. CIRCLE 253 ON READER SERVICE CARD





PRODUCTS





Urethane furniture rugged enough for outdoors

Neither rain nor snow nor wind as the saying goes—can damage these plastic furnishings.

Molded in a new one-step process that integrates a rigid urethane foam core with tough urethane skins, they are also given a urethane color coat.

Sandwich construction makes them strong, seamless skins can't peel or chip, colors won't fade, and urethane withstands temperature changes as well as moisture. Although light enough to move around easily, in or out of doors, they are weighted so that wind

gusts can't tip them over.

Coordinated one-piece designs include: egg-cup swivel chairs, hourglass stools, three-legged arm chairs, a 72" chaise shaped like a reclining man, and low or high tables with flower-petal or turbine-shaped bases. Clear or frosted glass tops are 36", 42", or 48" in diameter. Nine soft colors available.

Rubicast process, here used with Uniroyal urethane, is under testing in England by ICI for use structurally. Furniture is by Vaungarde, Owosso, Mich.

CIRCLE 254 ON READER SERVICE CARD









Fiberglass pipe: strength plus flexibility

The new piping in the stack at left, as strong as metal piping, is designed for use in water distribution systems, fire lines, or sewer force mains. It handles 600 lbs. per sq. in. continuously.

Made of continuous glass fibers, encased in epoxy resin and wound around pvc liners, "Permastran" is very flexible, as demonstrated by the man above. This eliminates breaks after normal settlement or during earth movements. And it is so light in weight—20' lengths of 4" pipe weigh only 20 lbs.—that labor and handling costs are reduced.

It is also corrosion proof and thermal resistant. It comes in 2", 4", 6", and 8" sizes, and its large internal diameters provide a high flow capacity. Bell-shaped ends provide a tight fit. "Ring-Tite" fitting (above, right) is for 6" non-metallic water pipe. Estimated possible savings up to \$500 for 1,000 ft. Johns-Manville, New York City.

circle 255 on reader service card

To make it on the docks you've gotta be tough.

Tough enough to stand alone against the elements. Tough enough to bear up under almost any weight. Tough enough to be stepped on by 2000 people a day. Grid Pattern Permaply® is that tough. Or it wouldn't be on

the Governors Island ferry docks. And it's been there for more than 3 years. So think how long it could last on a patio, a balcony or beside a pool.

Grid Pattern Permaply combines the strength of plywood with a resin-fiber surface that withstands wear and tear.

The embossed grid pattern makes it skid-resistant. It needs no painting or finishing and is easily handled with regular carpentry tools. It comes in standard panels of $48" \times 96$, special sizes to $60" \times 120$, and in thicknesses from 5/16" to 3/4".

Grid Pattern Permaply is tough all right. Tough enough to last where other materials won't. Let's face it. Once you've

made it on the docks, anything else has gotta be easy.



PRODUCTS/LIGHTING



Architectural lighting system cuts installation and maintenance costs

This versatile line of architectural lighting is designed to reduce installation and maintenance costs and provide an attractive hidden light source. Units are pre-wired and can be installed in wet, dry, or suspended ceilings. They are easy to get at from above or below, without tools, through a snap-andlock device.

Shown above are several styles of lighting for use in commercial, public, or residential buildings. Various types of downlights range from 75 to 300 watt fixtures and can be recessed, semi-recessed, surface-mounted, hanging, or wallmounted. Single screw provides 5/8" to 2" vertical adjustment in standard position and 23/8" to 33/4" in reverse. Spring control provides universal horizontal adjustment. Berns Air King, Chicago.

CIRCLE 201 ON READER SERVICE CARD







Easy-to-install recessed lighting system is set into unfinished ceiling with adjustable hanger bars (above left). Then the ceiling is finished up to the opening, the reflector-trim is attached to the socket holder (left), the unit is pushed up into the opening, and is clipped in place. Several designs of "Trimlites," including louver, cone, pinhole, and eyeball are available in satin aluminum, matte black, satin gold, satin brass, walnut, and white. Progress, Philadelphia, Pa. CIRCLE 202 ON READER SERVICE CARD





Mini-sized recessed lights are 43/4" dia., use 120-volt wiring and 40W S-11 lamps. Six trims are available to fit into a 6"-deep recessed housing. The trims (above), in the "Little Lights" series include a coil-type baffle, pinhole, wallwash, drop-opal, crystal, or eyeball. Halo, Rosemont, Ill.

CIRCLE 203 ON READER SERVICE CARD



Indoor-outdoor luminaires are available in a variety of mountings: wall brackets, mullion arms in 4" and 10" lengths, flush or pendant ceiling designs, and single or multiple poletop assemblies. "Cylinoid" luminaires are made of heavygauge cast and extruded aluminum. They take incandescent, mercury vapor, metal additive, or tungsten halogen lights. The 7"x7" fixtures range from 1' to almost 4' in length and come with various caps (left) including prisms and diffusers. Drawing shows how lamp can be angled within the fixture to control beam size, shape, cut-off, and angle. Stonco, Kenilworth, N.J. CIRCLE 204 ON READER SERVICE CARD

Discover new nailing efficiency: Bostitch 16d Nailer.



The new Bostitch 16d Nailer combines rugged construction with excellent balance in a comfortable tool which speeds framing and other heavy-duty jobs. It is also very easy to use for toe-nailing.



Steep pitch (27°) of magazine makes tool compact in relation to nail load while putting weight at point of impact. Nailer is therefore maneuverable in tight spots and extremely well-balanced, and maximum nailing power is achieved.

Compact sticks of 16d nails load rapidly, let you drive up to 5 times faster than hand nailing without tapes or holders to discard. New 16d Nailer also nails 8d, 10d and 12d nails with no adjustment.

You can hang this machine from overhead, making it easier to operate in the shop. The new 16d Nailer can be fired only when both the manual trigger and the contact trip are activated. Tool can be used for rapid-fire nailing as well as for precise single-shot nailing without adjusting.

Discover the nailing efficiency and handling balance of the new Bostitch 16d Nailer and the complete line of Bostitch tools for the construction industries. Talk to the man with the fastening facts – your Bostitch man. Or write Bostitch, 246 Briggs Drive, East Greenwich, R.I. 02818.



PRODUCTS/LIGHTING



frame treated with a rust resistant finish for outdoor use. The lantern, which is also available in with intricate wrought iron scrollwork in a flat black finish. Its panels

Spanish-style lantern has a steel are textured amber glass. The fixture measures 321/2" long and 71/2" wide. The lantern shown here is part of the "Spanish Series," and can also a chain drop version, is decorated be used indoors. American Lantern, Newport, Ark.

CIRCLE 205 ON READER SERVICE CARD



Laminated fir lighting standards come in natural color or to be stained. The two styles-straight with a slightly tapered top, as shown here, or curved-take single or double arms. All are designed for connection to underground light-

ing systems, and two styles have wiring on the outside with a box about 10" above the ground. Standards are available from 8' to 30', with McPhilben luminaires. Weyerhaeuser, Tacoma, Wash. CIRCLE 206 ON READER SERVICE CARD





Acrylic luminaires have cast aluminum flared posts or brackets in ebony, white, or bronze finish. Available in either incandescent or mercury vapor models, the luminaires come in four shapes: ellipsoid (left), in 26" and 34" widths, rounded cubes (above), in 15" width, cylinders (above right), in 15" diameter, and spheres (right), in 18" and 24" diameters. All are mounted on posts by a special fitting that grips from the inside. They are also available on brackets-either cylindrical or pointed-in various lengths. Hadco, Littlestown, Pa. CIRCLE 207 ON READER SERVICE CARD





"Thanks to the Yellow Pages we're the Add-A-House specialists."

"In this day and age more people seem to add to their homes rather than build another. And that's our specialty, so we stress it in our Yellow Pages ad," says George Hanson, owner of Broadway-Perryville Lumber Company, Rockford, Ill. "There are so many facets to our business that a Yellow Pages display ad gives us an opportunity to tell the public what we do besides sell lumber. We're listed under everything from building materials to salt, from garage builders to home improvement, and that's only a few. The



trend today is getting away from contracting and more into these other areas. This makes the Yellow Pages invaluable to us."

Let the Yellow Pages do your talking. People will listen.



way to build business.



"Women's Lib Begins At Home" . our theme for 1971 which millions of women will read and heed. Because In-Sink-Erator disposers ensure freedom from garbage problems, they're powerful sales persuaders. Eight models to choose from; over 800 Service Centers nationwide. With 50 units or more you get a free maintenance

program that saves a sinkful of service costs.

IN-SINK-ERATOR DIVISION EMERSON ELECTRIC CO. 4700 - 21st STREET, RACINE, WIS. 53406



CIRCLE 132 ON READER SERVICE CARD



PRODUCTS/FLOORING



No-wax flooring has clear wear surface to give it a translucent look and keep it looking shiny, with only occasional damp mopping. Home-tested for two years, the new surfacing shows no scratches, still looks new, has outlasted vinyl coatings. Solarian no-wax line of

sheet flooring comes 6' wide, can be installed on or below grade. "Country Mill" tile-like pattern comes in white, green, or gold. Even black heel marks wipe off stippled Mirabond wear layer. Armstrong, Lancaster, Pa.

CIRCLE 223 ON READER SERVICE CARD



Olefin carpeting has a high-low surface texture in a geometric pattern. Made of Herculon polypropylene fibers, for exceptional soil and stain resistance, that are densely tufted for long wear, it retails at budget prices of about \$6.95 per sq. yd. This "Keypoint" pattern comes in ten colors including ones called "Cornsilk," "Firebird," and "Aquarius," and "Moonstone," "Roman Gold," and "Autumntone." Bigelow-Sanford, New York. CIRCLE 224 ON READER SERVICE CARD



Wood-grain vinyl flooring has deeply embossed lines to give it the look of real wood parquetry. "Parquet Wood" comes in three oak shades —golden, natural, and deep—and is protected by a continuous layer of nonporous clear vinyl. The Luran line of 6'-wide sheet flooring has an interlayer of vinyl foam cushioning and an asbestos felt backing, called "Aquaflex", suitable for use on any floor or subfloor. GAF, New York City.

CIRCLE 225 ON READER SERVICE CARD

There's a Tyler No-Hub DW V System in there. Tenants just never hear it.

Tyler's \bigcirc No-Hub® pipe and fittings make one of the quietest DWV systems you can install in a home or apartment.

The mass and weight of permanent cast iron is one reason.

Another is No-Hub's Neoprene Sleeve. The coupling forms an isolation break at every joint. For example, it absorbs all the vibration of a garbage disposal at the first joint and makes it impossible for noise to travel through the system.

Tyler's No-Hub DWV System is permanent, too. Cast iron has an in-use history of over 100 years. Neoprene is impervious to oils, fats, greases, chemicals. It resists aging and it's fireproof.

With Tyler No-Hub in a cast iron DWV system, the sound of plumbing will never interfere with tenant comfort. For information, write us at P. O. Box 2027, Tyler, Texas 75701.

If it goes into a DWV system, Tyler makes it.



Tyler Pipe Subsidiary of Tyler Corporation



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CIRCLE 111 ON READER SERVICE CARD



Write today for your copy of our free booklet. See for yourself why Am-Finn Sauna could be the difference you've been looking for. Distributor Inquiries Invited. Am-Finn Sauna, Inc., Haddon Ave. & Line St., Camden, N.J. 08103





PRODUCTS/DOORS



Decorative screen doors feature fulllength grilles in four designs. These top-of-the-line models—all aluminum—come in a gold anodized finish or in black, white, or bronze paint electrostatically applied for long wear. Also available: seven





standard screen doors, plus a sliding screen door that comes in several widths and adjusts from 77¾" to 81%" high to fit most openings. Empire Metal Products, Gardena, Calif.

CIRCLE 219 ON READER SERVICE CARD

Steel bifolds have molded-in threedimensional panels for a sculptured look. This pattern, called "Elegante", has slightly curved corners. Other designs, not shown, have larger raised panels with or without louvers. Surface can be painted, antiqued, or decorated in a variety of ways. Doors are suspended so that they can't jump the track and will glide smoothly and quietly. Leigh Products, Coopersville, Mich. CIRCLE 220 ON READER SERVICE CARD



Folding wood panels, 4" wide, are connected by full-length vinyl hinges in contrasting or matching colors. Doors stack tightly to one side, are mounted on gold anodized aluminum tracks, feature magnetic or privacy latches. Custom sizes come in wood veneers or white. Standard units come in wood-grain or white vinyl finish. Hough, Janesville, Wisc.

CIRCLE 221 ON READER SERVICE CARD



Double entrance doors carry a fiveyear guarantee. They have polystyrene foam insulating cores faced with steel panels so that they cannot warp, shrink, or swell. They are pre-hung and feature an adjustable sill and continuous magnetic weatherstripping that works like a refrigerator door. Various sidelights and toplights available. Acorn, Detroit, Mich.

CIRCLE 222 ON READER SERVICE CARD

The big boys go with the leader

That's why big builder Dick Goodwin chose U/R fiberglass baths for his 1,650 Ramblewood dwellings.

"Universal-Rundle's fiberglass baths are in keeping with the beauty and total convenience of our Ramblewood Village* townhouses and apartments. Also, they reflect our commitment to use only the finest materials in these distinctive apartments." Richard C. Goodwin, President, Goodwin Homes, Inc., Mount Laurel, N.J. 58 other big builders agree! Our fabulous

fiberglass baths-color-matched to the complete U/R bathroom fixture lineare made for total convenience. Yours!

U/R baths cut installation time and costs: Just set the seamless one-piece fiberglass tub/shower unit into framing, nail the flanges and it's ready for plumbing hook-up. No tiles, no grouting, no callbacks: U/R fiberglass baths are leakproof, lightweight, chip-resistant. Shipped promptly anywhere-and packed for damage-free delivery on site.

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Go with U/R! Phone Bob Sieger collect at headquarters (412) 658-6631. He'll



have your nearest U/R dealer get in touch-with full information, promotional sales tools, etc. Or write Universal-Rundle Corporation, New Castle, Pa. 16103.

Wholesaler: Danco, Inc., Cherry Hill, N. J. *Architect: Stephen M. Goldner & Assocs., Phila., Pa. Mechanical Contractor: P & H Company, Inc., Somers Point, N. J.



CIRCLE 113 ON READER SERVICE CARD



Prefab fireplaces-complete with chimneys

The fireplace-chimney unit shown above was erected on the site in just eight minutes. And before delivery, only six manhours of labor were involved. Result: reduced costs. Clay flues are set in steel reinforcing bar cages that are set in aluminum forms with simulated brick or slump stone imprints. Quick-hardening cement produces faster setting. Finished units are delivered to the site and lifted by

crane into place. Chimneys range from 12' to 28' high, fireboxes are 24" high and 36" wide. Sixty of the units can be installed in a day, so Western Monolithic Concrete Products of Long Beach, Calif. produced 10,000 units last year as compared to 1,200 units produced in 1967, the first year of operation. Reinforcing bars are produced by Bethlehem Steel, Los Angeles. CIRCLE 240 ON READER SERVICE CARD





Heat circulating fireplace, now forty years old, is still ideal for producing the additional heat necessary in vacation homes, basements, etc. It draws in cool air, warms it in the double-walled steel chamber (drawing, above), and returns it to the room. The Heatilator Mark C is a complete unit, designed for smoke-free operation. Vega, Mt. Pleasant, Iowa.

CIRCLE 239 ON READER SERVICE CARD

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Experienced Producer of Home More Than 100 Homes a Year Levitt and Sons is seeking a dynamic executive for regional

Levitt and Sons is seeking a dynamic executive for regional management, with extensive experience in the planning, organization, and control of all activities necessary to insure a sucessful regional operation.

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Your contacts will be with top corporate and municipal executives as well as with regional personnel.

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Only one van gives you all these better ideas. Ford Econoline



Engine clear forward

The engine is moved forward in Ford's clear-deck van—all the way out of the cargo area. Clear floor space behind driver's seat measures over 8½ ft. in Econoline Van... over 10 ft. in the Supervan.





Easy, out-front servicing.

Simply raise the convenient outside hood and your routine service points are right at hand: radiator, oil level, battery, windshield washer reservoir, voltage regulator, wiper motor, brake master cylinder. Better ideas make servicing fast, easy.

Shorter outside, easier to park.

Overall length of Econoline Vans is significantly shorter than other makes. This means



Sales leader for 10 straight years.

easier parking and better maneuverability in city delivery operations-time saved on every trip.

Body s wider ap So builtmore at

Wider at top for built-ins Body sides are more vertical, wider apart at top than other vans. So built-in units fit better and leave more aisle. Modular units, designed to fit and work together allow you to custom design almost any interior you need. Job packages, such as insulated florist's van, are also available.

Strong, smooth-riding Twin-I-Beam

The independent front suspension that has revolutionized truck rid-



ing qualities. Two forged steel I-beam axles give it strength . . . big coil springs give it a smoother ride.

Biggest payload of all

Husky construction and high capacity axles al-

ridony conorradition and	
low you to carry a heav- ier load than any other van. Maximum payload of 4320 lbs. is largest in industry.	M E- E- E-

lodel	Max. Payload	Max. GVW
-300	4320 lbs.	8300 lbs.
-200	1800 lbs.	5400 lbs.
-100	1120 lbs.	4500 lbs.
		-

Driver's "walk-thru" to rear

Econoline's forward engine position clears the deck

for the driver, too. He can easily step from his seat into the rear load area and exit through side or rear doors.

See your Ford Dealer and see all the better ideas in America's best-selling van— Ford Econoline.





LITERATURE

Air distribution. A comprehensive catalog dealing with a complete line of air diffusion products has been prepared for architects, engineers, and contractors. The catalog has been redesigned for quick and easy reference: it has tabbed sections, an alphabetical index, a product number index, and a manufacturer's representative index with map. Along with updated information on existing products, some new products have been introduced. Titus, Waterloo, Iowa.

CIRCLE 300 ON READER SERVICE CARD

Interior paneling. Two new lines of interior wood paneling are offered by Masonite, Chicago, and are described and shown in room settings in the following full-color brochures:

Feature series. The paneling in this line comes in 9 warm colors that are rugged and require only simple maintenance. The colors are: Spanish oak, Ceylon teak, Seville oak, Brazilian rosewood, English walnut, shale white, marbletone, surfstone, and fern green.

CIRCLE 301 ON READER SERVICE CARD Tradition series. This line meets class III flame spread ratings and has significant acoustical qualities. It, too, comes in 9 shades: rustic walnut, teak, cinnamon cherry, alpine oak, honey-tone cherry, Cape Cod maple, sable walnut, glacier walnut, tawny walnut, and sage pecan.

CIRCLE 302 ON READER SERVICE CARD

Washroom fixtures. Specifications, dimensional drawings, and data on optional features are part of a catalog that covers a full line of washroom appliances and accessories. Among the products discussed are several types of drinking fountains, showers, and washfountains for one or more people. Bradley Washfountain, Menomonee Falls, Wisc. CIRCLE 303 ON READER SERVICE CARD

Tile catalog. The 1971 catalog from this manufacturer contains product descriptions, recommended applications, architectural specifications, installation methods, and fire and sound ratings for the full line of glazed tile, quarry tile, and ceramic mosaics. All shapes, sizes, and colors of tile and trims are shown with easy reference for architects, builders, and designers. American Olean, Lansdale, Pa.

CIRCLE 304 ON READER SERVICE CARD

Home accessories and appliances. A full range of products for added convenience and safety in all sorts of homes and apartments is described in this manufacturer's 1971 catalog. Included are the new "Musicom" home stereo system, radio and intercom systems, range hoods and fans, door chimes, heaters and vents, alarm systems, apartment house lobby systems, central cleaning systems, and a built-in food center. NuTone, Cincinnati, Ohio. CIRCLE 305 ON READER SERVICE CARD

Redwood paving. An exciting method of patio paving with redwood end blocks is introduced in this new brochure. No mortar or other adhesive is necessary when the blocks are laid dry in a bed of fine-crushed rock. Redwood heartwood is resistant to insect and decay attack, and weathers well. This construction is particularly suited for around pool areas as the spaces between blocks facilitate drainage. California Redwood Assn., San Francisco.

CIRCLE 306 ON READER SERVICE CARD

Colored pavement. An acrylic color finish system for tennis courts, playgrounds, sidewalks, and other special areas is described in a fullcolor brochure. The system, known as Plexipave, has a smooth surface and maintains color integrity for 5 to 8 years. According to the manufacturer, it also prevents cracking, spalling, and lifting on sound surfaces. California Products, Cambridge, Mass.

CIRCLE 307 ON READER SERVICE CARD

Water-reducing admixtures. A series of 4 articles dealing with admixture purposes and applications also includes useful information on the types of admixtures generally used in construction and how to select the most effective type for a particular job. Master Builders, Cleveland, Ohio.

CIRCLE 308 ON READER SERVICE CARD

Air distribution. A comprehensive catalog, divided into six color-coded sections, shows air distribution equipment such as registers, grilles and diffusers, warm-air heating and cooling uses and applications, updated engineering data. The sections-each with charts, photographs, and specification diagrams -cover perimeter heating and air conditioning units, residential heating and air conditioning units in steel and aluminum, commercial units, gravity heating units, and accessory items. Another section gives technical information in charts and text. Hart & Cooley, Holland, Mich.

CIRCLE 309 ON READER SERVICE CARD

Plywood uses. Three informative brochures dealing with construction uses of plywood are offered by the American Plywood Assn., Tacoma, Wash.

Plywood properties and grades. Ordering and specifying plywood can be easier with the aid of this reference guide. Definitions, complete explanations of the terms used for specification of plywood under the U.S. Products Standard are given. Charts and current information make up this an in-depth

discussion of plywood's strength, rigidity, fasteners, acoustical properties, vapor transmission, thermal conductivity, impact resistance, dimensional stability, gas permeability, and chemical resistance.

CIRCLE 310 ON READER SERVICE CARD Plywood concrete forms is an updated and expanded study including a grade-use guide, suggested design pressures for vibrated concrete, and load span curves which provide span thickness recommendations. A special plywood designed specifically for use in concrete framework is also described.

CIRCLE 311 ON READER SERVICE CARD Plywood roof framing for transportable buildings is a report describing rigid tests used on plywoodlumber truss designs for pitched roof framing on sectionalized housing. 12 truss designs are discussed, with special emphasis on the 3 systems that proved most effective. CIRCLE 312 ON READER SERVICE CARD

Structural wood fasteners. Complete details on joist hangers, framing anchors, post and beam connectors, bridging, truss connectors, and other fasteners for wood construction are given in this catalog. Other information such as design values, dimensions, and packaging is clearly shown. The catalog and the charts it contains are designed for easy reference. Timber Engineering Co., Washington, D.C.

CIRCLE 313 ON READER SERVICE CARD

Backhoes. The 680 Series C line of loader backhoes is described in a new catalog which includes on-site photographs and travel speed tables. The backhoe has an 84-hp openchamber diesel engine with matching torque converter, heavy-duty synchromesh transmission and planetary rear axle. 9 buckets are available for the 161/2' backhoe. J.I. Case, Racine, Wis.

CIRCLE 314 ON READER SERVICE CARD

Gypsum soffit board. Designed for exterior use where there is no direct contact with the weather, the gypsum soffit board described in this new specification sheet is easily cut and scored instead of sawn and has a non-combustible 1/2" core. It can be finished with acrylic, oil base, or other exterior types of paint. It installs like regular gypsum wallboard and is ideal for soffits, carports, shopping and school malls. Georgia-Pacific, Portland, Ore.

CIRCLE 315 ON READER SERVICE CARD

Structural glazed tile. A technical literature package issued by this manufacturer of structural glazed facing tile consists of a 3-ring binder with inserts on wall comparison, coursing scales, nomenclature, color selection, fire ratings, and application. Drawings and photographs

illustrate. Also included is a brochure on a new building system that uses structural clay masonry units and epoxy mortar. \$1 per copy for handling and mailing. Arketex Ceramic Corp., Dept. нан, P.O. Box 347, Brazil, Ind. 47834.

Electric ovens. A new catalog, replete with tables, charts, and cutaway drawings helps in the selection of electric ovens for commercial installations. Nearly 70 models are shown-among them convection ovens, deck ovens, microwave ovens, convection oven ranges, standard one-pan range ovens, and broiler finishing ovens. Key features, such as production capacities and suggested time and temperature charts are included. General Electric, Chicago Heights, Ill.

CIRCLE 316 ON READER SERVICE CARD

Lawn and garden tractors. Six tractors ranging from 7 to 14 hp are described in a new brochure from International Harvester, Three models in the 10, 12, and 14 hp class offer hydrostatic drive for one lever control for starting, stopping, reversing, and infinite speed control. Over 60 attachments are available. Brochure also includes information on features, most-used attachments, and tractor specifications. Specify brodhure AD-30179-Y11 and address requests to Advertising Dept., (H&H), International Harvester, 401 North Michigan Avenue, Chicago, Ill. 60611.

Wedged building blocks. No mortar is required to hold together the concrete blocks described in this information brochure. Each block-there are 10 basic shapes—is wedged at all edges that contact other blocks. Schematic drawings and diagrams illustrate the product in use. Wedge Block, St. Louis, Mo.

CIRCLE 317 ON READER SERVICE CARD

Electric heat control systems. Low voltage controls and line voltage thermostats for electric heating are reviewed in a new bulletin, that discusses operations of thermostats, sequence controls, and time delay relays. Ample use is made of schematic diagrams and photographs. Controls Co. of America, Melrose Park, Ill.

CIRCLE 318 ON READER SERVICE CARD

Steel doors and frames. Featured in a new brochure is information about the manufacturer's complete line of steel doors, including foam cores, leather-like textures, galvanized doors, heavy-duty doors, fire doors, and specifications, door types, sizes, and widths. Also discussed is a frame line and 4-minute drywall frame with sure-fit corners. Drawings and specifications also. Amweld, Niles, Ohio.

CIRCLE 319 ON READER SERVICE CARD

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

Its saleability helped Bob Ahrens rent an 80-unit apartment complex in 5 weeksand 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.

Live better electri

Edison Electric Institute, 750 Third Avenue, New York, N.Y. 10017





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Sweet's Light Construction Catalog File where reference turns to preference



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Sweet's Div. of McGraw-Hill Information Systems Co. 330 West 42nd Street, New York, N.Y. 10036



"We find that as people are going through our models, they remark when they notice a brand name like Armstrong. It's reassuring to them."







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