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## Here's why more and more home buyers

## are sold on GOLD SEAL VINYLS

- easy to clean


GOLD SEAL VINYLFLOR gives you an almost seamless sweep of flooring. Shrugs off dirt and grime. Everything, from grease and jam to finger paints and crayon, cleans in a jiffy. Comes in 21 handsome, inlaid patterns. By-the-yard, $6^{\prime}$ wide. Install over suspended subfloors, wood or concrete. Standard gauge.

gold seal vinyltop is a versatile, easy-to-clean material for counters and cabinets, shelves and tabletops-even doors. (See it in every room shown here.) It's flexible, easy to cut and cove. VinylTop makes a perfect one-piece counter and splash board. 17 colors that match VinylFlor and VinylTile exactly. $30^{\prime \prime}, 36^{\prime \prime}$ or $42^{\prime \prime}$ wide,

- wear extra-Iong

gold seal vinyltile has all the virtues of VinylFlor and can go over ground-level concrete with or without radiant heat, as well as over suspended subfloors, wood or concrete. It's the only vinyl with colors as right for walls as they are for floors. 11 softly striated "Bermuda Hues"; 21 marbleized patterns ( $9^{\prime \prime} \times 9^{\prime \prime}$ ) Standard gauge.


GOLD SEAL VINYLBEST TILE can be laid over any floor with or without radiant heat-it even goes in the basement. Household soils clean easily. It is highly resistant to grease and resists alkaline moisture present in basements. In 17 of the clearest, truest colors ever. $9^{\prime \prime} \times 9^{\prime \prime}$ tile in $1 / 16^{\prime \prime}$ gauge and $1 / 8^{\prime \prime}$ gauge.

All these vinyls carry the GOLD SEAL guarantee of satisfaction-or your money back.
For home or business... you get the finest choice of all in...

INLAID LINOLEUM . RANCHTILE(®) LINOLEUM . VINYLFLOR • VINYLTOP LINOLEUM, VINYL, VINYLBEST, RUBBER, CORK AND ASPHALT TILES CONGOLEUM® AND CONGOWALL® ENAMEL-SURFACE FLOOR AND WALL COVERINGS


## The Bathroom SELLS the House




- If your business is building and selling homes, here is a fact worth considering: a home is easier to sell if it is framed and sheathed with Weyerhaeuser 4-Square Kiln-dried Lumber.

There are several reasons for this increased salability.

For example, Kiln-dried Framing is an important sales feature because the public has learned that seasoned lumber is strong . . . that it has dimensional stability . . . that it contributes to sound, reliable construction.

Kiln-dried Lumber Sheathing on a new home is a feature that helps close many sales. Lumber is strong . . . it holds nails firmly. Also, lumber sheathing permits the use of shingles, vertical siding, and other special coverings without furring strips.

These are a few of the reasons why lumber sheathing has been the accepted standard for generations . . . and is still a mark of high quality construction in homes, farm buildings and commercial structures.

The Weyerhaeuser 4-Square brand name, nationally advertised, is wellknown to the public . . . a mark of quality that helps builders close sales.

All lumber bearing the brand name Weyerhaeuser 4-Square is scientifically kiln-dried, precision-manufactured, properly graded and carefully loaded for shipment. It is available in a wide range of species and grades, in commons and clears. There are Weyerhaeuser 4-Square Lumber products, from dimension to moldings, to meet every need in light construction.


ST. PAUL 1 ,

## WEYERHAEUSER 4-SQUARE PRODUCTS AND SERVICES THAT HELP BUILDERS

PLYWOOD-The Weyerhaeuser 4-Square plywood line now includes beautiful new Knotty Cedar and Knotty Pine, as well as Douglas Fir plywood.
TREATED LUMBER - Pressuretreating with Wolman salts* extends the service life of lumber that is exposed to insects and decay. "t.m.reg.
SHINGLES-The Weyerhaeuser 4-Square Kolorite line includes top quality Western Red Cedar shingles, shakes, and aristocratic hand-split shakes . . . natural finish or stained in 16 colors by the exclusive Kolorite process.

SIDINGS - All the basic patterns, in many Western species, including style leaders such as bevel and bungalow, the new Rustic Red Cedar, and special vertical patterns.
PANELINGS-Standard patterns and special patterns, in a wide choice of species and grades . . plus the plywoods listed above. UPPERS - The Weyerhaeuser 4-Square line includes softwood floorings, moldings, stepping, finish items, etc., in Western species.
GLUED-UP LUMBER - Edgeglued lumber now includes sidings, stepping, and finish up
to $30^{\prime \prime}$ wide, in various Western species.

WEYERHAEUSER 4-SQUARE HOME BUILDING SERVICE Complete plans and material lists for 148 beautiful modern homes-all designed by experts, engineered by Weyerhaeuser.

WEYERHAEUSER 4-SQUARE FARM BUILDING SERVICE Blueprints, working drawings and material lists for 278 farm service buildings and equipment items, including 22 fresh, appealing farm homes . . . all illustrated in the big 4-Square Farm Building Portfolio.


## Sales Company

MINNESOTA

, first time, magnificent marble, with its lustrous beauty and vibrant color, is now available in lightweight, half-inch thinness for wall or floor covering.
Here are the facts:
MARKWA marble wall tile is a true quarried marble, produced exclusively by America's foremost marble producer and fabricator, the Vermont Marble Company.
MARKWA marble wall tile is half the thickness and half the weight of conventional marble slabs $-1 / 2$ inch thick, $7-1 / 2 \mathrm{lbs}$. per square foot. It is cut to three sizes: $8^{\prime \prime} \mathrm{x}$ $8^{\prime \prime}, 8^{\prime \prime} \times 12^{\prime \prime}$, and $12^{\prime \prime} \times 12^{\prime \prime}$. It is absolutely flat, uniform in size and thickness to a close tolerance.
Modular sizes ( $3 / 32^{\prime \prime}$ less each dimension) are also available at no extra cost. It is set by tile layers in exactly the same manner as clay tile, either with mortar or by adhesion.
MARKWA marble wall tile costs as little as $\$ 2.85$ per square foot set in the wall depending on variety of marble and type of installation. It is stocked in a wide variety and color range.
MARKWA marble wall tile is ideal for wall or floor, in bathroom, kitchen, living room or foyer, for countertops or fireplace facings, in residential or commercial buildings, for interior or exterior. It comes polished with cushion edges; matte finish available for floors.
SEE MARKWA NOW! Specify it for your next job.
More information and complete specification data are available by writing the Vermont Marble Company, Proctor, Vermont, or any of its tranch offices.

## MARBLEMARKWA WALLTILE

Produced exclusively by the Vermont Marble Company, Proctor, Vermont BRANCH OFFICES, BOSTON CHICAGO CLEVELAND DALLAS HOUSTON PHILADELPHIA LOS ANGELES NEW YORK SAN HOUSTON PHILADELPHIA LOS ANGELES NEW YORK SAN LIMITED, PETERBORO AND TORONTO, ONTARIO CONTINENTAL MARBLE COMPANY, LIMITED, VANCOUVER, B. C.

## NEW foniset secure- ALL SAFE

 safety-deposit box security for the home

Newest addition to the built-in trend is the KWIKSET SECURE-ALL residential wall safe. Builf to fit conveniently in any standard $4^{\prime \prime}$ wall, between $16^{\prime \prime \prime}$ studs, the KWIKSET SECURE-ALL SAFE offers builders an outstanding low-cost sales feature for protecting important papers and valuables egainst fire, water and theft. The KWIKSET SECURE-ALL SAFE is made from heavy gauge steel, with thick high-temperature thermal insulation on all sides. It locks securely with a fush pin tumbler locking mechanism and can be easily installed in closets, behind pictures or drapes.

For further information, write
KWIKSET SALES AND SERVICE CO.
Anaheim, Callfornia.

manufactured by

## Buyers are more "cat home" with



## INSIDE...

The traditional charm of MALT-A-MATIC wood window units side by side. There's convenience, too . . . sash is removed quickly for easier painting or cleaning. Lets your customer wash the outside, inside.


## MALTA wood windows



## ALL AROUND THE HOME...

Malta wood windows add value in quality, design and construction that catches the home buyer's eye. As a builder . . . you, too, can appreciate the greater value when you select Malta units. There's economy in construction and wide flexibility in home design. Use popular Malt-A-Matics, ideal for traditional architecture . . . MALT-A-VENTS, the multi-purpose wood window for stacking, grouping, for casement or awning type windows . . . or Malt-A-Glides, the horizontal sliding wood window for ribbon windows or large glass areas.

You'll save on installation costs because all Malta units are precision milled and feature easy-to-remove jamb liners to reduce the jamb width for variations in wall thickness.

Yes, use Malta in your next homes. Your buyers will be more "at home" when you choose and use Malta wood windows.

See your nearest Malta dealer or write for literature . . .

## HO OTHER FIXTURE <br> Price ..... GIVES YOU 73\% USEFUL LIGHT

 make on the job-there is a lot of satisfaction from that pleasant surprise of the owner when you turn on KIRLIN built-in lighting.

Your customers are getting adequate, diffused light from above. They are satisfied, and so are you, for the Kirlin installation method costs less! . . . The frame is always flush with ceiling even though the box is not level or flush.

NO LIGHTLEAKS


A Mounting bars C Junction box B Romex or RC wire D Heat-insulated E AF wire pigtails

## Why You Profit with Kirlin

 INSTALLATION COSTS ARE LESS REGULAR BUILDING WIRE RUNS DIRECT TO HEAT-INSULATED JUNCTION BOX NO CARPENTER WORK IS NEEDED$\star$ Made in all sizes-square or $\star$ Individually packed for ship-rectangular-and in fluorescent
$\star$ Alzak GlasSurfaced Aluminum reflectors ping

* Spread-type or concentrating - lens
$\star$ Hinged Rust-resisting Doors in $\star$ UL and IBEW tabels Die-cast Frames
in STOCK At LEADING WHOLESALERS EVERYWHERE LARGEST SELLING RECESSED LINE-MILLIONS IN USE EVERYWHERE The KIRIN CO. , \%igucix


PERMANENTLY BONDED DOUBLE-BALL JOINTS ON BELL AND SPIGOT "SNAP" TOGETHER FOR A PERMANENT, LEAK-PROOF SEAL!

Soon anyone will be able to make perfect Clay Pipe joints - easier and faster than ever before! Installing Wedge-Lock is simply a matter of lubricating the plastic joints with water, graphite solution, or Robinson's special adhesive sealant - and pushing them together. The "double-ball" type joint locks pipe in place $\ldots$ and is permanently root-proof and infiltration-proof.

This new pipe can be installed not only in regular house-to-sewer lines, but inside plastered walls and under basement floors. For inside-the-house installations, where "head" pressures are encountered, Robinson's special adhesive sealant is recommended. It softens the two jointing surfaces, welding them into a single, solid ring.
This new polyvinyl plastic joint, combined with never-wear-out vitrified clay, will form the perfect team . . . pipe that can be installed in seconds to last for generations!
A complete line of matching WedgeLock Fittings is available.

- T.M. Registration Applied For. Patents Pending

Just paint the bell joint with lubricant . . .

Paint the spigot joint


Push the pipe together . . . the joint is complete!


CLAY PRODUCT CO. ESTABUSHED 1856

AKRON 9, OHIO

[^0]
## What are you building? SPL' ' LEVEL? RANCH? CAPE C I)? Worthington air conditioning fits them all!




REMODELING A HOME WITH A WARMAIR FURNACE? Install a Worthington Add-On Unit, Happy result is filtered, comfort-conditioned air all year 'round. Existing ductwork is usually satisfactory. Choose air- or water-cooling. ing unit for every home. And every pocketbook. Write today for the whole story on how Worthington helps you sell homes. You'll see why Worthington air conditioning is called "the builder's line". Worthington Corporation, Air Conditioning and Refrigeration Division, Section A.5.44-H, Harrison, N. J.
A.5.44-H

## Worthington equipment is ideally suited

 for any of the Golden Dozen Homes.
## WORTHINGTON

## 为

Climate Engineers to Industry, Business and the Home

SHORT ON SPACE? Here's the answer to that problem-Worthington's new Packaged Condensing Unit. This compact, adaptable unit goes anywhere-closet, basement, attic, even the garage. Cooling coil easily fits into any warm-air heating system. All components come together in one package.


WATER SCARCE? Worthington's aircooled condensing unit needs no water at all! Hooks into any warm-air furnace, goes outdoors, in garage or breezeway. 2,3 , or 5 hp .



## Here's the seal that IDENTIFIES wood window quality

This little seal has a mighty meaning. Attached to a double-hung wood window unit, it identifies quality at a glance. It is the fabricator's certification that the unit meets the quality specifications of U. S. Commercial Standard 190-53, which means:

The unit is made of carefully selected wood free from defects, properly dried and preservative treated. It is effectively weatherstripped, and top and bottom sash are properly balanced for ease of operation.

Known quality like this benefits architect, builder and home owner alike. That's why it's worth while to look for the AWWI seal of approval. Get full information from your supplier or write Ponderosa Pine Woodwork, 105 West Monroe Street, Chicago 3, Illinois.


The use of this seal is not limited to members of Ponderosa Pine Woodwork. Any manufacturer or fabricator whose unit meets specifications can offer the quality seal under a licensing agreement.


Ponderosa
WOODWORK

# RV METALBESTOS 

companion product to new WV Metalbestos oval vent. Now a complefe venting line - correctly designed, thoroughly tested to provide a new standard in scientifically correct venting.

## NEW EASE OF INSTALLATION

Rota-Lock Coupler joins pipe easily without forcing locks permanently, yet is easy to unlock. Not a friction or snap lock - no cement or mastic, no screws needed.

## NEW SAFETY

fire-resistant steel outer pipe; permanently tight joints; improved double-wall, air-insulated design.

## NEW STRENGTH

rugged steel jacket protects inner pipe, resists damage in handling; won't crack, break or collapse.

## NEW FREEDOM OF DESIGN

a complete venting system backed by engineering knowledge to solve any installation problem. Requires about $15 \%$ less space than any other gas vent. Full line of pipe and fittings, $3^{\prime \prime}$ to $6^{\prime \prime}$ diameter.

RV Metalbestos is listed by Underwriters' Laboratories as a Type B vent for venting approved gas appliances. (Not for use with oil-burning appliances or gas-fired incinerators.)

## THE ROTA-LOCK COUPLER*

an exclusive METALBESTOS feature

- a slight turn and it locks - permanently
- another easy furn and it unlocka (saves fitting time during installation)


UNLOCKED tongue released PIPES EASILY COUPLED AND UNCOUPLED


## YAIE Residenital hardware

# Quality details help close sales 

...And nothing says "quality construction" faster than a Yale 5300 series cylindrical lockset on the front door of a home! These locks come in an extremely wide range of patterns, in three different metals. This enables you to give individuality to every home you build.
Customers know and want Yale locksets, because of their good looks, their functional engineering, their reputation for security. Their moderate cost enables you to standardize on these sales-promoting locksets.


Get the full story-send for free full color booklet on the 5300 series today. Yale \& Towne Manufacturing Co., Lock \& Hardware Div., Stamford, Conn.


Eight new escutcheons that combine with fournew knobs...two new entrance handles...two new lever handles: 1. Troy with Norfolk escutcheon. 2. Deauville lever handle. 3. Guilford lever handle, 4. Troy with Madison escutcheon. 6. Litchfierd with Savoy escutcheon. 6. Classic with Dallas escutcheon. 7. Nassau with Newport escutcheon. 3. Litchfield with Williamsburg escutcheon. 9. Nassau with Constellation escutcheon. 10. Litchfield knob. 11. Troy knob. 12. Classic knob. 13. Nassau knob. 14. Arington

## $\rightarrow$ min Richmond's Magic Circle Home



How do you cash in on the extra profits? By building this home with less site labor, overhead, capital-and NO inventory. If you're a qualified builder or dealer-a "gogetter" looking for a home with peak public acceptance, write us on your letterhead. We'll send information on Magic Circle and the complete, hard-hitting Richmond Line!
usually found only in much more expensive homes. Prospects flock to see and BUY this homes. Prospects flock to see and BUY this
home, for it has all the conventional features, yet sells for a LOW price!
Look! It's Richmond's Magic Circle Home, latest of the great Richmond Line which is now making thousands of dollars of additional profits for builder-dealers all over the country! Here's a complete package, with open-area planning and circular traffic flow around an island of storage space-features

## WRITE FOR RICHMOND'S CONFIDENTIAL BUILDING COSTS!

the complete, hard-hiting Richmond Line.

## NOW! LOW COST

 . - MADE POSSIBLE ONLY BY EXCLUSIVE GENERAL MOTORS ASSEMBLY LINE PRODUCTION
## New! Compact! GAS-FIRED CONDITIONAIRS

70,000 BTU INPUT... Designed for Quick, Easy Installation in Small Space Areas

The new Delco-Heat GBC70-H Gas-fired Conditionair requires a space only $21^{\prime \prime}$ wide by $23^{\prime \prime}$ deep for installation. Its companion model GBC70-HR, reverse flow unit for perimeter heating systems, requires installation space only $21^{\prime \prime}$ wide by $32^{\prime \prime}$ deep. Here are truly economical furnaces with low installation costs and low operating costs. The natural gas solenoid unit is completely factory-assembled for economical installation. These new GBC Gas-fired Conditionairs are designed for small space requirements in today's modern homes. With these new furnaces you have three big profit advantages . . . the finest in modern, advance-styled automatic heating . . . a name with immediate buyer acceptance
and low cost. These new Conditionairs are the latest additions to the expanding line of Delco-Heat gas-fired and oil-fired heating equipment.

## Quality-designed, Quality-producedto give you all these advanced heating features:

(1)MULTI-FIN HEAT EXCHANGER-Exclusive GM Delco design multi-fin heat exchanger quadruples the heating surface area . . . resulting in high rate of heat pickup and transfer for maximum economy and efficiency of operation in minimum of space.exclusive air control-Exclusive GM Delco design AIR CONTROL permits delivery of warm air to meet individual home requirements. Assures comfortable, even warmth throughout the home.easir accessible blower assembly-Mounted on a sliding panel, blower is easily accessible for cleaning and adjustment. Direct drive type, powered by a quiet operating, sturdy, lifetime-lubricated $1 / 6$ H.P. Delco Motor.
(4) stainless steel heat baffles-Exclusive stainless steel
heat baffles retard flow of hot gases, assuring maximum amount of heat to air stream for greater fuel economy. Less waste heat up chimney.
6) fully insulated-All panels insulated with aluminum foil-faced, fiberglas insulation. Retains heat within unit and keeps outer surfaces cool. are completely enclosed within the 20 gauge steel jacket.
(7) COMPLETELY ASSEMBLED-The natural gas solenoid unit shipped completely factory-assembled for economical installation.A.G.A. APPROVED-For use with natural, manufactured, mixed, or propane gases.

## HOME н Concon相 T $\square$  N G! !

## delco

 increase profits from easier-to-sell Delco qualityheated homes!The perfect heating buy for home builders is here! A product of the greatest advancement in furnace manufacturing in 20 years . . . the miracle General Motors Delco-Heat assembly lines . . . which complete a furnace every two minutes!

Now you have all three big profit advantages . . . the finest in modern automatic heating . . . a name with real sales power . . . and low cost. Delco advanced heating features give your home buyers the last word in comfort, cleanliness and
convenience. And, "built and backed by General Motors" means immediate buyer acceptance with pride and assurance. Delco's high production efficiency . . . exclusive assembly line methods . . . SAVES YOU UP TO $25 \%$ ON YOUR FURNACE COSTS!

In today's competitive home market ... when making a profit calls for selling more house for the money . . . you're way ahead with the low cost and high quality of Delco-Heat.

# CASH IN! Exclusive GM Delco-Heat "Assembly-Line Profit Program" 


|noustrys HIGHEST IMPACT PROMOTION HELPS YOU SELL MORE HOMES hone homes
 for builders

Another Delco first in '55 . . . the heating industry's most dynamic, complete advertising and promotion program. Plan now to tie in with the all-new Delco plan to help you sell more homes . . sell them easier... at more profit. This new Delco-Heat "Smash-Impact" Package Promotion sells your home prospects at the national level in Life and Better Homes and Gardens . . . in
your own local market . . . and in your own homes. Introduces exciting new promotion ideas for model home merchandising . . . new tie-in advertising.

Delco's "Assembly-Line Profit Program for Builders" explains how you can cash in by tying in . . . details the program, outlines what you can do, when, how, and shows you the sales tools you have to use!

## Pace-Setting HD-5G Tractor Shovel NOW BETTER 3 WAYS



From the time of its introduction seven years ago, the Allis-Chalmers HD-5G Tractor Shovel has been tops in popularity. Many thousands are daily proving their ability and versatility on all kinds of excavating, material handling and other jobs.

Now, design refinements make the HD-5G a three-way better value than ever before:

## 1. Has Bigger Rated Capacity

New bucket handles a big $11 / 4$-yd load - streamlined design now helps roll in large loads with less tractor effort. The back of the bucket has been brought forward and the sides extended to cut spillage, put more payload where it's wanted.

## 2. Helps the Operator Do More

Cleaner dumping with the new bucket saves the operator time and effort shaking out loads.

For added versatility, there is a two-position bucket available with both standard automatic return to digging position and op-erator-controlled tip-back. If the operator chooses to use the controlled tip-back, he can load the
 bucket, then tip it back approximately $25^{\circ}$ before raising, assuring maximum output under special conditions such as downhill loading or loading loose materials.

The HD-5G helps the operator do more in other ways, too - giving him full vision, fast and easy control, cleaner platform and more comfortable seat from
which to work, and more working time with truck wheels, support rollers and idlers that need greasing only once every 1,000 hours.

## 3. Works at Lower Cost

The HD-5G now works at even lower cost than ever before - not just because it does more, but because it has features that mean less maintenance, longer life. For instance, new type tubular bracing on the bucket booms provides added strength and support, keeps the bucket in line. The floor at the rear of the new bucket has been raised seven degrees to reduce wear on the bottom sheet. Heavy-duty truck wheels and idlers are avail-
 able for particularly tough working conditions. Onepiece, full-length main frame permits unit construction so that major assemblies can be removed without disturbing adjacent units, putting tractor back on the job in hours rather than days.
Ten Quick-Change Attachments
Add to HD-5G Versatility

| Bulldozer | Crane Hook | Tine Fork |
| :--- | :--- | :--- |
| Angledozer | Light Material Bucket | Rock Fork |
| Narrow Bucket | Trench Hoe | - also rear- |
| Rock Bucket | Lift Fork | mounted Ripper |

See your Allis-Chalmers dealer for more about these and other production-boosting features of the popular HD-5G Tractor Shovel.


# KENFLEX- the low-cost vinyl tile that can be installed on grade 

KenFlex is ideal for installation on gradeits initial cost is low... and it goes down faster, more economically, to trim your costs even more.
KenFlex advantages don't stop with keeping costs down. Look at the quality side of the KenFlex picture! You can give any smooth, firm interior surface an exclusive custom flooring with ThemeTile and Feature Strip. Prospects prefer this modern, "mine only" appeal... and they know that beautiful KenFlex-famous for its sparkling, longer-lasting colors-resists dirt, grease and hardest usage...stays fresh and attractive with only mild soap and water, an occasional no-rub waxing.
For full information, contact your local Kentile Flooring Contractor...or any of the offices listed below.

Colorful KENFLEX defies dirt, grease and wear... offers exclusive ThemeTile and Feature Strip for custom flooring in any home.


KENTILE, INC., 58 SECOND AVE., BROOKLYN 15, N. Y. - 35O FIFTH AVE., NEW YORK 1, N. Y. - 705 ARCHITECTS BLDG., 17 TH AND SANSOM STREETS, PHILADELPHIA 3, PA, - 1211 NBC BLDG., CLEVELAND 4. OHIO - 900 PEACHTREE ST. N. E., ATLANTA B, GEORGIA - 1016 CENTRAL ST., KANSAS CITY S, MISSOURI - 4532 SO, KOLIN AVE., CHICAGO 32, ILL. - 4501 SANTA FE AVE., LOS ANGELES 5B, CALIF,

Kentile, Inc. makers of
KENTILE*
KENCORK*
KENRUBBER*
KENFLEX*
KENFLOR*

## For Beauty and Lasting Satisfaction



1. ALUMINUM STORE FRONTS and door frames made with Kaiser Aluminum give lasting beauty, and maintenance problems are practically eliminated. Aluminum is ideal for colorful porcelain enamel finishes.

2. ALUMINUM AIR CONDITIONING and heating systems made with Kaiser Aluminum will not rust with moisture. Durable, easy to fabricate and install, economical. Aluminum's low emissivity assures minimum heat loss.

3. ALUMINUM AWNINGS made with Kaiser Aluminum add beauty to any building and keep interiors cooler by reflecting hot sun rays. Strong enough to withstand rough weather without damage. Need little upkeep.

4. ALUMINUM HARDWARE made with Kaiser Aluminum adds an extra touch of beauty. It's strong, and durable, won't ever streak with rust. For modernizing as well as for new building, specify aluminum for greater value!

## 


3. ALUMINUM PARTITIONS made with Kaiser Aluminum give a smart, modern appearance. Lightweight, easy to han-dle-thus, partitions can be changed overnight to create new divisions of space.

4. ALUMINUM GRID CEILINGS made with Kaiser Aluminum boast lasting good looks, long life without maintenance. Their bright, modern appearance helps attract customers, brightens a store's reputation.

THE beauty of aluminum-which pleases and attracts customers-is reason enough to use it widely in your commercial buildings.

But more than that, aluminum offers a combination of advantages that no other material can match. Among these advantages are light weight, strength, corrosion resistance, long life, economy.

As a basic producer of aluminum, we do not make any of the products shown here. Instead, our efforts are put behind the job of serving
manufacturers-to help improve their products and reduce costs.

Engineering assistance is available from our qualified aluminum engineers. Or for names of building products manufacturers who will gladly work with you, contact any Kaiser Aluminum office listed in your telephone directory. Kaiser Aluminum \& Chemical Sales, Inc. General Sales Office, Palmolive Building, Chicago 11, Illinois; Executive Office, Kaiser Building, Oakland 12, California.

# Koiser Aluminuma <br> setting the pace-in growth, quality and service 

[^1]

## . . . visible proof of a well-built home!

Steel doors mean a good house to home buyers. And Amweld means good construction especially to the "particular" buyer looking for lasting quality.
You can offer doors, frames and sliding closet units that will never stick, warp, split or chip at no extra cost. Installed, Amweld ${ }^{\circledR}$ Building Products actually cost less than hand-fitted types. On your next house, apartment, dormitory, motel or other building job, save money and give your customers the best specify Amweld.
The American Welding \& Manufacturing Co. 330 dietz road - WARREN, Ohio

"Steel Doors are a 'plus' in the houses we build" says this big builder.
Amweld Steel Flush Doors and Frames and Amweld Sliding Closet Units are a strong selling point with customers. Best of all, we have eliminated costly call-backs to fix sticking doors or other "time consuming" adjustments.

Send for "Cut Construction Costs" Folder. Complete information about Amweld Building Products-fully illustrated.

AMWELD



That's the number of times the famous $\mathrm{L} \cdot \mathrm{O} \cdot \mathrm{F}$ shield will be printed in 1955 advertising. And every time it appears, it builds the already-strong preference for top-quality $\mathrm{L} \cdot \mathrm{O} \cdot \mathrm{F}$ products. Take advantage of this preference by using the window glass that bears this famous label! Libbey Owens• Ford Glass Company, 608 Madison Ave., Toledo 3, Ohio.

## SEE WHY FOLDOOR

Operates Easier...Looks Better...Lasts Longer Than Any Other Fabric-Covered Folding Door


There is a difference in fabric-covered folding doors! Only Foldoor offers Multi-V construction which provides easier operation, smarter appearance, longer life.

In direct contrast to "accordion" type doors, Foldoor is constructed in continuous volutes. The fabric coverings are back to back. There are no "pockets" to trap large volumes of air which sets up resistance, retards ease of operation.

In addition, Foldoor's simplified construction has 61 per cent less hinge friction. Yet it provides

more working metal per foot of opening with less dead weight. What's more, the same 16 -gauge hinge is standard on all Foldoors regardless of size. Foldoor has the narrowest profile, too-a stack width of $51 / 2^{\prime \prime}$. Streamlined pantograph action lets it stack into just $11 / 2^{\prime \prime}$ per foot of opening.

And only Foldoor offers a track truly concealed, plus an attractive cornice when desired.

There's a big difference in fabric-covered folding doors. You get more with Foldoor everytime. So specify Foldoor.

For further information see: Sweet's Catalog; Foldoor installing distributors in every principal city; or Holcomb \& Hoke Mfg. Co., Inc., 1545 Van Buren St., Indianapolis 7, Indiana. IN CANADA: Foldoor of Canada, Montreal 26.

HOLCOMB \& HOKE FODOMR

## Revolutionary.... New.... TRADE-WIND

## VENTILATOR/LIGHT COMBINATION UNIT <br> Model 1701

for Bathrooms

## MOUNTS

FLUSH IN CEILING

## OFFERS UNUSUAL APPEAL TO HOME BUYERS

Another outstanding first from Trade-Wind! A combination bathroom ventilator and illuminator beautifully designed in a flush-type ceiling unit. Two 75 -watt bulbs provide brilliant illumination. And the time-tested Trade-Wind 100 CFM blower unit assures complete venti-lation-for both inside and outside baths-eliminating steam, lingering dampness and odors.

## Easiest to install...

Trade-Wind Model 1701 installs between joists and the single installation gives you both light and ventilation, thus cutting installation expense. The unit is pre-wired, further eliminating extra work in running asbestos leads. It can be wired to a single switch or 3 wires run to a double switch. The Trade-Wind Time-Delay Switch also can be used.

## The PRICE will surprise you!

Trade-Wind has priced the Model 1701 at a rock bottom figure, making this new light/ventilator combination an outstanding "buy" for every type of home.

## Trade Wind Ollarefane, Chro

7755 PARAMOUNT BLVD., DEPT. HH, RIVERA, CALIFORNIA

## Insulite Roof Deck cuts on this 2500

They cut exposed beam ceiling costs $19{ }^{\circ}$ per sq. ft. Arthur Pomponio, president (right) and Victor Marianni, supt., of M. Pomponio and Sons, Arlington, Va., were quick to recognize the growing appeal of exposed beam ceilings. Here's how Insulite's new 3 -in-1 product-roof deck, roof insulation and finished ceilinghelped them capitalize on this trend by offering exposed beam ceilings at less cost.

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Morton Adler (left) and Louis Kenin (right), principals of Kenad Construction Company, builders of Westhaven Park, a 350 -home sub-division. Each home has city gas and water, 100 amp electric service and offers a completely equipped kitchen, including a Kelvinator refrigerator. Kelvinator Laundry equipment is optional at extra cost.


Kelvinator Washer \& Dryer-Washers have 2 separate washing cycles with exclusive Shampoo Washing Action, X-Centric Agitation, Overflow Rinsing and Spin Drying. Dryers have Safe Temperatures, Safe Cylinder and Safety Door.

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Take the word of a man who knows all about the extra allure Kelvinator appliances add to new homes. Mr. Adler is president of Kenad Construction Company, builders of the new 350 -home Westhaven Park in Hialeah, Fla. Mr. Adler is offering a Kelvinator KP-110 Space-Saver Refrigerator in these new medium priced homes, with Kelvinator Laundry Equipment as an option. He reports that the public response is terrific. Judging from the success of Kenad Construction Company, here's sound advice for the progressive builder: "For more sales-appeal specify Kelvinator-the ap-

Kelvinator KP-110 Refrigerator, the model featured in Kenad Homes. This $101 / 2 \mathrm{cu}$. ft., automatic defrosting Kelvinator is only $28^{\prime \prime}$ wide, has roll-out shelf, door shelves, built-in cheese and butter chests, has a full-width freezer with a total frozen food capacity of 70 lbs . This and other Kelvinator models are available in white or 8 Decorator Colors; matching electric ranges are available.
pliances most people want most!" Write Dept. HH-6, Kelvinator Division, American Motors Corp., Detroit 32, Michigan, for complete information. There's no obligation.


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# Outlook for Housing Act changes 

# Closest fight in Congress will be over public housing. <br> Wherry Act, defense housing will lapse. S \& Ls will try <br> to cut Home Loan Bank Board away from HHFA 

The administration's housing amendments bill contains no major changes, no tremendous upheavals.

It would make minor modifications in the Housing Act of 1954 and extend key FHA programs that are expiring or running out of authorization. Chances are good that Congress will enact most of it into law.

There will be a few fights, however, notably over public housing (see p. 40). And Democrats, with an eye on the coming 1956 campaign, will be looking for ways to twist the bill into a Democratic law or make political capital out of Republican bungling in housing.
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Principally, HHFAdministrator Albert M. Cole is looking for enough gas to carry his basic activities through another fiscal year. The main items are a $\$ 4$-billion hike in FHA underwriting authority, $\$ 500$ million more capital grant authority for urban renewal, and $\$ 48$ million for planning of nonhousing public works. Other provisions would:
Extend FHA Title 1 repair loan program for five years, to July 1, 1960 .
Increase FHA maximum mortgage from $\$ 5$ to $\$ 12.5$ million for Sec. 207 rental and Sec. 213 co-op projects. The ceiling has been in effect since 1938. Construction costs have gone up some $150 \%$ since then. The change would relieve sponsors of the compliance by subterfuge of chopping big projects into segments.
Increase the mortgage limit from $\$ 5$ to $\$ 50$ million for FHA Sec. 220 urban renewal housing. Both this and the proposed new limits on 207 and 213 would apply to any one mortgage or total of outstanding commitments in the same housing market region.
Kill Title IX defense housing at once.
Kill FHA Title VIII, the Wherry Act, after June 30.
Eliminate cost certification for FHA Sec. 221 single-family homes. This is an obvious effort by the administration to give the lagging 221 program a shot in the arm. (Democrats may well attack both 220 and 221 as "deception devices," pointing out that not a single project under either section is yet under way.)
On FHA farm housing, end the $\$ 100$ million insurance authorization limit.
Eliminate a $\$ 2,500$ limit on FHA and VA improvement loans by federal savings and loan associations. The $\$ 2,500$ limit on repair loans not backed by the government would stand.

Orphan parentage. The Republican housing bill was actually introduced in Congress by two leading Democrats, Chairman Brent Spence of the House banking committee and Chairman John Sparkman of the Senate housing subcommittee. They noted their action was "by request"-legislative jargon which means they regard the measure as an orphan, will not feel obliged to defend it. Chances
are good, however, that neither party will seek a major showdown on housing this year. The real battle should come in 1956, with elections closer.

Here is what Capitol Hill housing experts foresee for this session:

1. Most of the administration's proposals will get through without hitting serious snags. Sen. Sparkman is just launching a Democratic investigation of housing; this will take the rest of the year and he will be in a better spot to offer suggestions afterwards. The House banking committee is also on the verge of starting an investigation of housing.
2. Congress may balk at extending FHA Title I repair loans five years. But a renewal of at least a year appears certain.
3. There will be some oratorical objections to giving FHA any increase in insurance authority for Secs. 203, 207 and 220, but no concerted attack. A few economizers like Sen. Harry Byrd (D, Va.) and Rep. Howard Smith ( $\mathrm{D}, \mathrm{Va}$.) are expected to sound off about the huge contingent government liability in FHA.
4. Byrd, spurred by the cave-in of New York's Coliseum redevelopment project at midmonth*, demanded a full-fledged congressional investigation of urban redevelopment and urban renewal to uncover how widely the law "is being exploited by localities and individuals" and how widely it is "being used toward objectives which have no connection with low-cost housing." Byrd charged New York City with violating its contract with HHFA by adding a skyscraper office tower to the plans without telling HHFA. He complained that HHFA, instead of stopping the project, renegotiated it and reduced the federal subsidy for land write-down by $\$ 133,000$.
5. Bugs in FHA's stalled Sec. 220 urban program will get committee scrutiny, especially cost certification and over-cautious FHA

* One workman was killed and 51 hurt when a vast section of the reinforced-concrete floor of the Coliseum's convention floor collapsed May 9, $22^{\prime}$ to the street. The $\$ 35$ million structure, on which federal land subsidy may reach $\$ 3$ million, has been under frequent legal attack as a perversion of the 1949 slum clearance law.
appraisals. Administrator Cole is expected to plead for more time to make the idea work. Democrats will probably agree on the theory that the longer 220 is tied in knots (not a single commitment had been issued by midMay), the more spectacular the eventual rescue job. Besides, it would take more study to find a politically acceptable alternative to cost-certification. (One alternative urged by some mortgage men: tighten up rental housing charters to give FHA an uncontestable right to step into the management if it thinks a project is being milked.)

6. Democrats will try to write in a few extras like HHFA loans to finance local public works, a stepped-up college housing loan program, federal aid against air pollution. There will be attempts to add housing for the aged, give cooperative housing a big boost and separate the Home Loan Bank Board from HHFA. Some of these amendments have a reasonable chance-especially the ones giving more federal help to localities.
7. The US Savings \& Loan League will try to get permission for federal savings and loan
associations to make loans for land purchase and development-up to $5 \%$ of their assets. President J. Howard Edgerton said too much land has been badly subdivided since World War II and may breed slums within another decade. State savings and loans in California, Missouri and Michigan already have authority to make development loans, but this is the first time the plan has been broached on a national scale. Chances: fair.
8. Sen. Homer Capehart (R, Ind.) will make an unsuccessful bid to include a new scheme for insuring mortgages on family housing in military posts. Industry men see in Capehart's plan possibilities for windfalls that would make those Capehart found so shocking seem mere bagatelles. The senator's proposed FHA Title X would permit the military to build up to 100,000 units of family housing. FHA would be "required" to insure the loans if the Pentagon merely certified to the need. FNMA would have to buy them if private money was not forthcoming. Most industry men agree the plan is an evasion of sound mortgage insurance.

## Administration moves to limit ties between public housing, renewal; loud fight ahead

The biggest legislative ruckus as Congress comes to grips with 1955 housing amendments will be over public housing. The situation is complex and disturbing to many free enterprisers. Besides asking congressional approval of 35,000 more public housing units in each of the next two fiscal years, the administration is proposing to extend the June 30 deadline for putting this year's batch of 35,000 units under contract. Only a piddling 142 units were under contract by early May. The reason: hurdles had been deliberately written into the law by Congressmen who wanted to keep the program smaller than its theoretical ceiling.

In details, new directions. But it is not so much the 35,000 units a year as the technical amendments proposed by HHFAdministrator Cole that promise a good scrap. Under present law, new public housing can be built only when needed by low-income families displaced by governmental action. Under the proposed language, the HHFAdministrator would have to find only that the number of new public housing units going up in a city does not exceed the number of families of low income eligible for admission to public housing which he thinks will be displaced by government action.
This would make it clear that HHFA need not consider vacancies in existing public housing. Actually, the agency has already decided it will not do so, but even such oppositeminded experts as Rep. Jesse Wolcott (R, Mich.), last year's chairman of the House banking committee, and Lee Johnson, executive vice president of the pro-public housing National Housing Conference, have told House \& Home they think the intent of Congress was that HHFA must consider vacancies in existing public housing.
The question, though technical, is crucial. If vacancies in existing public housing must be offset against future displacees from slum clearance and freeway building, big cities like

New York and Chicago will have trouble winning approval for any more federally-aided public housing.
Other technical proposals would slice some of the tight ties between public housing and urban renewal, with the net effect of making it easier to build public housing in cities that are not doing much else to cope with their slum problem. Items:
Under existing law, local governing bodies must certify that new public housing units are needed for displacees. The proposed amendment would water this down to a simple resolution approving the project.

- Under present law, no new public housing can be allocated to a city unless it has HHFA approval of a "workable program" against slums and blight, plus a redevelopment or renewal project with federal aid. This would be watered down so that preliminary loan contracts would be signed far in advance of redevelopment. Cities clearing slums without federal aid would also be made eligible for public housing. Cities carrying out redevelopment under the old provisions of Title I of the Housing Act of 1949 would not even have to develop "workable programs" to cope with their total slum problems to get more public housing.
Racial complications. What will Congress do with this package? One thing that makes the outcome more unpredictable than ever is injection of the race issue on one side and quiet White House pressure on the other. Conservative southern Democrats, already repelled by the socialistic aspect of public housing, are even more disturbed by the loud insistence by NAACP and other Negro groups on open occupancy in all government-aided housing. Some Capitol Hill experts estimate that successful Negro insistence on open occupancy in public housing (which the Su preme Court upheld by refusing to grant a writ of review) has cost public housing 19 votes. On the other hand, Republican legislators from sections with a big Negro vote may find themselves on the spot. If they continue
to vote their convictions against public housing, will they be accused of race bias?
Not all Southerners are ready to halt public housing over the integration issue. Some reason that the South will have to accept integration, anyway. More Dixie legislators, however, figure the South will not have to worry about mixing up the races in public housing for a long time because of its frozen neighborhood patterns.
Subtle pressure by Ikemen to switch antipublic housing views of GOP stalwarts in Northern and Midwestern states was also having some effect. Only 50 Republicans in the House voted for public housing last year, despite White House pleading. This year there may be more. And it is in the House that the battle is always closest. One Republican from Pennsylvania who recently switched to support of public housing, offered this revealing explanation: "I'm still against public housing. But President Eisenhower received 55,000 more votes in my district last election than I did. As long as he takes the stand he does, I am going to be for it."
One strategem hinted by its opponents is to suggest a cheaper way of financing public housing, if they cannot lick it completely. They would press for one-shot capital grants in place of present annual assistance contracts which keep the government on the hook for 40 years. As James Downs Jr., Chicago housing and redevelopment coordinator (and no foe of public housing), observed last month "It would be cheaper for the government if we gave every one of these public housing families a $\$ 12,000$ house and $\$ 1,000$ to run it the first year" than to put them up in fancy new beehives subsidized by the government.
Best bet on the outcome: compromise after a loud fight which will be grossly misreported in almost all the press-not as many units as the 35,000 Eisenhower asked and not as much watering down of the rules as Housing Boss Cole wants.


## House committee attacks illegal sale of GI rights

The House veterans affairs committee, when it was not chinning with VA officials over the end of the no-no-down (see p. 136), had an ear to the ground for corruption.
Chairman Olin Teague (D, Tex.) reported that prosecution was under way against persons suspected of buying GI home loan rights in Atlanta, Houston, El Paso, Oklahoma City and Midland and Abilene, Tex. Teague called the practice "vicious" and "widespread." He seemed anxious to cover the waterfront on the VA program, examining everything from VA's foreclosure losses- $\$ 23$ million to date-to such blatant (and presumably isolated) infringements of justice as one operator's practice of approaching jailed ex-GIs in hope of obtaining their rights.
To the argument that it takes two to pull a buyer-seller fraud, investigators replied that most veterans did not know they were violating the law when they sold their rights. They are, to the tune of a possible $\$ 5,000$ fine and five years in prison. One of the most disagreeable features of the racket under investigation was that the veteran remains responsible for amortization of his loan even after he sells the house, may end up in debt to VA for the unpaid portion.


NEW COMMITMENTS "are going to be difficult to obtain in the next few months," predicted George T. Conklin Jr., financial vice president of Guardian Life Insurance Co. (r) at MBA conference. He forecast that availability of funds will govern 1955 housing starts, but expected no mortgage crisis like June 1953 's. Key to the outlook is employment, he said. If unemployment shoots up, easy money will follow; if prices and employment rise, money will be scarce. Seated: VHMC's Arthur Viner, MBA Vice Presi-dential-nominee John Austin.

## Voluntary loan plan gaining, mortgage men told

Mortgage banking's last-chance scheme to avert more and more direct government lend-ing-the Voluntary Home Mortgage Credit Program-has resulted in only 85 loans since its creation last August.
Despite these "seemingly poor results," VHMC Executive Secretary Arthur W. Viner was displaying a cool confidence about the program's chance of success last month. The reason: since January he has been digging bugs out of VHMC's operating methods. As a result, the plan did more business in the first two weeks of April than it had all the rest of its life. And business was soaring.
"Your necks are out," Viner reminded the Mortgage Bankers Assn.'s eastern mortgage conference in Manhattan's Hotel Commodore. "You have said the government does not belong in the mortgage lending field and that you can fill the gaps left in the past by private lenders. If VHMC does not succeed, it is very doubtful that you will ever again be able to argue convincingly against greater and greater government lending programs."
Better VA screening. The gaps in lending are small and remote communities and minorities. Accordingly, VA is referring applications for direct government loans to VHMC first. That, said Viner, is the major source of his outfit's 4,278 loan requests. But until VA started "better screening," the quality of applications was "quite poor." Viner said many "would never have qualified for VA direct loans or guaranteed loans." Upshot: many rejections. Since VA began getting more complete data on properties, including a photo, application quality has shot up. Moreover, applications did not start to reach VHMC in volume until February, and it takes about two months to process them. In mid-April, when Viner asked the 16 VHMC regional offices to check, he got this good news: nearly half the applications were being considered by lenders who thought they would probably make a loan.

VA screening was not the only bug. Orig inally, applications destined for life insurance companies went to their correspondents. But Viner said "many companies" did not tell their correspondents to support VHMC (although it was a life insurance company idea to start with). Besides, lending practices often need to be different in small towns. So VHMC is going to send applications to life insurance
home offices, let them relay the paper to mortgage bankers if they are interested. Thus the broker "will know from the outset that it is worth his while to look into each application." Local lenders will still get first crack at VHMC applications.
The program's "greatest problem" left, said Viner, is fuller coverage of the most remote parts of the nation, "such as Mentana and eastern Kentucky," where few investors allocate funds and mortgage correspondents do not cover. "In areas where FHA and VA money has been scarce, the building boom is years behind that of the cities, and there are many highly qualified borrowers."

Overhaul state laws? Concern over 20 years of government inroads into mortgage lending also was reflected at a panel on the conventional loan. Several speakers agreed
with MBA President Wallace Moir, who called for an overhaul of state laws to increase loan to value ratios above the generally prevailing 66\%. (Such a ratio, declared Lindell Peterson, MBA vice president, is now "entirely obsolete" for housing.) Moir urged insurance firms to show "more confidence" in their correspondents, even to the extent of letting them commit for loans "on the spot." Savings and loan lenders "are assuming the risks these days," he declared, "and goading us into making changes in our procedure."

Mortgage men at the sessions and elsewhere across the nation last month reported money was continuing to tighten, as anticipated. Said one: "The symptoms of weakness of two or three months ago are now realities." In Detroit, 30-year no-downs were reported "practically dead." Metropolitan Life Insurance Co. was in the market with 1957 quotas.


CORRIDOR TALK engaged (clockwise from I) Brown Whatley, MBA President Wallace Moir, Aubrey Costa, Guy Hollyday and Miles L. Colean. Whatley, Costa and Hollyday are former MBA presidents.
h. M. CASSIDY, board chairman of Johns-Manville Corp., disputed the argument that new homes are being overbuilt. Instead, he said, "we are merely satisfying an enormously increased demand" as a result of "a revolution in income, a revolution in where people want to live and . . . easy credit." He forecast rebuilding the nation will be the "dynamizer" of the economy.


SAM NEEL, general counsel, called FHA "the source of most of our troubles," but said the agency was finally "returning to orderly processes" after a scandals-caused year of confusion. He also complained that FNMA now forces mortgage bankers to advance it (temporarily) escrow funds for local taxes, etc. on FNMA-held mortgages. FNMA thus cuts Treasury borrowing $\$ 400,000$ a year. Cried Neel: "If any private insurance company used somebody else's money held in trust to pay its own bills, it would be hauled before a federal court in a hurry."

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## Unhappy with slow start of urban renewal, HHFA Chief AI Cole tells NAHB directors

HHFAdministrator Albert M. Cole is worried over the snail-paced progress of urban renewal.
He confessed his concern in a talk to NAHB directors last month at their annual spring meeting in Washington's Mayflower Hotel. Said the housing chief:
"I am not satisfied with progress to date . . we have problems in getting our organization moving as fast as I'd like it to move."
Cole conceded that one of the "roadblocks" to translating the administration's new approach for fighting slums into action was "planning" inside his own agency. But he defended the record to date (not a spadeful of earth turned, not a nail driven) by noting: "I'd rather have progress a bit slower and have the job well done than to move too fast" and make mistakes.

Public housing next? Concern over administrative hurdles being thrown in front of urban renewal-many of them by HHFA's urban renewal administration-has been a growing topic of discussion in recent weeks, not only among builders, but also among local housing and redevelopment officials. Some have even gone so far as to wonder aloud if public housers inside the agency will stall renewal so long that Congress will decide it does not work and vote for a vastly expanded public housing program.

Cole reminded NAHB's 375 -man board of directors that the delay in launching one part of the renewal program, FHA's Sec. 221 for low cost housing for slum clearance displacees, was attributable among other things to lack of applications. "We must do something about this, gentlemen," he begged. "It's very close to my heart." Cole said that if private lenders shy away from making mortgage loans under Sec. 221, the Federal Natl. Mortgage Assn. has money to back them.
In a rapid review of the 1955 housing scene, the administrator also made these points:

- HHFA has rejected demands by Negro advancement groups that the government compel open occupancy in FHA- and VA-aided housing "because what we need is to get some housing built." Cole announced he is calling representatives from some 25 Negro-controlled life insurance companies and banks to Washington to ask them "what they are doing to accomplish their share" of financing minority housing. "I don't think that lenderseither black or white-are doing all they can in this field," he declared.
$\rightarrow$ Recent alarms raised by some lenders about overbuilding and the dangerous level of mortgage debt are "nonsense." Cole predicted: "The market can and will be sustained at an extremely high level-as high as it is today or higher."
His optimism was echoed by NAHB President Earl "Flat Top" Smith. deplored deplored "alarmists," predicted 1955 starts will reach 1.25 to 1.35 million, and attributed the recent spurt in housing largely to "dumping" of enormous amounts of money into the mortgage field by insurance companies and other large investors last fall.

Help from MPRs. Hope that some of the bottlenecks stalling urban renewal will soon be cracked was given NAHB by Beverley Mason, FHA urban renewal officer. He promised that minimum property requirements for FHA Sec. 220 renewal housingthe chief part of the program-will be kept in line with local conditions. Said Mason: "Some underwriters operating on their own, have developed certain specifics for existing property . . . that are not practical. We're insisting that insuring offices approve a rehabilitation loan if the result will be a property in a stable neighborhood which will be marketable over a period of years. If local custom says a shotgun house (i.e., without halls) is okay, then it's okay. If local custom says an $18^{\prime \prime}$ side yard is okay, well, okay."
As a result, Mason pointed out, FHA property standards for fixup homes may well vary from one locality to another.
FHA is also prepared to relax its ordinarily rigid minimum property requirements "in some cases" for houses built in renewal areas under Sec. 220. Mason noted that existing lot patterns in some old neighborhoods do not permit lots wide enough to meet FHA's specifications.
Some builders attacked the urban renewal administration's insistence that a city have the right of eminent domain to seize property for resale to private builders in order to qualify for a "workable program," which is a prerequisite to the liberal terms afforded by Secs. 220 and 221. Renewal Commissioner James Follin said 18 states, including Florida and Texas, lack laws giving communities such power. Şaid one Texas builder: "We say we can clear slums without it." Replied Follin: "That still has to be proved." Follin offered, however, to accept a community's promise to try to obtain eminent domain power if it does not already have it.

Long-range studies? This session was one of the calmest NAHB has held in recent years. Conspicuously missing was the sense of crisis which has dominated so many NAHB gatherings. Cracked one builder: "All the boys are so busy building houses they haven't time or interest for much else."
Some directors were critical of President Smith for not making a sharper fight against administration proposals to step up public housing and reduce its ties to urban renewal (see p. 40). Smith's reply: NAHB was still fighting public housing "in our own way." The association had decided not to testify on the housing amendments bill before the Senate banking committee, where public housing supporters dominate. NAHB planned to testify before the House banking committee, however, where support for public housing is not so strong. Some builders urged a major study of public housing operations by hired experts, costing perhaps $\$ 75,000$ and perhaps undertaken jointly with realtors and mortgage bankers. But it was uncertain whether NAHB would decide to do so.
Another long-range proposal, studied without action, was one for a major nationwide inquiry into problems of suburban development, perhaps by a Congressionally-created
commission. Backers of the plan hoped it would focus public interest on the communitywide aspects of land and subdivision development troubles which plague builders.
The directors also:

- Toured their $\$ 2.5$ million National Housing Center, an eight-story brick and glass office and exhibit building nearing completion in downtown Washington. Although the center is not scheduled to open until August or September, enough materials makers already have signed up for exhibit space to assure that the center will operate at the break-even point, NAHB officials said.
Heard FHA Commissioner Norman Mason report that FHA's backlog of unprocessed applications (March, News) had shrunk to the point where "work is current, or nearly so, in $80 \%$ of the offices."
Accepted major responsibility for raising $\$ 2$ million in cash and building materials for a Homes for Korea program (see p. 67). Gen. James A. Van Fleet, retired former 8th Army commander, told NAHB that the sponsoring American Korean Foundations hopes to build 1,000 single and multi-family homes in Seoul.


## LABOR NOTES

## Bill to control wages on homes looks stalled

Labor has apparently lost its attempt to apply the prevailing wage act to FHA and VA oneto four-family homes.
Even advocates of the bill sponsored by Rep. John E. Fogarty (D, R.I.), a former president of Rhode Island AFL bricklayers, concede there is virtually no chance of action at this session of Congress.
The housing industry has been waging a quietly intense campaign to pigeonhole the legislation. The big arguments: it would drive up the cost of homes and enmesh homebuilding in what NAHB has called "unbelievable red tape" (see below). Moreover, Rep. Graham Barden (D, N.C.), chairman of the House labor committee, has taken an unsympathetic attitude toward the measure. Trade unions have not been potent in his district and he has been something less than a zealot for labor legislation. On top of that, construction men from his district have warned him that the proposed across-the-board application of the Davis-Bacon wage act to all govern-ment-aided building would boost the cost of road building by $25 \%$.

At midmonth, the Capitol Hill consensus was that even if Barden's committee gets around to holding hearings, the measure will get no further this year. Fogarty himself has hinted he would be willing to compromise on amendments excluding houses built to order for specific buyers. There has also been talk of exempting builders who erect less than 50 houses a year. Fogarty has not committed himself on this point, but has urged that all large builders be covered.

Homebuilder objections to the bill center on these things it would farce builders to do:
-Get a preconstruction determination of prevailing wages and have it reviewed by FHA.

- Make a special request for apprentice rates

with evidence of a bona fide apprentice program registered with the appropriate state or federal agency.
- Hire only job classifications listed by the Labor Dept.
Pay any employe doing a job other than his own (except apprentices) the journeyman's rate, whether or not he is qualified.
-Submit to Labor Dept. control of proportions of laborers, helpers and apprentices.
Keep payroll records for three years.
Submit weekly copies of payrolls with 10 or 12 columns of information.


## Lumbermen fight plan to boost minimum wage

Lumber manufacturers were among the most vociferous opponents of proposals to boost the minimum wage from $75 \xi$. Upping the national wage-it might go up to $\$ 1$ an hourcould "create widespread unemployment and drive many sawmills out of business," asserted the National Lumber Manufacturers Assn.
The administration has come out for an increase to 90 ¢. Labor groups have called this
"grossly inadequate" and plumped for $\$ 1.25$. About $25 \%$ of employees in the lumber and furniture industry, combined, earn less than $90 \Leftrightarrow$ an hour-the highest proportion in any industry in the nation. The serious part of the proposal, thought the New Jersey Lumbermen's Assn., was not the immediate impact it would have on dealers, but the threat it would pose of further rises in years ahead.

## Painters lose attempt to curb use of rollers

The US Supreme Court refused to review a Michigan Supreme Court decision that a union's attempts to restrict the use of paint rollers was "an unlawful labor objective."
The decision applied to painters in the Detroit and Pontiac areas. The original ruling had been appealed by the AFL Painters, Decorators and Paperhangers on the grounds that the Natl. Labor Relations Board had exclusive jurisdiction over such a controversy. The Michigan decision upheld findings of a lower court that the use of rollers was not injurious to the health or safety of painters.

## Cleveland builders win deal with carpenters

The Home Builders Assn. of Greater Cleveland won a case for independent bargaining with the 2,500 carpenters it employs. The Association petitioned the National Labor Relations Board for a representation election. When the hearing was recessed at the request of the AFL carpenters union, the latter agreed in writing to bargain separately with the home builders and to urge other AFL building crafts to do likewise.
Last year the Cleveland Association ran into a week-long strike when it held off from signing wage rises agreed upon by the union and the Building Trades Employers Assn. Members felt they wanted more representation, since they claim they employ some $65 \%$ of the area's carpenters, and were not fond of BTEA's "autonomy clause," under which local workmen can refuse to install items like pre-hung doors and kitchen cabinets.
Meantime, painters in the Cleveland area were threatening a strike to back up a request for a $25 \phi$ an hour wage increase.

## Six homes, apartments cited in annual AIA contest for 'outstanding architecture'

AIA's seventh annual competition for outstanding American architecture gave five first honor awards to schools, commercial buildings and an embassy. The six homes and apartments shown here were among 22 award-of-merit winners (others were not housing). The jury: Thomas H. Locraft, Ludwig Mies van der Rohe, Eugene J. Kennedy Jr., J. Byers Hays, Ernest Born. All 27 winners will be displayed at the AIA convention in Minneapolis June 20-24.


Anshen \& Allen of San Francisco did a winning beach house for Ernest Moore of Carmel.

Roger Lee of Berkeley, Calif. won one of four awards given for dwellings with the George Channing house in Sausalito.


## Iedrich-Blessing



George Fred Keck and William Keck of Chicago won a merit award for the Sigmund Kunstadter house in Highland Park.

Carl Maston of Los Angeles, act
ing as architect-builder-owner,
came up with an award-winning five-unit apartment building.

One of two winning apartments was a development by Keyes, Smith, Satterlee \& Lethbridge in Fairfax County, Va.


Architect Charles Goodman took one of the 22 merit awards for his own home in Alexandria, Va .


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## SIDELIGHTS

## Washington inside

- Washington's Normandy building, headquarters of HHFA, is fairly bulging with gumshoe men poring over seized FHA records and files. Administrator Cole last month asked Congress for a $\$ 350,000$ supplemental appropriation for "compliance" work-i.e. gumshoe operations.
HHFA announced that the New York management consultant firm of Cresap, McCormick \& Paget has been hired (for $\$ 49,350$ ) to do an over-all study of HHFA. One aim: to simplify redevelopment red tape. At FHA, the New York management firm of Woodward \& Fondiller was probing into Title I repair loan accounting and control techniques to see if the agency's system can be improved. Both studies reflect the administration's penchant for management engineering. Another firm is working on how to enlarge the working area of the White House; the Pentagon is full of study teams.
-Television interests are trying to persuade FHA to put TV on package mortgages. They even have a plan to hook TV up to an intercom to play music in the bathroom.
- Justice Dept. was still pondering, at midmonth, whether to appeal the Gross-Morton tax case-the test suit on whether 608 mort-gaging-out profits can be treated as capital gains (the US Tax Court said they can). Internal Revenue Service gave Justice its recommendations back in March, but officials refused to say what they were.


## Ribbon windows banned

Metropolitan Life Insurance Co., the nation's biggest, has begun refusing to make mortgage loans on homes where bedrooms have nothing but high ribbon windows. Danger in case of fire is the chief reason why Met now insists every bedroom have at least one conventional window-i.e., not above a specified height from the floor.

## How to sell plumbing

The plumbing supply industry should separate its business with home builders from its replacement and modernization business.

President John L. Holloway of Crane Co., who made that recommendation in a recent talk, thinks the plumbing industry is saddled with outmoded methods of distribution and merchandising. Said he: "Manufacturers have fallen down badly in failing to establish stable, generally accepted practices in the sale of their product. The wholesalers, in turn, are so lacking in any sound continuity of sales practices that it is only in exceptional instances that their salesmen, let alone the dealers, know from day to day what their price or other distribution procedure is."
Holloway urged plumbing wholesalers to aim at the replacement market-"a potential of 1.8 million new bathrooms a year."

## Needle for bad design

Neil A. Connor, FHA's chief architect, summed up his efforts to get the agency
to give higher valuations for top design in a talk to Detroit mortgage bankers: ". . Well-designed houses will not only sell for more than those poorly designed, but will retain their value longer, which is of interest to you mortgagees. Such good design must receive full valuation. Poor design must be penalized or not be accepted at all. There is no other choice for mortgagees or the FHA."

## FHA wins windfall round

FHA won the first round in its major test case to recapture 608 windfall profits.

Federal Judge Thomas F. Meaney ruled in Newark, N. J. that Linwood Park, Inc. (Sidney Sarner and Ralph J. Solow, original partners) had violated its corporate charter from

FHA. FHA had set out to call a preferred stockholders' meeting, planning to gain control of the corporation and then act to obtain return of the mortgage profits. But Sarner obtained an injunction to block FHA from convening the meeting. Carl Eardley of the Justice Dept. then movved for a summary judgment based on violation of the charter.

Judge Meaney ruled the corporation guilty of these violations:
Paying $\$ 1,318,000$ to Solow without approval of FHA.
Lending $\$ 1,270,000$ to two other corporations owned by Sarner that operate business and recreation enterprises in Linwood Park.
Refusing to answer FHA's questionnaire on building and operating costs.

The government has asserted that Sarner and Solow made a profit of $\$ 2.4$ million on an FHA-insured loan of $\$ 8.9$ million for development of the 1,200 -unit project.

In Washington, FHA Counsel Frank Meistrell announced that ten windfall cases have been sent to the Justice Dept. for action and 60 others are almost ready.

# BOCA makes 40 changes in its two codes; plywood, chimneys, wallboard affected 

Some 40 revisions in the basic and abridged codes of the Building Officials Conference of America were approved at the group's 40th annual conference in Milwaukee.

Most of the changes were minor, involving word changes or rearrangement of existing sections, but a few showed considerable updating. Examples:

- A series of orders affecting the use of plywood: new specifications for minimum thicknesses in subflooring, maximum spans for roof sheathing, nailing requisites, etc.
Revision of requirements for public parking decks, clarifying height and area requirements. Acceptance of packaged chimneys, with less stringent requirements for clearance to combustible materials.
Up with the times. This year marked the tenth anniversary of the start of BOCA's efforts to get a building code into shape. The first abridged version was printed early in 1950 (Paul E. Baseler, present executive secretary and code correlator, moved for its adoption at the 1949 convention when he was working as a building official in Jennings,

Mo.) and the basic code followed a few months later. The second edition of both the abridged and basic codes appeared this year.

Main purpose behind the revisions, which appear annually in supplement form, is to keep abreast of technical developments in the construction and building products industries. New rulings, for example, on the use of gypsum wallboard and other interior sheathings were included in this year's changes. BOCA says about 180 communities have adopted one or both of the codes.

New officers. Arthur N. Rutherford, inspector of buildings in West Hartford, Conn., moved up to the presidency of BOCA (see photo). Other officers moved up a notch, except for Treasurer Norman G. Fricke, also of West Hartford, who was re-elected, and S. Logan McConnell of New Orleans, who was elected secretary.

New members of the executive committee: Past President Arthur J. Benline of New York; T. C. McBride of London, Ont.; Alfred Schroeder of St. Paul and O. M. Pushkin of Miami Beach.


NEW BOCA PRESIDENT Arthur N. Rutherford (r) accepts the gavel from Gil Morris, president of the Pacific Coast Building Officials Conference. It is a long-standing custom of the two groups to install each other's new chief officer after each annual election.


FOUR TOP MEN Of BOCA share a program of the day's events during the 40th annual conference in Milwaukee. From left: Leon M. Gurda, convention chairman; Albert $H$. Baum of the executive committee; outgoing president Arthur J. Benline, and executive secretary Paul E. Baseler. Attendance: 284.

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PEOPLE: Lindell Peterson, John Austin to head Mortgage

## Bankers' Assn.; Dutch Architect Dudok wins AIA gold medal

John F. Austin Jr., president of T. J. Bettes Co. of Houston, was nominated for vice president of the Mortgage Bankers Assn. by MBA's nominating committee in New York. Vice President Lindell Peterson was nominated for the presidency. Both men are to be elected at MBA's 42nd convention in Los Angeles Oct. 31-Nov. 3.
Austin heads the biggest mortgage banking firm in the Southwest (it serviced $\$ 650$ million


AUSTIN


PETERSON
worth of loans last year), worked up to the position after experience as senior bank examiner for the Federal Reserve Bank in Dallas and then as vice president of the South Texas National Bank. He is president of the Texas Mortgage Bankers Assn, and on MBA's board of governors. Peterson, president of the Chicago Mortgage Investment Co., has been on the governing board for some years. He was elected vice president last year at least partially in recognition of his extensive work as head of MBA's educational program.

AIA's Gold Medal, the highest professional honor given by the organization, will be awarded to Dutch Architect Willem Dudok at its convention in Minneapolis June 20. Dudok, who in the words of Historian Talbot Hamlin has "for nearly 40 years . . . been working devotedly for the humanization and enrichment of the modern world," will be the 21st architect to receive the medal. Other awards: to the Kohler Foundation, Inc. for restoration of Wade House in Greenbush Village, Wis.; to Turpin C. Bannister, FAIA, for final editing of "The Architect at Mid-Century." Danish Architect Kay Fisker will be made an honorary fellow. Honorary memberships: Poet Carl Sandburg, Urban Renewal Commissioner James W. Follin of HHFA, George B. Melcher of Minneapolis and C. D. Spragg, secretary of the Royal Institute of British Architects in London.
The offices of secretary and second vice president of AIA were the only ones so far in which there would be a contest at the election. Ross Shumaker of Raleigh, N. C. and Edward L. Wilson of Ft. Worth had been nominated for secretary; Hugh A. Stubbins Jr. of Lexington, Mass. and John N. Richards of Toledo, for second vice president. Others on the slate: George Bain Cummings of Binghamton, N. Y., president; Earl T. Heitschmidt of Los Angeles, first vice president; Leon Chatelain Jr. of Washington, D. C., treasurer.

Fourteen faculty members at the Illinois Institute of Technology's institute of design signed an open letter to IIT President John T. Rettaliata protesting the appointment of a new design director. They asserted that the directorship of Jay Doblin,
now with Designer Raymond Loewy in New York, would place the "fundamental tenets of the school" in "serious jeopardy." The faculty was suffering considerable turnover. Peter Selz and Crombie Taylor had resigned; Hugo Weber had asked for a leave of absence; Konrad Wachsmann, Robert Nickle and Nathan Lerner had been dismissed. The anti-Doblin group seemed to feel that the new director, who is scheduled to take over in the autumn, would somehow diminish the pioneering spirit that the design institute prides itself on. But Ralph Owens, dean of engineering, who has been acting director this past year, said he thought the faculty misunderstood Doblin's philosophy. And he added: "No member [of the faculty] has resigned because of the appointment of Doblin."

AW ARDS AND PRIZES: Architect Gordon Bunshaft, chief of design for Skidmore, Owings \& Merrill, won the architecture prize of the Na tional Institute of Arts and Letters; Architect Minoru Yamasaki of Detroit received honorable mention; Frank Lloyd Wright was scheduled to receive an honorary doctor of fine arts degree (his first of the season) from the University of Wisconsin; Developer Arthur Rubloff of Chicago was named Man of the Year by the city's North Side Civic Committee, a short while afterwards received one of ten Horatio Alger awards from the American Schools and Colleges Assn.

Former NAHB President Manny Spiegel, who collapsed while toastmastering a Chicago homebuilders' dinner just before January's NAHB convention, left Manhattan's Doctors Hospital last month, moved to a Spiegel-built house in Englewood, N. J. for an outdoor summer. Chicago Builder Nathan Manilow, who withdrew from the race for NAHB president this year after undergoing surgery, was back in Chicago after several months of recuperation in Florida.

Charles R. Diebold, president of The Western Savings Bank of Buffalo, was elected president of the Natl. Assn. of Mutual Savings Banks last month. Lawyer Diebold is also a director and vice president of New Dickenson Mines Ltd., in

Kramer Studio


## DIEBOLD

 Canada, and treasurer of the Buffalo Chamber of Commerce. President Crawford H. Stocker Jr. of the Lynn (Mass.) Five Cents Savings Bank was named vice president.In a talk to the association convention in Atlantic City, Diebold put himself on the side of those who debunk family formations as the big influence on housing demand. These three things bulk larger, he said: 1) migration, 2) rising birth rates which cause growing demand for three- and four-bedroom homes, 3) soaring family income.

President J. Howard Edgerton of the US Savings \& Loan League urged an end to "bickering and dissension" between commercial banks and savings institutions. His theory: "When we take in $\$ 1,000$ from a local citizen, it immediately finds its way into our commercial checking account. Then when we take it out of that checking
account to pay on the purchase price of a new home or write checks to a contractor or subcontractor, the money still goes directly back into commercial banking."

William J. Hallahan, a member of the House banking committee staff since 1946 (he is now clerk and general counsel) was nominated as the third member of the Home Loan Bank Board, to join Walter McAllister (chairman) and Ira Dixon. Hallahan is a graduate of Syracuse University, served in the Army and later finished his law courses at Georgetown University.

Chester Stackpole, general sales manager of the heating and cooling division of Union Asbestos \& Rubber Co. in Chicago, will become managing director of the American Gas Assn. this month. Stackpole graduated from Brown University in 1922, has spent 26 years in the utilities business.

Harry J. Long, the new president of the Natl. House Builders Assn. of Canada (NAHB's counterpart), is a snow-topped Toronto builder whose 85 houses a year put him among the 15 biggest home producers in the country. He recently succeeded Gordon Shipp, who is also one of Canada's biggest builders. Long, now 62 , began his lifelong building career as a carpenter for his father, who began his career as a carpente: and worked up to become a housebuilder. Long has been running his own enterprises since 1918. Currently, he is concentrating on two models of a 1,200
 sq. ft . bungalow for $\$ 14,000$. He sells under terms of Canada's National Housing Act, which was remodeled just ove a a year ago into something resembling the FHA (March '54, News).

One thing the Canadian law lacks is mortgage insurance for used houses. But Stewart Bates, president of the government's Central Mortgage \& Housing Corp. (equivalent of HHFA), told the housebuilders' convention that elected Long that he thought it was about time the government consider adding existing housing to its program. Among other things, high down payments under all-conventional loans are making the Canadian used house market sticky.

DIED: Frank Cogswell Mortimer, 79, executive vice president and director of the Pioneer Savings \& Loan Assn. of Los Angeles, April 6 in Glendale, Calif.; Albert Preston Greensfelder, 75, member of the National Capital Park and Planning Commission from 1947 to 1953, April 17 in St. Louis; Henry Meiggs, 48, president of State Mortgage Company, San Francisco and his brother, Architect Lawrence Meiggs of Beverly Hills, in a yachting accident April 21 off Pt. Arguello, Calif.; Elmer C. Jensen, 85, architect of 29 skyscrapers in or near Chicago's Loop and 26 bank buildings, April 24 in South Haven, Mich.; Sam E. Stout, 75, founder and board chairman of General Plywood Corp., April 24 in Louisville, Ky.; Will F. Morrish, 72, former president of the Bank of America, April 26 in Berkeley, Calif.; John Absher, 62, Washington, D.C. home builder, April 26 in Washington; Gordon W. Cameron, 60 , vice president and treasurer of Aluminum Company of America, Ap:il 29 in Pittsburgh; Harry E. Richards, 60, Houston mortgage banker and realtor, May 5 in Houston.
(NEWS continued on p. 5I)

## VAN-PACKER

 JOBBER CITIESALASKA: Seattle, Wash.
COLORAO:
CONNECTICUT:
Hartford
DIST. OF COLUMBIA: Washington
FORIDA:
Jacksonville, Orlando, Pensacola, Tallahassee, Tampa
GEORGIA:
Albany, Atlanta
IDAHO:
Boise
ILLINOIS:
Aurora, Blue Island, Chicago, East St. Louis, Glen Ellyn, Joliet Libertyville, Lombard Mendota, Moline, Peori Rockford, Springfield, Sterling, Urbana
(NDIANA:
Evansville, Fort Wayne, Gary, Hammond Indianapolis Marion, Logansport Terre H, South Bend,

IOWA: Cedar Rapids, Clinton, Davenport, Des Moines, Fort Dodge, Mason City Ottumwa, Sioux City, Water
KENTUCKY:
Louivsille, Paducah
MAINE:
Auburn
ARYLAND:
Baltimore ASSACHUSETTS: Chicopee, South Boston MICHIGAN: Bay City, Detroit Ferndale, Flint, Royal Oak, Saginaw
MINNESOTA:
Duluth, Mankato Minneapolis, St. Paul, Virginia
MISSOURI: Columbia, Kansas City, St. Louis
MONTANA: Billings, Great Falls
NEBRASKA: Grand Island, Omaha
NEW JERSEY:
NEW YORK Albany, Binghamton, Buffalo, Floral Park Odessa, Syracuse
Yonkers Yonkers
NORTH CAROLINA: Charlotte,
Fayettevil Fayetteville, Raleigh
NORTH DAKOTA: Bismarck, Grand Forks, Rugb
OHIO:
Akron, Chillicothe, Cincinnati, Cleveland, Columbus, Dayton, Lima Mansfield, Marion, Toledo Youngstown, Zanesville
OREGON:
Portland
PENNSYLVANIA: Harrisburg, North Bessemer
Pittsburgh, Philadelphia, Pittsburgh, Primos
SOUTH CAROLINA: Columbia, Greenville
SOUTH DAKOTA: Pierre, Rapid City
TENNESSEE: Knoxville, Memphis
UTAM: Salt Lake City VERMONT: Burlington VIRGINIA: Norfolk, Richmond
WASHINGTON: Everett, Seattle, Spokane, Yakima
WEST VIRGINIA: Wheeling
WISCONSIN: Madison, Milwaukee Sheboygan Falls, Wausau

# Install genuine masonry chimney in 3 hrs. with pre-engineered Van-Packer units 

Saves $\mathbf{2 0 - 4 0} \%$ on cost of time and material over brick. The Van-Packer Packaged Masonry Safety Chimney goes up in 3 man hours with 2 ft ., factory-engineered masonry sections; no special skills or tools required. Completely packaged chimney, including flashing, delivered to job when needed. Cuts job delays, high labor costs.

UL tested and listed for coal, oil or gas for all home heating plants and incinerators; approved by major building codes. Sections are made of $2000^{\circ}$ F. $5 / 8^{\prime \prime}$ fire clay tile lining, $3^{\prime \prime}$ vermiculite concrete insulating wall, and cementasbestos jacket, have insulating value of 2 ft . brick wall$100 \%$ fire safe. Acid-proof cement seals joints permanently. Develops $34 \%$ better draft than an $8^{\prime \prime}$ x12" brick chimney.

Saves floor space. Ceiling or floor suspended VanPackers allow floor plan flexibility. Furnace can be cen-trally-located for balanced heat runs. Chimney installs easily even after house is completed. 14" OD flue sections install between joists on $16^{\prime \prime}$ centers without joist cutting.

Attractive Brick-Panel housing and de luxe housing cap assembly provide buyer acceptance of conventional masonry, blend with all exteriors. Brick-red cement-asbestos panels, $16^{\prime \prime}$ wide by $24^{\prime \prime}$ deep, will not dent, rust, corrode . . . have the permanence of stone.

Immediate delivery through $\alpha$ nation-wide chain of heating and building material jobbers and dealers. See "Chimney" listing in your classified directory for your nearest jobber, or write Van-Packer Corp.


Saw holes in floor, ceiling and roof. No clearance to wood members necessary.

Place chimney support in position. Nail iron supporting straps to floor joists.

Set masonry sections in place up to desired height, using joint cement provided.

Assemble leak-proof flashing around flue. Housing then installs over completed flue.

Housing panels, slide ogether with QuickLock corners.

Fasten housing cap assembly onto housing to complete VanPacker installation.

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PACKAGED MAsoniy CHIMNEY

Van-Packer Corporation - Bettendorf, Iowa


Van-Packer Jobbers are located in the cities listed at left
If there is no jobber conveniently located to you, write
Van-Packer Corp. for Bulletin 19-RS-1.

## HOUSING STATISTICS

## Huge construction outlays put

 squeeze on cement and gypsumRecord-breaking outlays for new construction (see table) were pushing the materials manufacturers to the limit. Cement supplies, perennially inadequate at the start of the building season, were critically short in some areas. The gypsum manufacturers still could not meet demand, even on three-shift production. The glass business, to use one executive's description, was "hopping."
Expenditures for new construction reached new highs for April and for the first four months of the year. The April total of $\$ 3.2$ billion was some $\$ 400$ million over what it was a year ago; the four-month total of $\$ 11.6$ billion topped 1954's corresponding total by $\$ 1.4$ million. The upshot was that the seasonally-adjusted rate for outlays was an unprecedented $\$ 41.6$ billion. Last year's outlays were $\$ 37.2$ billion.
The greatest dollar gains over ' 54 in the four-months' figure was in private residential building. It was running at an adjusted annual rate of $\$ 16$ billion. (Last year's expenditures: $\$ 13.5$ billion.) Private expenditures of all kinds were $21 \%$ higher from January through April than last year.
Allocations and gray markets. Cement was so short in parts of Texas-notably Houston, Ft. Worth and Dallas-that gray market operation had doubled the price of a sack. Some builders had tried importing the stuff from Mexico and Belgium, but transportation costs brought the price up close to the inflated price of domestic supplies. Chicago was facing up to a shortage; supplies in Los Angeles were none too plentiful, but had not reached the critical stage.
The situation on the gypsum front was summed up by Chairman Melvin H. Baker of National Gypsum Co., commenting on the fact that one of the company's plants in Mobile broke down recently from plain overwork. "You can't run plants $61 / 2$ days a week, around the clock, and not expect your people and plants to be fatigued," said Baker. He added: "The gypsum industry is presently geared to supply about 1.2 million new homes a year. But the present rate of homebuilding is about 1.4 million."
Expansion plans by National and other leaders in the field would ease the situation. Until then: allocations.

## MORTGAGE MARKET QUOTATIONS

(Originatuons quoted at net cost, secondary market sales quoted with servicing by seller) As reported to House \& Home the week ending May 13th

|  |  |  | $5 \%$ equity or more | No down payment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | FHA $41 / 2^{\prime}$ s | VA $41 / 2$ 's | VA $41 / 2$ 's |  |


| Boston local | par-101 | a | par-101 | a | par-101 | a |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\quad$ Out-of-state | a | $98-99$ | a | $98-981 / 2$ | a | $95-98$ |
| Chicago | $97-99$ | $98-$ par | $96-99$ | $98-$ par | a | a |
| Denver | $98-$ par | $98-$ par | $98-$ par | $98-$ par | $971 / 2-99$ | $971 / 2-99$ |
| Detroit | $971 / 2-99$ | $98-99$ | $96-98$ | $97-98$ | b | b |
| Houston | $99-$ par | $99-$ par | 99 | 99 | $971 / 2-98$ | $971 / 2-98$ |
| Jacksonvillet | $99-$ par | $99-$-par | $99-$ par | $97-98$ | $97-98 \dagger \dagger$ | $97-971 / 2 \dagger \dagger$ |
| New York | $99-991 / 2$ | $99-991 / 2$ | $99-991 / 2$ | $99-991 / 2$ | $99-$ par | 99 |
| Philadelphia | par | par | $99-$ par | $99-$ par | $98-99$ | $98-99$ |
| Portland. Ore. | $99-$ par | $99-$ par | $98-99$ | $98-99$ | $96-98$ | $96-98$ |
| San Francisco | $99-$ par | $99-$ par | $97-98$ | $97-98$ | $94-96$ | $94-96$ |
| Washington D.C. par | $99-$ par | $99-$ par | $98-$ par | $98-99$ | $97-99 *$ |  |

a No marke
${ }^{\text {b }}$ Extremely limited volume

- Typical range : bottom prices -lightly lower.

SOURCES: Boston, Robert M. Morgan, vice pres., Boston Five Cents Savings Bank; Chicago, Maurice A. Pollak, vice pres. \& secy. Draper \& Kramer Inc.; Denver, C. A. Bacon, vice pres., Mortgage Investments Co.; Detroit, Robert H. Pease, pres., Detroit Mortgage \& Realty Co.; Houston, John F. Austin Jr., pres., T. J. Bettes Co.; Jacksonville, John

[^3]
## BUILDING MATERIALS PRICES

Index - 1947-1949 = $100 \quad$ Source, BLS 125

BLS' index of wholesale building materials prices rose one-half point to 123.3 in April. Small increases in lumber, millwork, plumbing and paint were partly offset by cheaper asphalt roofing.

## FHA AND VA APPLICATIONS



April FHA applications dipped to 33,626 new dwelling units, compared with 36,622 the month earlier. VA appraisal requests for proposed homes dropped similarly to 65,856 in April compared with 71,939 in March. Except for pre-Reg.X October 1950, March and April were the highest VA months on record.

## NEW CONSTRUCTION EXPENDITURES

## (millions of dollars)



## PRIVATE

| Residential building (nonfarm) | 980 | 1,294 | 32 | 3,417 | 4606 | 35 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| New dwelling units | 860 | 1,175 | 37 | 3,035 | 4,215 | 39 |
| Additions and alterations | 96 | 96 | 0 | 291 | 305 | 5 |
| Nonhousekeeping | 24 | 23 | -4 | 91 | 86 | -5 |
| Nonresidential (nonfarm) | 464 | 564 | 22 | 1,893 | 2,212 | 17 |
| Industrial | 169 | 185 | 9 | 697 | 743 | 7 |
| Commercial | 151 | 213 | 41 | 626 | 807 | 29 |
| $\quad$ Religious | 40 | 54 | 35 | 163 | 215 | 32 |
| Educational | 39 | 40 | 3 | 154 | 162 | 5 |
| Social and recreational | 16 | 17 | 6 | 64 | 69 | 8 |
| Hospital and institutional | 27 | 29 | 7 | 106 | 113 | 7 |
| *PRIVATE TOTAL | 1,927 | 2,339 | 21 | 7,053 | 8,559 | 21 |
| PUBLIC |  |  |  |  |  |  |
| Residential building | 34 | 21 | -38 | 139 | 86 | -38 |
| Nonresidential building | 377 | 363 | -4 | 1,441 | 1,337 | -7 |
| Military facilities | 79 | 87 | 10 | 296 | 330 | 11 |
| Highways | 230 | 245 | 7 | 645 | 680 | 5 |
| Sewer and water | 78 | 88 | 13 | 290 | 317 | 9 |

* Some components not shown, so total exceeds sum of parts. Depts, of Commerce \& Labor


## BRIGGS BEAUTYMARE



Two bathrooms make homes more saleable because they make them more livable.
Your business benefits accordingly.
Briggs pioneered the two bathroom idea-and has done more than any other manufacturer to make two bathrooms practical and economical
for more and more American home owners.
There is a new prestige and profit in specifying two bathrooms with Briggs BeautywareAmerica's smartest plumbing fixtures.

Refer to Sweet's Catalog-Architectural File 24A, Light Construction File 9B, or A.I.A. File 29H

BRIGGS MANUFACTURING COMPANY - 300 Buhl Building - Detroit 26, Michigan


Advanced Design-All Briggs Beautyware is functional-distinctive in styling, exact in dimensions, formidable in construction, unequalled in utility features.


Engineered Installation - Specific time and labor saving features include free standing tubs with square straight endstwo bolt closets-jiffy assembly fittings.


Maximum Value - In precision manufac ture, in quality reputation, in important selling features - the intrinsic value of Briggs Beautyware is truly outstanding.

## for YOU

20 Grand Prizes to builders of 100 homes or less!

5 Grand Prizes to larger builders and trade-in reconditioning winners!
more than 150 Special Awards to Local Association Winners!

bigger, newer, more exciting CAPULCO DERBY A National Home Week Contest

## and your WIFE

10
glorious tropical days in Acapulco!
far more time to prepare your Derby entry kit!

A home to sell . . . a plan to sell it

## Honeywel

## in Acapulco

## For you and

 your wife



WIN WITH AGGRESSIVE MERCHANDISING AND A MORE LIVEABLE HOME
To compete in the 1955 Acapulco Derby, you simply develop an aggressive promotional and publicity campaign to encourage prospects to visit your exhibit home during National Home Week. The liveability of your exhibit home will be an important factor in the judging.
REGISTER NOW AND START PLANNING TO WIN!
Registration reply cards for the 1955 Acapulco Derby will be sent to all NAHB builder-members. When you register by mailing in your card, you will receive your Official Entry Kit. Your local association will also have entry cards and entry kits.
NEW! LOTS OF TIME TO ASSEMBLE YOUR ENTRY!
After National Home Week, you will have six weeks to assemble the material for your Official Entry Kit. Your kit, with descriptions and samples of your merchandising methods, must be in the hands of your Local Association Executive Officer by midnight, November 1, 1955.
CONSULT OFFICIAL RULES FOR COMPLETE DETAILS DATES TO REMEMBERI
Your entry card must be mailed by ....... September 1, 1955
National Home Week . . . . . . . . . . . September 10-18, 1955
Your entry kit must be in by . . . . . . . . . . November 1, 1955
Local Association Winners announced
December 1, 1955
National Winners announced at NAHB Exposition January 22-26, 1956
Honeywell Holiday in Acapulco Begins . . . . . . February 27, 1956


WHY THE ACAPULCO DERBY?
Honeywell has a vital interest in the continuing prosperity of the home building industry. Honeywell home products-such as Electronic Moduflow, Zone Control, and the new Fire Belle detection-alarm system and Tap-Lite decorator wall switches-maintain Honeywell's 70-year leadership in the field of automatic home controls. The ACAPULCO DERBY aids the prosperity of home builders by encouraging outstanding contributions in home design, better home-merchandising methods, and the interchange of ideas which builders find successful.

Honeywell
 Hawe Produtara Dinision

## ...and the

## right man is

## an old friend

## of yours!

* You know him well. He's your lumber dealer. And today, millions of prospective home owners are getting to know him-and YOU-through the pages of their favorite magazines.

In big national publications such as The Saturday Evening Post-Better Homes \& Gardens-American Home-House Beauti-ful-House \& Garden-Living-they are learning why you and your lumber dealer are the ideal source for quality workmanship and quality building materials.

Get this BALANCED INSULATION sales help! Today your lumber dealer can help you capitalize on a brand-new trend that is sweeping the country-and is making a powerful appeal to prospective home owners everywhere. It is balanced insulation-the right combination of Balsam-Wool ${ }^{\infty}$ Sealed Insulation and Nu -Wood ${ }^{\circledR}$ Insulating Sheathing, storm sash and weather-stripping to provide maximum fuel savings and greater summer comfort, too, in any home in any climate.
Waiting for you at your lumber dealer's is a complete balanced insulation kit. Here is everything you need to give your sales of quality homes an extra push. Ride the balanced insulation trend to more profit in 1955! Wood Conversion Company, 236-65, 1st National Bank Bldg., St. Paul 1, Minn.


## "Thank goodness, we found the right man, Sonny!"

"See that guarantee,. Sonny? It means this house has balanced insulation-the kind that keeps us comfortable all year around and saves your dad plenty of money on fuel bills. But we'd never have a guarantee like that if we hadn't found the only man who could offer it."

Who is the man that can offer YOU such lasting assurance of home comfort and fuel savings? He lives right in your community: your lumber dealer. He alone gives you a money-back guarantee of satisfaction when you insulate your attic with Balsam-Wool* Sealed Insulation. He alone, working with your builder, can provide the right combination of Balsam-Wool Insulation and Nu-Wood* Insulating Sheathing for balanced insulation benefits-for these products are sold by lumber dealers only.

Whether you build or remodel, remember, your lumber dealer knows and sells quality building materials. He knows quality builders, too-and can help you select the right one for your job. Wood Conversion Company, Dept. 236-65, First National Bank Building, St. Paul 1, Minnesota.

Send for Copy, "Facts About Insulation For Your Home"


BALSAM-WOOL
Sealed Blanket

Guaranteed


## FHA bars cheap homes in swank neighborhoods

FHA has warned its 75 field offices against insuring mortgages on new ho tses which would affect adjoining property adversely.
Officials explained they were re-emphasizing the point (always a cardinal basis of FHA underwriting) because of the increasing numbers of new homes going on scattered vacant lots in older subdivisions. FHA thinks some new $\$ 9,000$ models have depreciated the older, $\$ 25,000$ homes in the neighborhoods.

This revision of paragraph 318 of its underwriting manual, FHA noted, does not include "social or economic factors" as adverse.

## Warm-air heat industry warned on gyp installers

The warm-air heating industry is going to have to offer home owners more protection against gyp installers to keep from "floundering in a morass of public suspicion and discontent."

This is the view of the American Institute of Management, a nonprofit foundation in New York devoted to analyzing and rating managements. An eight-page examin.tion of the warm-air heating industry was published by the Institute last month.
Installation troubles. The greatest deficiencies in the industry, says the report, are found in the area of public policy. The industry is unavoidably dependent upon the retail dealer for the performance of its product; he can make or break both the furnace and public opinion about the individual company. The industry's research organization tries to keep dealers up to date on developments, but the fact remains that "unethical practices, chiefly by retail furnace installers and reparmen, are widespread."

The Institute was also critical of sale of furnaces by manufacturers directly to builders, bypassing company retail distributors. It complained: "Installation is left to the builder, who is probably inexperienced in installation practices, and responsibility for the performance of the installation is borne by netther the manufacturer nor by his franchised dealer." (If the association was aware of it, it gave no evidence of knowing that direct sales help cut the cost of heating installations by eliminating middleman profit, and thus help hold down the cost of housing to the public.)
Needed: diversification. The Institute also reported: "There is adequate evidence that the financial health of the industry is poor despite the continued growth in warm-air furnace sales during the past decade." Approximately 400 companies market warm-air heating equipment today; about 142 companies have entered the field-to manufacture or market units-since 1942. There have been many mergers, liquidations and strong competition. Net incomes have largely remained static or declined since the end of the war.

The industry does not need to establish new technical standards, thinks the Institute, but to enforce the ones it has. A great contribution would be the designation of a high-level heating industry advisory council. Such a group could work with municipal and state agencies on codes, establish sound standards and arbitrate grievances from dealers.

# Everyone saves with new Anaconda Pre-Formed Panel Grids 

New radiant panel heating coils made of Type L Copper Tube save contractors installation time and money . . save engineers time and effort in planning and designing radiant panel heating installations


NEW ANACONDA GRIDS* (PG ${ }^{\text { }}$ 's) contain 50 linear feet of Type L Copper Tube and come in two tube sizes-left, $3 / 3^{\prime \prime}\left(1 / 2^{\prime \prime}\right.$ O.D.) for ceilings; right, $1 / 2^{\prime \prime}\left(5 / a^{\prime \prime}\right.$ O.D.) for floors.


PG's ARE EASILY INSTALLED-A $3 / 8^{\prime \prime}$ PG weighs only 10 pounds, is easily lifted and propped in place, leaving worker's hands free to fasten straps. Here, metal lath goes under the PG's.


CEILING INSTALLATION ready for plastering. Note tube spacing narrows to $4^{1} / 2^{\prime \prime}$ c-c nearest the outside walls, and supply lines to panel circuits run next to outside wall.


DESIGN AND LAYOUT is simplified by Anaconda's free layout kit of printed, gummed PG scale drawings, which show precise layout of heating panels on blueprints.


A HOOK TYPE FASTENER offers another easy, quick installation method. Fasteners are partially set in joists, PG's are positioned, and fasteners driven home


NO SAGS OR DIPS in the tube lines permits a uniform plaster thickness, which means savings in time and materials.


MACHINE-FORMED PG's are compactly packaged 4 to a carton. One tube end of each PG is expanded so that it can be solder-connected in series without requiring fittings.


HEAT FOR THIS basement game room will be provided by $1 / 2^{\prime \prime}$ PG's embedded in concrete. For floor or ceiling installations the pre-formed Anaconda Panel Grid offers many economies.


SNOW MELTING SYSTEMS are installed easier and quicker with $1 / 2^{\prime \prime}$ PG's embedded in concrete.



## STEEL PRIME WINDOWS

Rusco Prime Windows - an entirely new concept in window engineering - were developed to make it practical for Architects and Builders to plan and construct better buildings while working with complete, finish-painted, ready-to-install window units.
Rusco hot-dipped galvanized steel Prime Windows are

## Engineered to help you PLAN better buildings!

made in Horizontal Slide, Vertical Slide and Fulvue Vertical Slide models in all standard sizes and shapes. When you specify Rusco-you eliminate costly, timeconsuming on-the-job painting, glazing, refitting and adjusting! And there are no sash cords, weights or balances to get out of order. They're complete the minute they go into the window opening!


The NEW RUSCO SCREEN and STORM DOOR COMBINATION (Model No. 55 RSD)

Made of hot-dipped galvanized steel -this new low-cost door has a fulllength Fiberglas screen, removable insulating sash optional, attached hardware, vinyl sill sweep, kick-plate and adjustable closer. Attractive, protective grille and house number or initial available at extra cost.

## Check these RUSCO advantages!

Made of Hot-Dipped Galvanized Steel for strength, long life and minimum maintenance. Zinc-treated, Bonderized and finished with baked outdoor-type enamel for protection against weathering.

- AVAILABLE WITH INSULATING SASH and Fiberglas screen, as an integral part of the unit. Insulating sash gives Rusco's exclusive MagicPanel(17) year 'round, rainproof, draft-free, ventilation.

BUILT-IN WATERPROOFED FELT WEATHERSTRIPPING ... Makes Rusco Windows completely weathertight, eliminates metal-to-metal contact, noise and rattling.

- POSITIVE AUTOMATIC LOCKING
of vertical slide units in all open and closed positions. Springbolt action.
- SMOOTH, EFFORTLESS OPERATION Rusco sash sections slide in a felt cushioneasily, quietly, without effort.
- SLIDING GLASS PANELS REMOVABLE FROM INSIDE FOR EASY CLEANING Sliding glass inserts slip out in an instant for safe, convenient, inside cleaning.

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# Prefabbers tell materials men what they want in new products 

All-purpose stress-grade lumber, wider wall board, new adhesives asked at Research Institute meeting

Prefabbers handed manufacturers a list of most-wanted new products at the 4th annual meeting of the Building Research Institute in Princeton, N.J.
Willard J. Worth, head of research and development for National Homes Corp., put in one of the biggest orders:

- An all-purpose stress-grade lumber. Present standard grades of Douglas fir and hemlock are based on use of the lumber, he pointed out, preventing interchangeability of pieces and promoting waste. "This served a purpose in heavy timber construction, but it is archaic in light wood framing. The universally used 2 x 4 in No. 1 and No. 2 grades theoretically cannot be used as a tension


WORTH member in bending. . . . O resting on $2 \times 4$ 's for a higher stress grade."

- New size of gypsum wall board. Standard widths are now $11 / 4$ '. $2^{\prime}$ and $4^{\prime}$. "We would like to see the same material available in $8^{\prime}$ widths," said Worth. "The obvious advantage would be the elimination of all joint taping." Partitions could conceal joints. He said National Homes alone might use 75 million sq. ft . of such factory-finished dry wall a year if it were available.
- A new adhesive. It should be resistant to water and decay, with quick-grab properties and a short pressure period. In combination with $8^{\prime}$ gypsum board, something close to an ideal interior surface could be achieved.
- Other wall materials. "We would be interested in any other dry-wall construction, such as wood fiber board, that would provide properties of dimensional stability, strength, etc.," said Worth.
-Interior trim and finish. How about moldings, bases, casings, etc. formed from metal or plastic and applied through a clip-on system to serve as raceways for wiring?

On the question of sandwich and honeycomb panels-which could lead eventually to "revolutionary changes in building methods" - Worth said he did not expect a run on these products "until such time as the necessary resins, which occur in large concentrations in many of these products, have reached the point of development that will allow radical reductions in price."
Floors and roofing. Robert Lytle, president of Modern Homes Corp., told manufacturers that too few of them realized the planning time necessary to get a new product into a prefab model. He wanted manufacturers to advise prefabbers on date of production, probable cost and qualities of expected new products. Lytle's specific' suggestions on what is needed:
-Interior wall finish material. Something
"comparable in cost and better in utility than either gypsum or fiber board." It should be lightweight, prefinished, easily cleanable and resistant to abrasion.

A metal roofing system. One that combines roofing, structure, insulation, ceiling finish and sound conditioning.

Built-in equipment. As applied either to appliances or furniture.

## Electrical heating methods.

- Roofing materials. Products that could be put on roof panels in the prefabber's plant.
- Flooring finish. A substance that could be applied in the plant, so that unsatisfactory joints would be eliminated in the completed house.
- Lighter-weight products. In order to cut down on trucking costs.

What about lumber? Roger Thyer, vice president of fast-growing Inland Homes, pleaded with the lumber industry to start improving its products as soon as possible. Lumber is the biggest single item in the packaged house, he noted, but because it "seems to be getting more expensive every year the door is wide open for more and more wood substitutes." (For examples, see p. 136.)
"Our company is constantly considering substitutes for wood," said Thyer, "but these substitutes must give us better functional properties, or be less expensive and more stable. The aluminum people are doing more with the extrusions used to make windows and moldings. The panel-board manufacturers have developed many new and beautiful interior finishes, acoustical tile, etc. But in my estimation many of these materials are too expensive. . . . The reason the public is buying more and more of these new materials is because the old materials have not kept pace with the demands of the discriminating buyer." Thyer asked for:
continued on p. 62


## Model rejected a year ago as 'too advanced' becomes focus of home show

[^4]Last year's winner, restored to builder popularity this year, was Jaime Saenz, a Notre Dame student, whose split-level (above, right) was chosen for its "simplicity and directness and its fresh approach in the matter of design. . . ."
How could a design termed unacceptable one year shoot into popularity the next? Frank Cantwell, the home show's managing director, explains: "The tremendous interest the home buying public has shown this past year in homes of contemporary design in Indianapolis has forced builders to change their thinking on design. For the first time in the 30 -year his tory of the show we had a local builder come in and ask if he could build the model home because it was of contemporary design."


## ...than Sold!

## ...when you use ALIGNALOCKS and ALIGNALOCK Sales Aids

Judge a book by its cover? Course not.
But your customers can judge . . . do judge a house by the brand name products they see in it. Particularly the locks!
New houses built with AlignaLocks change hands fast. From builder to buyer. From you . . . to your customers. That's because AlignaLocks are made by SARGENT . . . a name that's known and respected by everyone. And because AlignaLocks are recognized in their own right as "the Sign of a Well Built House."
So use AlignaLocks, like thousands of other smart builders. Use them throughout the house. Let your prospects see the Sargent name in every room . . . as a reminder of quality.
Every AlignaLock you install is guaranteed for the life of the house!

Does this lifetime guarantee impress home
buyers? Sure does! Customer comments... and actual home sales . . prove it.

You get maximum mileage . . . top benefits . . . from this Sargent AlignaLock Guarantee by using these free home-selling aids all around the house.
(A) . . . Hang copies of the Guarantee itself on the most used locks. (B) . . . On windows and other convenient spots, put the AlignaLock signs saying, "AlignaLock-the Sign of a Well Built House. Guaranteed by Sargent of New Haven." (C) . . Wherever they can be picked up in the house, leave the colorful AlignaLock folders. In addition to selling the Guarantee, these folders point out the AlignaLock features.

Help your new houses change hands fast and profitably ... with AlignaLocks and AlignaLock Sales Aids. Get in touch with your supplier today.

## Put more SELL in Every Room with ALIGNALOCK

AlignaLock . . . the quality lock in the low priced field . . . is available for every household function. In four beautiful finishes! Perfectly balanced! One-piece knob . . . big and graceful! Self-aligning assembly! Five pin tumbler protection! All interior parts machined or wrought steel. No other locks can be installed faster! Order AlignaLocks today from your supplier. Or write direct to Sargent \& Co., New Haven 9, Conn. Dept. 11-F.


## For Greater Strength

 Uniform Thickness and Color FILON The First Fiberglas and Nylon Reinforced Plastic Panel Ever Produced

## FILON Gives You Greater Strength

After many months of research, FILON is now produced with Fiberglas and Nylon strands for greater strength and uniformity. Actual tests show that an 8 oz . per sq . ft . FILON panel can support over 200 lb . load per sq. ft. on a 4 ft . unsupported span. (U. S. Navy standards are only 100 lbs . per sq. ft.)

## F/LON is Produced by a Unique Method

FILON is produced by a fully automatic, electronically controlled process, in the world's largest and most modern plant in its field. This method makes possible continuous lengths as well as all standard sizes of panels. Lengths are limited only by convenience in handling.

## F/LON is Uniform in Thickness and Color

Better impregnation and dispersion of pigments make FILON more uniform in thickness and color. Every FILON panel bears a label stating type, grade, and color ... your assurance of getting the quality you specify.
Write for our New A.I.A. Folder containing detailed drawings and technical data. Distributors and Dealers coast to coast, Canada, and other foreign countries.

## FILON PLASTICS CORPORATION

 FORMERLY PLEXOLITE CORP.2051 East Maple Ave., El Segundo, California, ORegon 8-7651 270 Park Ave., New York 17, New York, PLaza 5-5758 228 North La Salle Street, Chicago 1, Illinois - State 2-7444

A better additive for concrete. "Give us a concrete that can be poured at lower temperatures without danger of freezing."

- A new wall material. It must be impervious to shrinkage, swelling and warpage. "The place to start," said Thyer, "would be with a nonload-bearing, soundproof interior partition about $2^{\prime \prime}$ thick. These partitions would save floor space, be light to handle and easy to erect. I will say, at the risk of sticking my neck out, that the raw material would appear to be limestone gypsum."


## Prefabbers turn to stock market for expansion cash

One prefabber after another is going to the market for money. Recent public stock flotations have been oversubscribed. Says one prefab company president: "The hottest items on the stock market are uranium, automation and prefabrication." His chief concern: "If the public is burned by any fly-by-night firms offering stock for sale, the more celiable firms may not find it so easy to get money when they go to the market."

One of the latest established concerns planning to seek more capital via stock is Scholz Homes Inc. The Toledo firm hopes to float a $\$ 900,000$ issue, as soon as it wins SEC approval. The money will finance a tripronged expansion program.

President Don Scholz plans to establish or license plants in the Philadelphia area, Denver, Norfolk, and near Chicago "to be able literally to blanket the nation from all these points." He also plans to set up an acceptance corporation to provide builder dealers with smoother mortgage financing. This year Scholz expects to triple 1954's thousandhouse volume.

Add Pease Woodwork Co., Cincinnati, to the growing list of prefabbers building a line of more expensive quality houses. Pease's new flat-roofed, four-bedroom contemporary model, the Shorewood, was to open May 8 in one of Cincinnati's finest suburbs, Indian Hill. Builders: Kopf \& Kopf, who have built only in the high-priced range. Features: a strip of clerestory windows over an inside kitchen and bath, $1,450 \mathrm{sq}, \mathrm{ft}$. of roomy living space.

Inland Homes Corp., which has grown into a sprawling giant in less than three years, will introduce its first L- and T-shaped models next month. Inland, which stuck faithfully to rectangular houses in all its plans before, will increase house sizes in these models to 1,150 sq. ft . That is a sizable jump from its 1,000 sq. ft. rectangular models. First of the new series will be designed for partial basements. Later this year the Piqua, Ohio prefabber will introduce the same elevations in nonbasement designs.

Like Toledo Builder Don Scholz (see above), the H. C. Huber Construction Co. has found that local success leads to eventual national sales of its building package. Huber Homes, Dayton, Ohio, which built almost 500 houses last year (all FHA or conventionally financed with as much as $\$ 1,800$ down) and expects to build 1,500 this year, plans to offer a 1,060 sq. ft. package (three bedrooms, one bath, attached garage) on a national basis later this year. Huber has sold a brick-veneer model in Dayton for as low as $\$ 11,950$.


$\mathrm{A}^{\mathrm{F}}$FTER a highly successful sales test with a light conditioned model home, builder W. A. Simms is lightconditioning all 978 three and four-bedroom homes in his Dayton, Ohio development.

The lighting was planned with the help of The Dayton Power and Light Company. It includes lighted valances in living and dining rooms, special ceiling fixtures in all bedrooms and halls, vapor-proof shower tub fixtures, fluorescent vanitory light, fixtures over sink and range and under kitchen cabinets, three exterior entrance lights and twin reflector flood lights for the patio.

Mr. Simms says, "These Light Conditioning features are outstanding helps in winning prospects'approval for my $\$ 13,000$ to $\$ 15,000$ homes".


Biggest hit with the ladies, according to Mr. Simms, is this 19 foot lighted valance running the full length of the living room. Well worth its $\$ 24$ cost, he says, as a visible sales feature that sells the quality of his homes.

# "General Electric Light Conditioning helped jump my sales from one a week to one a day" 

. . . says W. A. Simms, builder of 978-home "Eastview" project


The adjustable-height ceiling fixture shown above can be lowered for dining, or raised out of the way when the room is used for other purposes.


Kitchen lighting includes not only an unusually attractive ceiling fixture, but also hidden G-E fluorescent lamps above the sink and below cabinets.
SELL YOUR HOMES FASTER, TOO with G-E Light Conditioning. For information, call your local electric power company or write: General Electric, Dept. 482-HH-6, Nela Park, Cleveland 12, Ohio.

## General (3) Electric




Tough and durable . . . withstands heavy roof traffic Temlok (1) Roof Deck assures an extra strong, extra rigid roof that needs no "babying" on the job. Back-andforth movements of a crew of husky carpenters, with their materials and equipment, won't harm it. You can use roof deck's strength to sell prospects, too. Show them a sample and point out the multiple layers of tough pine fiberboard. Explain how the boards are permanently laminated under great pressure with a superstrong adhesive that resists heat and moisture.

## BUILD STRONGER




Rain-Shield* finish guards against moisture damage Even several days of rain can't damage Temlok Sheathing exposed on the studs. The Rain-Shield finish waterproofs every square inch of Temlok's surface, while asphalt impregnation of each fiber insures moisture protection clear through the board. Carpenters can resume work almost immediately after rain has stopped.


Eliminates corner bracing Temlok Sheathing has triangular bracing built right into it. Because of its large size and exceptional strength, corner bracing can be completely eliminated when you build with $4^{\prime} \times 8^{\prime} \times 25 / 2_{2}^{\prime \prime}$ Temlok Sheathing. This size board provides over four times the building strength of horizontal wood sheathing. When you build with Armstrong Temlok, you know you're using a material that exceeds all Federal Specification strength standards for insulating fiberboard.

You never stop saving with


Gives weather-tight construction Roof deck is solid insulation clear through-complete insulation for even sub-zero climates. Asphalt impregnation makes each layer waterproof. Built-in vapor barriers eliminate condensation. Tongue-and-groove joints on all 4 sides assure the tightest possible fit and provide complete weather protection.

Holds heavy snows, supports 300 lbs. per sq. ft . Northern snows can pile up on roof deck all winter long without doing the slightest damage. It can't warp or sag. A special chemical makes Temlok Roof Deck resistant to mold, rot, and termites, too. Features like these add strength to your sales story.


## with TEMLOK



Turnbuckle tests prove extra strength Tightening the turnbuckle between these two wall sections causes the wall covered with wood sheathing to pull out of line. The section sheathed with Armstrong Temlok Sheathing stayed firmly in place. The big reason for Temlok's strength is the powerful binder that not only coats the individual fibers but also bonds them tightly together.


Has high nail holding power To pull a piece of Temlok Sheathing sideways from a nail driven $1 / 2^{\prime \prime}$ in from the edge takes a force of 187 pounds. Most other insulating sheathings give way at about 120 pounds. This extra strength is one of the big reasons for the growing popularity of Armstrong Temlok Sheathing with builders and home buyers in all parts of the country.

For full details on how to build a stronger house with Armstrong Temlok building materials, see your Armstrong lumber dealer or write Armstrong Cork Company, 3706 Sixth Street, Lancaster, Pa.

* T.M.


## Armstrong <br> SHEATHING • ROOF DECK - INTERIOR FINISH




BAT-WING HOUSE by George Ely (above) is one of the most unique homes ever offered by a speculative builder in the wilds of Florida or anywhere else. Ely has put up three bat-wings in a 14 -home project close to the Gulf Coast north of St. Petersburg, will add others this year. Another of his modelsa tri-level-rises like a huge aviary among the palms (right), comes complete with landscaped pathway to a concrete boat mooring. Ely put in sanitary sewers (almost unknown for 50 mi . around) and streamlined driveways, but left plenty of jungle charm.


## BUILDERS AT WORK:

## Bat-wings and tri-levels

Designer-builder George Ely of St. Petersburg is building some of the year's most advanced merchant designs in a remote part of Florida called Village of Picardy, 85 mi . north of St. Petersburg. In partnership with Samuel Pickard, retired cofounder of the Columbia Broadcasting System, Ely is offering two-story models, tri-levels (cut, above right) and the interesting bat-wing house (cut, left, above)-a two-level, triangular house with deep, screened patio. The remarkable project, which is close to the Paradise Point hotel-villa section in the lush growth of the Crystal River, includes 14 homes built and sold and orders for ten more on hand.

Ely sells the homes for between $\$ 20,000$ and $\$ 40,000$, includes freezer-refrigerator, landscaping, driveways and boat shelters in some cases. The houses are natural-no paint, plaster or wallpaper -built of cypress or redwood, aluminum and steel, plastic laminates, etc. All but the raisedgrade model have a light-aggregate concrete deck to which a steel frame is bolted, supporting (in most cases) an I-beam which holds the tongue-and-groove white cedar roof. In all designs, every area of the house is open to the screened patio section, avoiding costly in-line construction.

## Giant subdivisions

Carl R. Sams, 37-year-old Detroit developer, said his proposed 10,000 -home community in Sterling township was "progressing nicely." But other realty men there wondered if the big deal, announced in a huge story in the Detroit News in January, was not being held up by refusal of a few strategically-placed farmers to sell land in the center of the eight-square-mile tract. Sams admitted he was having trouble "with a couple of farmers," but nothing that could not be ironed out. "There should be no doubt about the new development," he said. "When we get the drainage plans, we will be ready to move." Other plans from big developers:
Trousdale Construction Co. of Los Angeles said ground would be broken early this summer for 2,500 low-to-medium-priced houses on 2,200 acres in Ignacio.
Four big developers executed one of the biggest property transactions in California history: purchase of the 875 -acre Platt ranch in the San Fer-
nando Valley for $\$ 6,120,000$. The buyers: Richard Diller, Irving L. Kalsman, Louis Boyer and Ben Weingart. They plan a $\$ 150$-million community including 6,000 homes, a shopping center and recreation areas.
Parkway Housing, Inc. of Annapolis, Md. asked zoning authorities for approval of plans for a $\$ 25$ million project on 105 acres in Anne Arundel County near Ft. Meade.

## Builders back Homes for Korea

NAHB and building materials manufacturers are laying ambitious plans to become godfathers to hundreds of South Korean families.
By supplying cash, materials and technical skills, builders and producers will help build a pilot project of 100 housing units, first of what the. sponsoring American Korean Foundation hopes may grow to 1,000 or 2,000 US-financed homes.

The first houses are intended not only to demonstrate new designs, but also to teach mass-production methods in a country where builders have never put up more than one house at a time.

The new program is expected to be the chief stimulus in providing new housing for the million Koreans now living in caves, packing boxes, tincan shacks or with no place to live at all. Since Korea is widely considered the US showcase in Asia, the housing program is to become a vital anti-Communist demonstration.
Co-chairmen of Homes for Korea are NAHB President Earl W. Smith and New York Realtor William Zeckendorf. More than a dozen building industry associations are backing the program. Their representatives met recently in New York to hear Zeckendorf, NAHB First Vice Pres. Joseph Haverstick and retired Gen. James Van Fleet, honorary chairman of Homes for Korea outline the program and show models of it (photo, below). Model houses to arouse public interest and help get financial backing will be built by NAHB
(continued on p. 70)


KOREAN HOUSING FOR COMMUNITIES OF 'ORIENTAL SYMMETRY WITHOUT MONOTONY'


[^5]
## HOMES SELL FASTER WITH



## BUILT-IN UNITS



## PROSPECTS KNOW THE NAME



## THAT'S WHY I INSTALL THEM

Builders all over the country are saying it! Caloric built-in units are terrifically successful silent salesmen. They really make prospects reach for their pocketbooks and buy houses.

Caloric built-ins are brilliantly styled and available in a wide variety of colors and finishes to harmonize with any decorating scheme. Install top burners in island, straight line or peninsula. Install oven-broiler unit wherever convenient. Let the housewife see for herself how she'll save miles of steps.

Oven-broiler controls are at eye-level . . . easy to see and easy to use without stooping. Other great features include smokeless broiling, seamless porcelain enamel oven and broiler, instant lighting top-burners, fully automatic oven and broiler lighting, exclusive Bevelock sealing device eliminating rubber gaskets. These are great built-in units. They sell and sell and sell for you.

They're advertised in Better Homes \& Gardens, Small Homes Guide and Home Modernizing. Send coupon today and get full information on the most sales-provoking line of automatic built-in gas ranges ever built.

## CALORIC APPLIANCE CORPORATION



get more value...give more value with ALFOL ALUMINUM FOIL
HOUSE INSULATION BLANKET
best winter-summer insulation Alfol reflective insulation is unsurpassed for all-year efficiency. Stops $95 \%$ of radiation and checks the other forms of heat transfer. Has a proved record of cutting winter heating costs $30 \%$ or more, keeping rooms $15^{\circ}$ cooler in summer. Millions of feet time-tested in FHA-approved buildings.
ideal protection from moisture damage Alfol is the best vapor barrier. Its continuous length and stud to stud coverage bar water vapor from cold wall areas, prevents harmful condensation.

easy, fast applicartion Alfol is the easiest full-protection reflective insulation to apply-goes up without special care to prevent tearing. Alfol has every application advantage over bulk-type insulations-no muss or irritating dust: "takes the itch out of insulation."


Iow applied cost A 500 -foot roll of Alfol takes $1 / 20$ as much storage space and weighs $1 / 12$ as much as its bulk type equivalent. Add this to the ease and speed of application, and you slash handling and installation costs!


Write for details! Write today for this illustrated bulletin giving advantages, full description, efficiency data, and application details of Alfol reflective insulation-the product of progress, in temperature and moisture control!

members in several parts of the country, the first in suburban Westchester County outside New York City and probably another in Washington, D.C.

The first group in Korea will include self-help shell houses, row houses and some three-story walk-ups. They were designed by six Korean architects working in New York with Architect I. M. Pei of Webb \& Knapp.

Architecture of the houses will be in the Korean style (see p. 67) and site planning, according to the foundation, will show "oriental symmetry without monotony." The homes will be fireproof, ratproof and flakproof. The ondol heating system is definitely Korean-a small fire not only cooks food but also warms the sleeping floor. (No furniture is used.)

After the first 100 units are finished it is hoped that enough money and materials can be secured in this country to build many more. Materials needed include wood and wood products, masonry, paper, plastics, hardware, nails, glass, asphalt products, paints, plumbing supplies, trucks and many other items. Donations (both cash and materials) are tax deductible. Checks should go to American Korean Foundation, 270 Park Ave., New York 17.

## Land for \$100 down

Walter T. Shirley, a breezy Chamber of Commerce man billed by his New York publicity men as "the nation's leading land developer," has teamed up with National Homes Corp. to push plans for embryonic Shirley, Long Island. Shirley's private, 10,000 -acre town, about 75 highway mi. from midtown Manhattan on the Island's flat South Shore, already has a scattering of population. Of some 12,000 persons who have purchased plots of land there in the past ten years, about 3,000 -including summer residents - have built houses. Landman Shirley, who now


SHIRLEY has a franchise from Na tional Homes, hopes to inspire other owners (and future buyers) to add hundreds of prefab homes to the development in the next five years.

Shirley is 59 , has enjoyed a gamut of experience from song-and-dance work in vaudeville to golf with the Duke of Windsor. (He still plays golf with the Duke, as a matter of fact.) He went into land-buying in Long Island in 1938 with purchase of 1,000 acres of the William K. Vanderbilt estate, including the last mile of the millionaire's private speedway. He passed the $\$ 1$-million mark in land sales in 1943 and has been growing ever since.
Terms to buy a piece of Shirley land are easy. A $1 / 4$-acre plot costs $\$ 450$; the purchaser pays $\$ 100$ down and $\$ 3$ a week. The over-all look of the place depends, of course, on what sort of houses customers contract for. (Shirley, incidentally, has provided 100 mi . of roads, a post office building and a 20 -acre site for a school.) To date new construction in Shirley, what with the summer lodgings and all, has been mediocre. If National homes go up in volume (only 103 of the 9,000 property owners had bought one by late in April) Shirley should take a turn for the better.

A big prefab project was also under way in the Chicago area. Leonard W. Besinger, a conventional builder before he started work on his 2,700acre Meadowbrook project near Elgin, plans to

## Styrene wall tile suggests new treatments for an entrance hall



A unique combination of qualities has long made styrene plastic tile a preferred surfacing material for bathroom and kitchen walls.
Today these same characteristics-low water absorption, durability and lightweight-natural luster, wide color range and low cost-are extending the application of styrene wall tile into other parts of the house.
Suggestive of its new decorative and functional possibilities are these sketches for two entrance halls.
In the traditional foyer (left), styrene tile creates a dado and door frame that will not be damaged by rain-soaked coats and umbrellas. Its rich coloring can be harmonized or contrasted with wall paper, floor and appointments.

In the contemporary entrance hall (right), styrene tile faces an entire wall without reinforcement. This material needs no special care or attention. Damp-cloth cleaning will preserve its lustrous beauty year after year.
Wall tile made of Lustrex styrene plastic is carried by most tile contractors in solid pastel colors, deep tones and marbleized effects. Standard tiles are $414^{\prime \prime} \times 44^{\prime \prime}$ and $8^{\prime \prime} \times 8^{\prime \prime}$. Special molded pieces are also available for corners. Permanent installation is quick and easy over wood, plaster or wallboard, and similar wall surfaces.
Monsanto Chemical Company, Plastics Division, Dept. HH-6, Springfield 2, Mass.

## now... better than ever



# K Ku get more for your money 

Figure it any way you want-new Keybead is by far your best value in corner bead.

New Keybead nose is 23 -gauge steel. No other standard corner bead provides such protection against shock. The reinforcing mesh flanges are tough and strong, make new Keybead very rigid, easy to true up. New Keybead is straight end to end-no waste. And the nose is double electro-galvanized against rust, including all edges.

With Keybead you get a solid corner! A corner completely filled with plaster. The plaster flows through the open mesh flanges easily, completely embeds every wire . . . does not break the bond of plaster with the gypsum lath. Corner has reinforcement of heavy gauge steel wires running in every direction.

KEYBEAD IS FAR LOWER IN COST THAN ANY OTHER BEAD OF EQUAL WEIGHT!
Only Keybead is available in your choice of Galvanized or solid zinc nose. Use zinc outside, even in salty atmosphere. Use it inside where corrosion is a problem. For zinc nose-ask for "KEYZBEAD."

You do get more for your money with new Keybead. Ask for it by name!

## better yet... use all 3 keys to stronger plaster



1. Keymesh woven wire galvanized reinforcing lath-applied oyer the gypsum or insuloting lath on the entire ceiling; for highest quality, over all walls; foo. This nerwork of mulfidirectiond reinforcing increases strength; increases fire safety $50 \%$. Keymesh assures a uniform thickness of plaster, and guards against cracks.

2. Keybead woven wire golvanized reinforcing lath with the precision-formed bead - applied at all outside corners - pr zinc nose for outside applications. Qpén mesh of Keybead wings permits plaster to completely embed steel wires. Full, solid comers result. Available in standard lengths; easy to splice.

3. Keycorner pieformed-forcorners, convenient width, woven wire galyanized reinforcing lath applied at comers, joints and ceil-ing-wall junctures. Fits snugly in corners when you flex it. Lies flat, foo, for stripping wherever required. Same multidirectional reinforcing as Keymesh for maximum crack resistance.

## Holy Smoke! what a cuonderful new idea

Eliminates Old-Fashioned Door Knobs
mechanical and design patents pending

## REVOLUTIONARY NEW CONCEPT

 IN DOOR HARDWARE Opens doors with the fliek of a finger- Available with or without locking mechanism for all inferior doors


## NEW MODERN DESIGN



Now! For the very first time, here's a door latch with flush, smooth streamlined surfaces that are in keeping with modern architecture. It has no knobs to damage walls . . . eliminating the need for door stops.

## NEW EASE OF INSTALLATION

To install a Soss Lev-R-Latch all that is necessary is to bore 2 holes and insert 4 screws. This can be done so easily and so quickly that labor costs are cut as much as $1 / 3$.

## NEW LOW COST, NEW HIGH QUALITY

This Soss Lev-R-Latch has fewer parts than any other latch set. Consequently, many of the operations that are necessary to produce ordinary latch sets have been eliminated. This is why the high quality Soss Lev-R-Latch is so low in cost.


## SOSS Manufacturing Company

 P.O. Box 38, Harper Station, Dept. 22Detroit 13, Michigan
Please rush me complete information and prices on:
$\square$ The startling new Soss Lev-R-Latch $\square$ The world-famous Soss Invisible Hinge

I am a dealer $\qquad$ jobber

NAME $\qquad$
FIRM NAME
ADDRESS $\qquad$
city STATE
sell 1,100 US Steel Homes' units there. About 800 prefabs of other manufacturers are already occupied in Meadowbrook. The goal is 8,200 houses.

## How to make ads pay

Unusual use of newspaper space and radio time has paid off handsomely for two builders.
Jack Brightwell, president of Brightwell Construction Co. of Danville, Va. spent $\$ 92.72$ for radio advertising and sold 24 homes. The campaign was beamed at Sunday drivers. It consisted of three transcribed "tours" of Brightwell's model house plus nine spot announcements. As soon as the first program was on the air, says Brightwell, cars began arriving at the model.

In New Haven, Conn. Lomas \& Nettleton Co. sold 50 houses on opening day and $\$ 2$-millionworth of homes in ten days after a concentrated splurge of promotion. The firm bought six $1 / 3$ page ads on six different pages of a local Sunday newspaper-in the main news, sports, society and real estate sections to assure readership by all types of readers. Designer-builder F. J. Linehan Jr. called results "fantastic": 5,000 people inspected the models on opening day. The follow-up was a week of four radio spots daily adjacent to weather or news programs. House price bracket: $\$ 10,500$ to $\$ 13,500$.

## Staten Island faces a boom

Building activity on Staten Island (which is still full of farms and woods although it is part of New York City) was likely to speed up with construction of the projected Narrows Bridge connecting the island to the Borough of Brooklyn. Chances were the increase in deed and mortgage recordings -up $15 \%$ the first quarter of ' 55 over last yearwere simply part of the general housing boom. But recent land sales showed what news of an expected increase in population could do. At a recent foreclosure sale by the city, acreage was selling for three times the minimum upset price. Other land was at least a third up.
About 205,000 people live on Staten Island, a half hour's ferry trip from the lower tip of Manhattan. The population is expected to more than triple in the next 20 years. Meantime, homebuilders have been meeting a demand for about 600 new homes a year. They now plan much more than this; project announcements are $50 \%$ above what they were last year. Improvement of raw land is a more-than-average problem on Staten Island, which comes under New York City's stiff building code and is often composed of clay soil that makes septic tank installation difficult. How expensive a house to build was another question in builders' minds. To date the average Staten Islander's income has kept him in about the $\$ 13,000$ bracket as far as new homes went. Informed real estate circles think it would be hard to build for much less than this on the island.

## Kenbo on the move

Kenbo Corp. has done so well with a contemporary development in Monterey Park, Calif. (a total 634 homes expected within the next few months) that it planned to push into two other communities. More than 200 homes are planned for East Whittier- 10 mi . east of industrial Los Angeles, among the orange trees-offering a choice of designs by Architects Burge \& Roach, who did the Monterey Park job. The company also will start homes in La Cañada in the $\$ 18,000-25,000$ bracket (between 1,300 and $1,800 \mathrm{sq}$. ft.) designed by Victor Gruen \& Associates.

# EXTRA: $*_{* *}^{*}$ SHOW-HOUSE ${ }_{*}^{*}{ }^{*} *$ SECTION $20,000,000$ prospects will see this 



It's the newest model home as presented by the Editors of SHow-House in full color double page spreads in the June 11, 1955 Saturday evening post and July, 1955 Living for young HOMEMAKERS-a vast $20,000,000$ audience!
Room-by-room, prospects will study this striking new SHow-House! They'll read about the top nationally-advertised products our home-planning experts recommend...Ruberoid roofing and sidewalls, "Overhead Door," Alumaroll awnings, Bermico pipe, Filter Queen sanitizing system, Bilt-Well kitchen cabinets, Revco built-in refrigerator and freezer, Preway built-in range, Stanthony ventilating hood, Janitrol air conditioning.
What's more, prospects will hear about sHow-HOUSE again and again! It will be aggressively advertised and promoted by these 10 manufacturers and their thousands of dealersmany of them in your area!
So hitch your wagon to a sales-star! Feature SHow-HOUSE products in your new homes! Send for the FREE plans of this exciting "SHOW-HOUSE"-yours for the building! But, write today-our supply is limited!

SHOW-HOUSE, 501 Fifth Avenue, New York 17, N.Y.

MANUFACTURERS! 26,500 inquiries asking for more product information were received from last issue of show-House alone! This home-hungry audience plus dealer and builder enthusiasm can be yours! sHow-HOUSE model homes are being planned for Fall POST and LIVING insertions now. Write for details today!

FREE TO BUILDERS! Accuratelyscaled Sketch Plan of this show-house. Contains principal elevations and floor plan. Quantity limited so...
Jule R. von Sternberg, A.I.A., Executive Editor
SHOW-HOUSE, 501 Fifth Ave., New York 17, N.Y.
Rush me FREE sketch plans of your SHOW-HOUSE.
I am interested in: $\square$ constructing such a house
$\square$ using it for ideas
NAME
COMPANY_TITLE
ADDRESS


More often than not, the difference between this sign MODEL HOME and this SOLD is the sales appeal of the building materials used in the house. Builders with sales on their minds specify Ruberoid's revolutionary new Lok-Tab asphalt shingles for the roofs of better new homes everywhere.

Lok-Tabs' features add important extra sales value to new homes. First, they offer a whole

The RUBEROID co.
new conception in roof beauty: New decorator colors, modern, random-spaced, straight-line texture and built-in shadowlines. Second, there's the locking tab at the center of each butt to make them wind-safe. Lok-Tabs' exciting new beauty plus their exclusive wind safety is a combination that can't be beat for sales value.

See your Ruberoid dealer today and prove to yourself why a Lok-Tab roof is an important sign of a better new home.

## ...EXTRA: ***SHOW-HOUSE ${ }_{*}^{*}{ }^{*} *$ SECTION



## "Janitrol conditioning

## is the finest

comfort insurance a builder can buy"
W. S. BECKHAM

The Glenbrook Co., Builders, Birmingham, Alabama

As a builder of fine quality houses in suburban Mountain Brook, Mr. Beckham has insisted on construction and equipment features that will assure buyers every possible comfort.

Because Janitrol meets every high standard comfort with dependable and economical performance, Janitrol heating or year 'round conditioning is used in all his homes completed or to be built.

It's just plain good business sense for architects and builders to plan and install heating systems with the utmost care . . . a house is only as good as the comfort that's built into it.

To protect yourself, your reputation and your customers' satisfaction, you can't afford the gamble of buying heating on price alone.

Remember your customer is paying for assured comfort and he depends on your sound judgment to provide it . . . you can with Janitrol!


Homes in the Glenbrook development range from $\$ 28,000$ to $\$ 40,000$.
Note clean and compact installation of Janitrol Win-Sum Twins. Heating contractor, Chas. E. Beck, Owner of Heating Service Co., Birmingham, Alabama.

## SAME TYPE INSTALLATION RECOMMENDED

 FOR JUNE BRIDE'S SHOW HOUSE...EXTRA: $*_{*_{*}^{*}}^{*}$ SHOW-HOUSE ${ }_{*^{*} * *}^{*}$ SECTION


# SHOW-HOUSE 

## in the house that's built around the kitchen

## SHOWS Rilliniv



America's most beautiful Bilt-Ins gas and electric

Because a built-in range makes a home more saleable, because PREWAY emphasizes quality and accents low price, "Show-House" chose Wallchef and Counterchef Bilt-Ins to headline their home built around the kitchen. The more you know

Patents Pending

Illustrations courtesy of "Show-House"
about these gas and electric units that are so simple to install, the more you'll realize that these fully automatic, featurepacked beauties are for you, too.

Investigate the colors, the models available from the distributor in your area; then have him use his pencil to show you
how you can put a better kitchen in the homes you are planning at a cost that will surprise you. And back of these advantages is the merchandising punch of "Show-House" - in the POST, in LIVING, in BRIDE-TO-BE - yours to use as a great selling tool.

Strategically located distributor inventories from coast-tocoast assure deliveries to meet your working schedules. Write today for full information and the name of the distributor nearest you.


## ...EXTRA: $*_{* *}^{*}$ SHOW-HOUSE ${ }_{*}^{*}{ }^{*} *$ SECTION

## ${ }^{*}{ }_{*}^{*} *$ SHOW-HOUSE $\left.{ }_{*}^{*}{ }^{*}+{ }^{*}\right)$

The Stanthony "Hospitality House, now under construction on the grounds of the world famous Shadow Mountain Club at Palm Desert, California, is a refreshingly new approach in home design. California Kitchens, Inc., designers of custom kitchens, collaborated with William M. Bray, AIA, outstanding West Coast Architect, in creating a house designed around the kitchen.


We are proud that the plan and design of the Stanthony "Hospitality House" was selected by the Editors of "Show-House" for "Show-House" Number 12.


Compare these outstanding features and you'll agree
Stanthony is "the best way to ventilate a kitchen"


SAVES CABINET SPACE. Center discharge through standard $10 \times 31 / 2$ inch vent at rear of cabinet saves valuable shelf space, and eliminates rights and lefts when reversing plans.


EASIER TO INSTALL. Self contained, completely assembled, with lights, switches, and blower housed within the hood, all prewired to one pull box. No wall switches required.


EASIER TO CLEAN. Washable filters of aluminum foil prevent grease accumulations in blower and housing. All welded construction, smooth baked enamel finish, and flush light lens make Stanthony the easiest to clean.

Callyour nearest Stanthony stocking pointor writedirect tofactory

Phoenix
Midland Speciality Company CALIFORNIA

Burbank
California Kitchens, Inc.
Fresno
General Electric Supply Company
Los Angeles
R.C.A. Victor Dist. Co

San Diego
Morrison Supply Company, Inc.
San Diego
Howard Palme
San Francisco
Pioneer Appliance Company
COLORADO
Menver
CONNECTICUT
East Harfford
Roskin Distributors, Inc.

DIST. OF COLUMBIA
Washington
Douglas Distributing Company

## Jacksonville

Jacksonville
Florida Radio \& Appliance Corp.
Miami
Florida Radio \& Appliance Corp.
Tampa
Florida Radio \& Appliance Corp.
GEORGIA
Atlanta
Chas. S. Martin Distributing CO
IOUISIANA
New Orlean
New Orleans
MARYLAND
Baltimore
Joseph M. Zamoiski Company
IDAHO
Boise
General
Appliance Company
INDIANA
Indianapalis
Radio Equipment CO . Inc.
Radio Equipme
Radio Equipment Co. Inc.


NEW JERSEY Newark T. A. OLaughlin Company, Inc. Albuquerque
McCollum-Law Distributors
NEW YORK
Rochester

Rochester
R.C.A. Victor Distributing Co Syracuse
Morris Distributing Company, Inc.
Binghamion
Morris Distributing Company, Inc.
NORTH CAROLINA
Winston-Salem
Mercury Distributing Company
OHIO
Clevelan
Duge Distributing Company Cleveland
Lehan Distributing Co. Columbus
Thompson \& Hamilton, Ince
Dayton
Thompson \& Hamilton, Inc.
Toledo

OKLAHOMA
Oklahoma City
Townley Metal \& Hardware CO.
OREGON
Portland
Portland
Lou Johnson Co. Inc. PENNSYLVANIA
PENNSY
Erie Williams Company
Harrisburg Harrisburg
Peirce-Phelps, Inc Philadelphia Peirce-Phelps, Inc. Pittsburgh J. A. Williams Company RHODE ISLAND Providence Tri-State Wholesalers, Inc TENNESSEE
Nashville
McWhorter, Weaver \& Company TEXAS

El Paso
Crouch Appliance Company Fort Worth Fort Worth
Morrison Supply Company

TEXAS (continued)
Houston
The Edwin Flato Company
Lubbock
Morrison Supply Company San Antonio
South Texas Appliance Company
UTAH
Salt Lake City General Appliance Corporation
VIRGINIA
Richmond
A. R. Tiller Corporation

WASHINGTON
Seattle
Northwest Kitchens, Inc.
Spokane
Columbia Electric \& Mfg. Co.
WEST VIRGINIA
Huntington
Tri-State Appliance Company
WISCONSIN
Milwaukee
Milwaukee
Roth Appliance Distributors

CONTHONY CORPORATION, 5341 SAN FERNANDO ROAD WEST, LOS ANGELES 39, CALIFORNIA

## ...EXTRA: $*_{*}^{*}$ SHOW-HOUSE ${ }^{*}{ }_{*}^{*} \star$ SECTION

Industries

## associated with <br> Building <br> BUILD UP <br> with a 33 page advertising increase...

 HOMEMAKERS

6 Reasons why
Sales-minded advertisers in this important classification, built for LIVING a 33.68 page advertising gain, in 1954. And they are maintaining the trend. Why this industry backing? It is recognition of the reality of LIVING, of the powerful part LIVING plays in reporting editorially, realistically, what's new, what's right, what's available - in homes, in building materials, in equipment.

It is industry recognition of the fact that LIVING leads all home magazines with the greatest number of pages and the highest percentage of total editorial content in "Building" classifications for the year 1954.

2,800,000 readers look to LIVING because of its editorial reality. Thousands of builders and retailers hook up with LIVING because of its realistic promotion themes - ideas that pay off. Scores of advertisers lead with LIVING because of its demonstrated selling vitality at point-of-purchase.

LIVING's young readers will buy more of your product if you cultivate them in the only magazine edited exclusively for Young Homemakers - your largest buying market.

Build your advertising house around LIVING . . . and build more sales.

Show-House picked LIVING exclusively in the home field:
1
Young Homemakers buy $73.4 \%$ of the nation's homes - 70.1\% of all furniture and household appliances ...
2
Young Homemakers are in the
"Age of Acquisition." They buy because they must buy. Older homemakers must be sold. . .

## 3

LIVING'S Young Homemakers have unusually high incomes far above the national average . .

## 4

$85 \%$ of LIVING'S readers have been married less than 10 years. $92 \%$ of the children in LIVING'S families are under 10 years of age . . . and the families are expanding in numbers...

Today's Young Homemakers are realistic.
They don't indulge in the fantasy of houses and furnishings 'way beyond their reach ... they regularly respond to the realistic, helpful, do-able pages of LIVING ...

More and more, realistic advertisers are selling through LIVING. Because they know there is only one magazine that tailors its every editorial page to accommodate the needs, desires,
aspirations of America's Young Homemakers - (the nation's largest market) at realistic price levels.

## That's LIVING for <br> Young Homemakers!

## ...EXTRA: $*_{*}^{*}$ SHOW-HOUSE ${ }_{*}^{*}{ }_{*}^{*} *$ SECTION

## What a lot to build a

 *** SHOW-HOUSE, ***On June ll, 1955, the twelfth two-page spread by SHOW-HOUSE will run in The Saturday Evening Post . . . and only in the Post, among all weekly magazines. There's never been any question about which weekly was the right place for SHOW-HOUSE. For the Post reaches the top best-customer families in America. And builders know it. (Last year, the Post carried $\$ 6,421,746$ of building-products advertising-more than any other magazine and over twice as much as the next leading weekly! ${ }^{1}$ What's more, week after week, half a million more people put down their money for the Post than for the next general weekly ${ }^{2}$. It's a great place for any advertiser to build more sales!
$\begin{array}{ll}\text { 1. P. I. B. figures }-H 500 . & \text { 2. A. B. C. }\end{array}$

## ...EXTRA: $*_{*}^{*} \star$ SHOW-HOUSE ${ }_{* * *}^{*}$ SECTION

## BILT-N|ELL camers an w wnows <br> ...selected for use throughout the glamorous California "SHOW-HOUSE" No. 12!

See it in the June 11 issue of Saturday Evening Post . . . and the July issue of Living for Young Homemakers



SHONN-HOUSE says, "How do you like our 'Living Kitchen'?" . . . with its banks of BILT-wELL Cabinets, of Ponderosa Pine with furniture finishes. These are among the finest cabinets made. So sturdy . . and so attractive they make our kitchen into one of the most inviting rooms in the house.


Smart, modern bILT-WELL cabinets for the kitchen and all other storage needs in the home come completely machined and pre-fitted, ready for quick, easy, economical assembly and installation. A hammer and screw-driver are all the tools required and a complete kitchen installation can be made in a matter of a few hours

Build Well
wh BILTM WELL
Шणण्ण شणन
See other new, practical applications of BILT-WELL Awning Windows and Multiple-Use Cabinets on the other pages of this special SHOW-HOUSE Section.


SHOW-HOUSE says, "Carr, Adams \& Collier Company make the BILT-WELL Awning Windows used in our house. They are soundly built and beautifully designed."

When SHOW-HOUSE decided to feature a modern, California "outdoor-indoor living" home in their series of contemporary American dwellings, they had little difficulty in choosing the windows and cabinets that best suited their plan. bilt-well Awning Windows and Bilt-well Wood Cabinets have long been favorites with builders in California. The clean, horizontal lines of bilt-well Awning Windows plus their "arrangement flexibility" make them the perfect window for that "low, long look" so popular in the California Ranch-type home. And bilt-well Multiple-Use Cabinets, with their warm, natural furniture finishes, fit in beautifully with the show-hOUSE outdoor-indoor living theme. The same
cabinet design and the same soft, natural Ponderosa Pine finish could be carried throughout the house . . . from the "living kitchen" to the living room . . . from the family play room to the utility room. Adding a continuity of design and tone that lends an individual personality to this modern "dream home."
bilt-well Awning Windows and bilt-well MultipleUse Cabinets are as much "at home" in the $\$ 8,000$ house as they are in the $\$ 80,000$ model. Their simple assembly and time-saving installation features make them the first choice of home-builders, whether they build 1 or 1,000 .

Ask your millwork supplier for full information on bILT-well Products for the home, or write for catalog.

BILT-WELL Line of Outstanding Woodwork . . . BILT-WELL WINDOW UNITSAwning, Double Hung, Casement, Basement, Storm and Screen, Gable, Sash \& Louvers . . . BILT-WELL CABINET UNITS-Kitchen, Wardrobe, Multi-Purpose, Corner China, Mantels . . BILT-WELL DOORS-Interior, Exterior, Combination, Garage, Screen, Flush, Entrances.
Ask your millwork supplier for full information on BILT-WELL Products for the home, or write for catalog.

## BILT-WELL Woodwork

Box 658-Dubuque, lowa
Manufactured by CARR, ADAMS \& COLLIER COMPANY
Established 1866

BILT-WELL AWNING WINDOWS provide the utmost in flexibility of window arrangement. They can be used as:


A Swing-out Awning Window


Combination AwningFixed and Hopper Units

Shipped as complete window "package" with everything necessary for quick, easy installation.


A Swing-in Hopper Window


A Swing-out A Swing-out
Casement


Calling all Builders!
Enter the big 1955 BILT-WELL BUILDERS' CONTEST. Win a free trip to Europe, Bermuda, Mexico or Hawaii. Every builder who enters will win a prize. Ask your dealer about it or write Carr, Adams \& Collier for complete Contest Kit.
feafured in

## SHOW-HOUSE

 Saturday Evening POST, JUNE II LIVING For Young POST, JUNE IIBRIDE To Be, FAll ISSUE

## A new ki of selling

## People no longer build homes, ing's transformation from a homes, they buy

 As a result, praft to an industr sume the additionacers of building produes acceptance for their role of merchandisers, age these product products amo uers. The public. These pucts in today's nong the professi sell the materials essionals not only homes- for t Becaud equipment which they als Because more of these go into the HoUse \& HOME than any promotionally-minde the producers are mery other busine minde readers of Ing pages of Handising their magazine prospects - HOUSE \& HOME hous \& HoMe. Then con This merica's homebuying millions pre-selling th This merchandising role of ized by an inillions. ized by an incresing role of House \& promote their sional audience. consumer influence national consumer mas Homebuilding, like available sales tool to mery other industry, dollar. Producers to meet the compeustry, is mustering zines have found their agencies, and nation for the cons selling job in their most thes, and national consumer

## Homebuilding's great new merchandising medium

d Refrigerafor to the homm and SALES-APPEAL foncrionol boout you design and sell! tor and a 6 idea includes sight. Thi ances for little cu . ft . separate 8.4 cu . ft marvelous No installatle more than the freezer. Two repigeraaway into any problems! price of one. appliplete flexibility of of arra. Only Revco Bilt-Ins. trosting refrigerator arangement. Tco gives you tuck freezer, for tallest bottlelves in the automatic style shith handyles or smalle door-provideaction. shelves and famoll-out draw packages provides Choice of famous Revco frawer, has open




## Here's that

## extra space

## home buyers are demanding...

... at garage construction cost
made possible by the weathertight construction and easy operation of


Workshop, playroom, laundry space, storage area-plus complete car protection-at half the cost of a family room in the home! With The "Overhead Door," you can give buyers more for the money, keep homes priced for the market. This "extra room" will be only as weathertight as the garage door you choose, only as convenient as the garage door is to open and close. So buy the best door, famous for 34 years! Expertly installed, promptly serviced, relieving the builder of all responsibility!
For Utmost Convenience-the ULTRONIC Door Opener ! A button on the car dash unlocks and opens door, turns on lights, closes-or stops-the door, turns off lights. Priced less than many other household appliances. A terrific selling feature!

OVERHEAD DOOR CORPORATION, Harfford City, Ind.
Manufacturing Divisions:
hillside, n. J. - Nashua, N. h. - CORTLAND, N. Y.
lewistown, pa. - oklahoma city - dallas, tex. - portland, ore.

A COMPLETE LINE OF DOORS - A COMPLETE PRICE RANGE! Distributors in All Principal Cities-See Your Classified Directory



## National Home Week visitors will demand color! Steal the show with coloprul, New Youngstown kitchens



Feature a revalutionary $30^{\prime \prime}$ Youngstown Kitchens Dishwasher in your National Home Week model. Largest capacity on the market -yet costs no more than smaller competing models. Shown here: the amazing WorkLevel Dishwasher-only model of its kind. Also new Undercounter model and $48^{\prime \prime}$ Electric Sink. In color for the same price as white!

Whatever the size of your kitchen, you'll be able to offer more features-more beauty-with flexible Youngstown Kitchens. You choose from the industry's widest range of units-choose your colors at no extra cost. Star White, Dawn Yellow, Meridian Blue, and Sunset Copper-they'll put extra sales appeal into every kitchen you build!

Beat your competition to the punch. Feature America's most wanted kitchen. Preferred 5 to 1-gorgeous colors at no extra cost!

No doubt about it-National Home Week prospects will be looking for color. That's the trend!
And in all-steel Youngstown Kitchens you'll find the perfect way to get the jump on your competition with gorgeous, harmonizing colors at no extra cost!
But that's just one advantage you enjoy with Youngstown Kitchens. There are many more .

- Complete planning flexibility with indus-
try's widest selection of units! - All-steel construction-won't warp or rot ever! -Baked-on finishes last indefinitely! - Jobtimed delivery-from the nearest of 87 completely stocked warehouses! - Fast, money-saving installation! • Mass-production savings!
Order Youngstown Kitchens for your model homes now. Prospects will remember them long after they've forgotten your competitors' models!


## SEE OUR COMPLETE-LINE KITCHEN DISPLAYS!

## In Chicago-Room 1119, Merchandise Mart; in San Francisco-Suite 180, Merchandise Mart. <br> Youngstowin, fitchens

World's Largest Makers of Steel Kitchens


Add a big "plus" to your model with the sensational new Youngstown Kitchens Food Waste Disposer. Highest quality anywhere-at the lowest possible price. Lightweight, compact, easily installed-it guarantees complete freedom from garbage nuisance!

Mr. Harry Howell, Builder Sales Manager
Youngstown Kitchens
Dept. HH-655, Warren, Ohio
$\square$ Please rush Youngstown Kitchens Specifications Book. $\square$ Please have your representative call-no obligation.

NAME (Please print)
FIRM
ADDRESS
$\overline{\text { CITY }}$

"Carra-Plas" Plastic Wall Tile manufactured by
Cermak Tile Company, Inc., Cleveland 29, Ohio ded adelantaqe... in

IN FAVOR OF DESIGNERS, BUILDERS AND BUYERS

A modern bath like this simplifies sales because the benefits are so apparent. Lilting colors refresh the eye $\ldots$. clever layout adds convenience ... polished beauty minimizes upkeep. Tile made of Bakelite Brand Styrene Plastics makes it easy to achieve, actually inspires design. And these tiles are so easy to install, add so much luxury for so little. You'll find it profitable to include them in your plans.

Bakelite Styrene Plastics give tile all these features: Front-to-back depth of color, clear and uniform. Easy cleaning, safe with soaps and detergents. Resistance to acids, alkalies, and many other chemicals. Resistance to denting, chipping and crazing. Ask your dealer for wall tile made of Bakelite Styrene Plastics which meet the industry's standards. It's eligible for FHA loans.



## DWYER KITCHENS

Four sizes . . . 39 to 69 inches wide. Gas or electric.

Enduring Quality Throughout
Refrigerator interiors are genuine vitreous porcelain on steel, never rust out and easy to keep fresh and clean. Work tops and fronts are porcelain. Never require repainting, dirt and grease wash off easily. From hinge to tiny switch, every part of a Dwyer Kitchen has been designed and made for long, tough service.
For rarely needed service, every mechanical part is accessible from the front
no need to disturb the kitchen assembly.

## Made by Specialists

Dwyer Kitchens are engineered, manufactured in their entirety . . . and guaranteed by an organization which has specialized in compact kitchens for over a quarter century. They are easy to install . . . simple to service . . . last indefinitely.

Write for complete bulletins.

DWYER PRODUCTS CORPORATION
Michigan City, Indiana


Town $\qquad$
DWYER PRODUCTS CORPORATION
Dept. D-65, Michigan City, Inct

## EVENTS

National Housing Conference, annual mecting, June 8-10, Hotel Statler, Washington, D.C.

North Carolina Savings \& Loan League, annual convention, June 9-12, Hotel Roanoke, Roanoke, Va .

1955 Los Angeles Home Show, June 9-19, Pan Pacific Auditorium, Los Angeles.

International Design Conference, June 13-16, Aspen, Colo. Speakers will include Walter Gropius, Pier Luigi Nervi, Philip Johnson. For further details address Charles W. Saul, The Aspen Co., Aspen, Colo.

Pennsylvania Savings \& Loan League, managers' conference, June 19-22, Bedford Springs Hotel, Bedford, Pa.

Forest Products Reseach Society, national meeting, June 20-23, Olympic Hotel, Seattle.
American Institute of Architects, annual convention, June 21-24, Radisson Hotel, Minneapolis.

National Conference on Instruction in Landscape Architecture, June 22-25, Allerton Park, Monticello, Ill .

American Society of Landscape Architects, anmual conference, June 26-29, Sheraton Cadillac Hotel, Detroit.

American Society for Testing Materials, annual meeting, June 26-July 1, Chalfonte-Haddon Hall, Atlantic City.

Plastics in the Design of Building Products, two-week special summer program, June 14-24, Massachusetts. Institute of Technology, Cambridge, Mass.

Congress of the International Union of Architects, fourth annual assembly, July 11-16, The Hague. Further details available from ALA headquarters in Washington.

Short Course in Home Planning and Construction (for mortgage lenders), July 11-20, University of Illinois Small Homes Council, Urbana campus. Registration fee: \$75. Further details available from supervisor of engineering extension, room 116, Illini Hall, 725 S. Wright St., Champaign, 111.
1955 Model Home Contest for High School Students, sponsored by Natl. Assn. of Home Builders, entries due Aug. 31. Information available from Miss Elizabeth W. Robinson, NAHB, 1028 Connecticut Ave., Washington 6, D.C.

AIA, northwest regional conference, Sepf. 9-11, Many Glacier Hotel, Glacier Park, Mont.

National Home Week, sponsored by NAHB, Sept. 10-18, programs and exhibits in more than 150 cities.

Wisconsin Savings \& Loan League, annual convention, Sept. 19-21, Madison, Wis.

NAHB, fall directors meeting, Sept. 23-26, Denver, Colo.

American Sociefy of Planning Officials, annual planning conference, Sept. 25-29, SheratonMount Royal Hotel, Montreal.

Midwest Conference of Building Officials, annual conference, Sept. 26-28, Hotel Fontenelle, Omaha.

## Vina-Lux <br> floors give a lilt to living



Vina-Lux matches carefree living with carefree floors-floors that catch the eye, cushion the feet, and generally add to the rich comfort of good living.

No waxing chore for this floor-it was born with its glamorous beauty built-in. No tedious scrubbingit cleans with simple, quick mopping-stays clean longer, gives you more time for relaxation.

Vina-Lux is a product of today-a vinyl asbestos triumph over old-fashioned cleaning methodsa brilliant color partner with today's new fabrics
and decorative ideas-an enduring challenge to tomorrow's use and abuse.

For more information about Vina-Lux, America's leading vinyl asbestos tile-send for the Vina-Lux Catalog, with color chart and product data.


AZROCK PRODUCTS DIVISION - UVALDE ROCK ASPHALT CO.
FROST BANK BUILDING - SAN ANTONIO, TEXAS
MAKERS OF VINA-LUX • AZROCK • DURACO • AZPHLEX

## Now...Westinghouse Air Conditioning 



# Westinghouse combination Heating-Cooling Unit with Precipitron ${ }^{\circledR}$ - the Electronic Air Cleaner - gives Architects and Builders a new "plus" to offer home buyers 

With new-home sales growing more competitive every day, it is important to offer shoppers a stand-out feature that your competition does not have.
The Westinghouse Year-Round system with precipitron is that important feature . .
. . . because the Westinghouse PRECIPITRON removes five times more dirt, dust and pollen from the air than the mechanical filter in any air conditioner on the market.
When you stop to think of it, the average housewife spends an appalling number of hours every month in dusting, polishing, washing, scrubbing the venetian blinds, furniture, bric-a-brac, lampshades, mirrors, curtains, drapes, woodwork, etc.
It is a thankless, endless job that no man would put up with if he could be shown a way out . . . Westinghouse AIR CONDITIONING with PRECIPITRON reduces this tedious job from hours to minutes . . . throughout the year.

From your own experience you know that, within the bounds of a workable budget, "he" is much easier to sell if the house makes a hit with "her".

You can imagine, then, what is going to happen when "she" has a chance to choose between "X house", "Y house", and America's "Easiest-to-Keep-Clean House".

No matter how short the hot weather season, she'll want the home with Westinghouse air Conditioning and precipitron.

Only Westinghouse offers Year-Round air conditioning with precipitron. Be the first to offer it in your area. For more information mail the coupon at the right, today!
with Precipitron


## AIR ELECTRONICALIY



## PRECIPITRON

* Electronic Air Cleaner (above) removes $90 \%$ of all airborne dust, dirt, pollen. Provides most healthful air ever fo enter the home . . . considerably reduces cleaning, dusting, redecorating. Uses no more current than 60-watt bulb.



## HEATING-COOLING UNIT

^ Cools in summer-makes every room comfortable.
» Heats entire house in winter, at the level you choose.
$\star$ Removes excess moisture from the air on hot, sticky days.
$\star$ Oil or gas-fired furnace, for maximum fuel economy.

* Westinghouse-designed thermostat-completely automatic.
... and Westinghouse BACKS THE BUILDER with the
"6-STEP PLAN TO SPEED HOME SALES"


Here's a down-to-earth plan that spells out practical promotion for quicker sales. Any builder can use it to advantage-to step up interest and boost the percentage of closures.
The 6-Step Plan includes merchandising ideas . . . effective literature . . . salesman's 10 -point selling guide . . . big eye-catching displays . . . all specifically aimed to sell your prospective home buyers.
Whether you're located in the North, East, South or West-whether you're a large scale developer or a custom builder-you'll get real help from the Westinghouse "6-Step Plan to Speed Home Sales".

Westinghouse Air Conditioning, Dept. H-3 Box 510, Staunton, Virginia
$\square$ I'd like to have a look at "6-Step Plan to Speed Home Sales"
$\square$ I'd like to have complete information on the Westinghouse precipitron, Heating-Cooling Unit Combination. I'm interested as an:
$\square$ Architect $\square$ Builder $\square$ Other...........

NAME ${ }^{-}$. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .






## A distinctive random-width

 oak floor at low costHere's a new idea in floors . . . a floor that will give any home added style and beauty without extra expense. Bruce Fireside Plank Floor has all the well-known advantages of solid oak, plus these winning features:

## Stylish Midnight Finish

The mellow, dark intensity of this entirely new finish is smart, interesting, appealing. Factoryapplied by the Bruce "Scratch Test" method, it's baked in for long life and easy care.

## Alternate widths, wide bevels

Bruce Fireside Plank has the charm of an expensive random-width plank floor. Alternating $2^{1 / 4^{\prime \prime}}$ and $3^{1 / 4^{\prime \prime}}$ strips form an attractive pattern that is accentuated by the shadow lines of wide, yet shallow, side bevels.

## Low installed cost

Because it's completely finished at the factory, Bruce Fireside Plank costs no more installed than a comparable grade of plain strip flooring. There are no on-the-job finishing costs and builders save 3 to 5 days working time per house.

Leading Architects and Decorators praise Bruce Fireside Plank Floor

"It is a floor that has character! It can be used without reservation for any flooring need, not only because of its natural beauty but also its modest price."
Eugene Voita, A.I.A.
Chicago

"The new dark finish of Fireside Plank Floor is particularly appealing to me, and I am certain it will be welcomed by architects and decorators throughout the country."
Pipsan Saarinen Swanson, A.I.D. Bloomfield Hills, Michigan

"The alternate width of the boards, with the beveling, produces an overall texture that provides a perfect background for any furniture styling and any color."
James P. Erdman, A.I.D.
Grand Rapids Furniture Guild

"I am particularly pleased with the new dark finish, as it most certainly adds to the appearance, and the beveled effect makes it very distinguished in character."
Angus McSweeney, A.I.A.
San Francisco

Bruce Fireside Plank Floor gives homes extra floor appeal at no extra cost. Write for literature.

# GEnEVA gives you more... <br> <br> the Kitchen that whispers 

 <br> <br> the Kitchen that whispers}


## Full <br> Warranty



- 1 .


## Stainless Steel, Trained Kitchen Porcelain and Specialists Built-in Sinks to help you

Special Feature
Cabinets

## NO OTHER KITCHEN CAN COMPARE WITH GENEVA

Large or small home... a GENEVA kitchen is the perfect answer. By offering the greatest selection of kitchen cabinets available, a GENEVA kitchen can be tailored to specific room dimensions. No wasted time...no wasted space. And of equal importance a GENEVA kitchen can be personalized to meet any individual whim-and any budget. To be sure of the finest...choose GENEVA.

Geneva whisper quiet features


Door and drawer frontssound deadened, painted inside and out.


Exclusive plastisol coating of wire shelves cushions sound.


Floating drawers glide smoothly and quietly on nylon rollers. Geneva Modern Kitchens, Division of Acme Steel Co., Geneva, III.

## Which house has the RHEEM Year Rounder?



Here are two houses, identical in almost every respect, including price. Yet the one on the left was sold the first day the houses were open. The one on the right has had prospective buyers tramping through it daily ever since, and is still unsold.
Why?
Because the house on the left is equipped with a Rheem Year 'Rounder-central air-conditioning and heating in one unit. The house on the right has only a conventional forced-air furnace.
It just stands to reason that most home-buyers prefer a house with air-conditioning to one without, other things being equal. That's where the Rheem Year 'Rounder comes in. It provides year-'round central air-conditioning-heating in the winter and cooling in the summer-efficiently and economically. The Year 'Rounder's lower cost is achieved by combining heating and cooling equipment in one perfectly designed compact unit.
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Why not find out for yourself, as so many builders have, how quickly the Rheem Year 'Rounder can change "For Sale" signs into "Sold" signs. For full information, call our nearest office. Or write to Rheem Manufacturing Co., 7600 S. Kedzie Ave., Chicago 29, Illinois.

## Switch-in-Time, Suitch to



RICHMOND AND SOUTHGATE,
CALIFORNIA; HOUSTON, CHICAGO, NEW YORK, NEW ORLEANS; LINDEN, N. J., AND SPARROWS POINT, MD.


1. Embossed Steel Cabinet 2. Automatic Controls 3. Slotted Burner 4. Balanced Blower 5. Sound-Absorbent Pads 6. Turbo-Dryer Cooling Coils 7. Low Pressure Drop Condenser 8. Sealed Refrigerant System

## HOW DO YOUR HOMES RATE IN



60 AMPERES, $120 / 240$ VOLTS

The 60 Amp. house has a basic electrical capacity of $14,400 \mathrm{Watts}$. This will supply lighting and plug-in appliances, plus range.

The system would have to be enlarged before any of the major appliances listed under "Fullpowered" could be added.

## A 60 AMP, SERVICE ENTRANCE JUST ISN'T

Wires large enough to carry full, healthy loads of current . . plenty of circuits for both large and small appliances . . . sufficient outlets to feed current to every spot where it's needed. These are the vital factors to consider when building a truly modern home!

Before a home can be called modern, it must function in a modern manner! Home wiring must not only meet the electrical needs of today - it must also look ahead to the future. Too often, the addition of a single new appliance can quickly change the adequately

## THEIR SERVICE ENTRANCE EXAMS?



## ENOUGH FOR THE HOUSES YOU BUILD TODAY!

wired home of today into the underwired home of tomorrow!
Avoid this! Build your homes with an accent on sound, adequate wiring - it will make your houses easier to sell, will add to your reputation as a builder of quality homes.

Free Home Wiring Wall Chart! Send today for Kennecott's handy wall chart showing typical home circuit loads. Use it as a check list when planning home electrical systems. For your copy, write Kennecott Copper Corp., 161 E. 42 nd St., New York 17, N. Y.


## LETTERS

## MUST READING

Sirs:
[Minority housing (April issue)] should be "must" reading for builders considering this market. . . .

Ralph H. Sims
Crawford Corp.
Baton Rouge

## Sirs:

Highly informative . . . the treatment was refreshing, new and original. It was an objective, fair appraisal. This should become a miniature bible for those in the housing industry and government, who really and honestly want to know the score.

Reginald A. Johnson, director Dept. of housing activities National Urban League New York City

Sirs:
Highly instructive . . . an excellent piece of research and writing.

> Gordon W. Allport
> Professor of Social Relations Harvard University

Sirs:
Incisive and timely.
William Mann Jr. Tuskegee Institute

Sirs:
Mr. Howden, commentator on a weekly broadcast, "Dateline Freedom," discussed and recommended the article highly.

Dr. Irving Babow
Council for Civic Unity of San Francisco

Sirs:
House \& Home is to be highly commended for contributing points of view which should develop a wider public understanding.

Henry G. Riter III, president
National Association of Manufacturers

## POURED ON

Sirs:
Seal, Turner and Pomeroy's High Meadow development is far from being all wet in spite of having been 'poured over' (see March issue). The developers deserve high praise for having placed over-all design control in the hands of the one professional specifically trained to handle it: the landscane architect.

James Fanning, landscape architect
New Canaan, Conn.

- Landscape Architect Fanning's spelling puts H\&H editors to shame.-ED.


## hot-water heat

Sirs:
A splendid article (April issue). The industry is grateful. . .

Norman J. Radder, secretary
Plumbing and Heating Industries Bureau Chicago, Ill.
continued on p. 100

# American-Standard product development brings you more sales-building features 


#### Abstract

-customer-appeal . . . than quality products which are new-as-today. That's where American-Standard gives you particular sales help, with constant development of new products that are the finest in styling, durability, and efficiency of operation.

These always-new products by American-Standard are powerful sales aids when installed in your homes. They tell the public that you have used quality materials . . . create confidence in the quality construction of your entire home.

And more and more homemakers are becoming familiar with American-Standard products every day, through the consistent, full-color advertising which appears in the most popular magazines. This pre-selling, of course, pays off in easier, bigger sales for you!

To aid you further in your sales efforts, AmericanStandard offers you many special services and sales supports . . . such as the very popular "Blueprint for Sales" which currently is being offered free to builders. Ask your American-Standard Sales Office about this sales-booster, or write direct to Plumbing and Heating Division of American Radiator \& Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pa.


## American-Standard

all-new steel kitchen cabinets . . .
two new lines of plumbing fittings

# These American-Standard products will add new beauty, convenience...and sales appeal... to the homes you build 

What housewife could resist the modern-as-tomorrow products shown here? And what man-of-the-house would not be impressed with the construction features that spell convenience and easy maintenance!
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Behind the beauty of these fine products is sound construction that can result only from months . . years . . . of research, engineering, testing, perfecting. They're quality products in every detail. Just imagine the extra value these American-Standard products will add to your homes! Plumbing and Heating Division of American Radiator \& Standard Sanitary Corp., P. O. Box 1226, Pittsburgh 30, Pa.


MONOQRAM FITTINGS with satin chrome finish can be personalized with owner's initials.


CLEAR OR COLORED non-slip handles increase the charm of Monogram fittings.


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GRACEFUL AND PRACTICAL, Quality Fittings come in center-set or spread styles.


EASY-TO-GRIP Quality Fittings are durably made and smoothly finished for lasting beauty.


SINK FITTINGS have finger-tip control and long swinging spouts for easy use.
convertible cabinets. The exclusive convertibility feature is an important selling advantage for you. Sliding wire shelves and drawers in base and undersink cabinets can be added or rearranged at any time- thus offering more usable storage space. What's more, American-Standard convertibility lets you offer competitively-priced kitchens that the home owners can tailor to suit their particular needs with extra shelves, drawers and accessories.



STYLED FOR BEAUTY . . . AND BUILT TO LAST! American-Standard kitchen cabinets are made of sturdy steel, Bonderized for long life. The smooth, baked-on enamel finish resists scratches, won't discolor. Cabinets are fully enclosed for extra rigidity. Solid-sounding door and drawer fronts are insulated with honeycomb-type material. Drawers and shelves slide easily on nylon. Superior construction advantages like these assure many years of service-and lasting owner satisfaction.

EXCLUSIVE SNAP-LOCK ASSEMBLY. This revolutionary assembly principle makes installation easier, quicker, cheaper. The unique interlocking as sembly channel aligns the cabinets, clamps them together and also fastens them securely to the separate, easily-leveled sub-base. Only a pair of pliers is needed for assembly! You'll save time and labor with this remarkable kitchen

Cabinets of Steel for Lasting Appeal

## American-standard

Serving home and industry: americhistanamrd - merican blower - church seats 8 whil the detroit comtrols - kewanee boulers - ross exchangers - sunbeam air conoitioners

## Home owner Satisfaction is a Cuxtom Bult trademark



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The many designs and variations in the Weakley Custom-Built line hold irresistible appeal for home buyers of every price range. No matter how many units you are now building - Weakley's Planned Program can enable you to build more units at less cost with more profit. The Weakley way is the best plan ever offered. You get -

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THERE IS A HOME FOR EVERY NEED AND INCOME GROUP IN THE COMPLETE CUSTOM BUILT LINE


## Year 'round air conditioning adds first home in Frigidaire's



For greater comfort and health, architect Robert A. Little has included Frigidaire's combination heating and cooling system in his plan


The first home in Frigidaire's "Kitchen Plan": program comes from architect Robert A. Little, of Cleveland, Ohio, winner of various architectural prize awards for his work in designing present day homes. Air conditioning is playing an ever-increasing role in modern home planning and should be provided for in even the lower price home plan. Location and space requirements are especially important in smaller homes, and the compact, well-designed Year-Round Frigidaire Conditioner fills the bill completely.


Now even low-cost homes can offer the advantages of one-temperature comfort all year 'round. Air conditioning is no longer a luxury found in expensive homes. It is a feature that prospective buyers ask for, even in lower cost homes. And for wise builders, it is a sales tool that offers buyers more comfort today and greater resale value for their property tomorrow.
With the builder and his special requirements in mind, Frigidaire has developed packaged air conditioning units designed to fit builders' plans.
In architect Little's design, the Frigidaire Condi-
tioner is located in closet opening onto the entry hall. Conditioned air is supplied to all rooms through a ceiling duct running the length of the house. Air returns to the conditioner through ducts in the slab floor.
Compact in size and flexible in application, Frigidaire Conditioners are easy to install and maintain. Most important of all, they offer home buyers assurance of dependable, economical service.
See your Frigidaire Air Conditioning Dealer today. Or write Frigidaire, Dayton l, Ohio. In Canada, Toronto 13, Ontario.

## extra sales magic to the

new "Kitchen Plan" program for builders


## Year-Round Frigidaire Conditioners are specially designed to fit into today's more compact home plans

Provide both automatic heating and summer cooling in a single, compact unit no larger than many furnaces alone! Only $46^{\prime \prime}$ wide, $25^{\prime \prime}$ deep at the base, and $75^{\prime \prime}$ high. Easy to install almost anywhere. Single, combination unit cuts installation costs.

Designed for basement, utility room, closet or alcove. Choice of gas and oil-fired models. Famous Frigidaire XD Meter-Miser Compressor supplies cooling power in 2 - and 3 -ton capacities. Operates with air cooled, water cooled, or evaporative condenser. Cushioned blower assures quiet operation. Large, efficient air filter.

And remember these other Frigidaire Conditioners designed for builders to fit into other home plans


This Multi-matic Conditioner adds summer cooling to heating systems
Teams up with almost any forced air heating plant using the same ductwork, or it can be installed to operate independently. 2, 3, and 5 -ton models. Available with or without blower. Can be divided into sections for installation in attic or crawl spaces.

Frigidaire Room Conditioners
fit regular and casement windows
Available in a wide range of capacities. Easily adapted, if desired, to "through the wall" installation.


## Frigidaire Conditioners

Built and backed by General Motors

Frigidaire Division, General Motors Corp., Dept. 1001, Dayton 1, Ohio

Gentlemen: Please send me Frigidaire Kitchen Plan number BSD101, which includes floor plans, detailed drawings of the kitchen and related areas, elevations, specifications of materials, equipment and colors. Attached is $\$ 1.00$.

Name
Address
City
Zone
State


LOW-COST COOLING SELLS SHARP \& ISFORT PROSPECTS !

Mr. Sharp says:
"We've realized for some time that home buyers put extra comfort first. But of all our efforts, no other low-cost comfort feature does so much to close sales as the Robbins \& Myers Attic Fan. They help so much, we've installed 72 of these units within the past 3 years."

Ray Sharp, Partner
Sharp \& Isfort Builders Cincinnati, Ohio

Your prospects aren't different from Sharp \& Isfort's in this respect . . . they're com-fort-minded! And when you talk about complete home cooling (which sounds expensive), they're bound to be impressed! Expensive as it sounds, you can promise this cool living, cool sleeping, for as little as $\$ 137.60$, list. That's complete, with automatic ceiling shutter! Another money-saving feature is the easy installation, shown below. Plus the fact that builders from coast to coast report "no
costly service or maintenance of any kind"!
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EASY TO INSTALL-1-2-3!


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Complete automatic shutter unit screws to ceiling opening frame; flange forms trim. No finishing needed.


Ready-made attic louvers can be installed quickly by one man. Sizes for each of various-sized fans.

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 Pidacee attic fans (\$0.

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Name
Address
City

Sirs:
. . This article will help builders and architects and others in the industry to appreciate more fully the latest features of modern hotwater heating systems.

Edward F. Ford Bell \& Gossett Co. Morton Grove, Ill.

## AIR-CONDITIONED VILLAGE

## Sirs:

The work done by the NAHB Research Institute in connection with Air-conditioned Village (March issue) points up the value of a type of housing research which can have many similar practical applications.

Charles A. Bowser, assistant commissioner
Technical Standards, FHA
Sirs:
If builders would study your story and give a lot of thought and planning to their own airconditioning jobs, I am sure they could vastly improve their performance.

> F. C. BrandT, regional manager
> Minneapolis-Honeywell Regulator Co. Dallas

Sirs:
The prefabricator has a definite responsibility to point out to the builder the necessity for proper solar orientation. Everyone in the housing industry shares responsibility for proper design for air conditioning.

Herbert T. Gilkey, research associate in mechanical engineering University of Illinois
Sirs:
Very informative . . . the highlight of the report was the cost analysis. I think air conditioning is here to stay; this report proves it. Bов H. Reed, assistant research architect Texas Engineering Experiment Station College Station, Texas

## NO FIRM PRICE

Sirs:
In New Products (March issue), you quoted the new BullDog Electrostrip at $\$ 1.10$ to $\$ 1.25$ per foot-outlets $\$ 1$ each.
This may or may not be the complete ininstalled price, depending on factors such as quantities sold, installation charge, etc.
No firm price can be given except by the electrical contractor involved.

George Sevick, sales manager Electrostrip Division BullDog Electric Products Co, Detroit

## ERRATUM

Sirs:
I cannot reconcile your $\$ 8.30$ cost figure (March issue, p. 124). The extra 272 sq. ft . at $\$ 3$ will not reduce the cost that much.

[^6]- Reader Peters is right; the figure should be \$8.45.-ED.


Gentlemen: I am interested in the Stylon Ceramic Tile Story. Please send me complete details.

Name
Position
Firm Name.

Address..

City Stylon


Where beauty makes the difference between a prospect and a profit, Stylon shines!

No wonder. For only Stylon among American Tiles offers the prospect such beauty and variety in color. Seventeen shades in bright-glazed wall tiles. Seventeen matching contrasting shades in crystal-glazed floor tiles. Eight shades in matt-glazed wall tiles. Thousands of striking combinations.

And these are thrilling decorator colors, every one.

For the architect whose interiors must inspire attraction at first sight, affection in the years to follow . . . for the builder whose homes must turn prospects into profits, the fairest choice is


[^7]
## Beautiful - Enduring - Cornomical

## SAVES 40\% in Labor Cost with




Hinkle's attractive homes sell "quickly and profitably" according to Don Hinkle, who has saved $40 \%$ in labor by using a Delta 12" Radial Saw "on-the-job."

## Fairview, Pa. Builder Stops Waste!

" 40 per cent cost savings may sound extravagant," says Don Hinkle, Fairview, Pa. home builder, "but that's exactly what happened when we took our new Delta Radial Saw to the first job. The precision and easy handling built into that saw provides us with an on-the-job mill to cut joists, hip-rafters, subflooring and studs fast-and to absolutely accurate dimension.
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There are sound reasons why the Delta Radial

Saw cuts costs for Don Hinkle and other progressive builders. Delta's exclusive $360^{\circ}$ turret action lets you make every cut-miters, dadoes, straight crosscuts and rips-all above the work table, fast. Positive, precision stops assure constant accuracy for production line cutting with far less waste. And, you can take it with you-right to the job. Many builders have paid for their Delta Radial Sawsout of cost savings-on the first job!
Find out how YOU can cut costs-build greater profits-with a Delta Radial Saw. Talk over your requirements with your Delta Dealer today! (He's listed in the classified pages of your phone book under "TOOLS" or "MACHINERY".) Or, send the coupon, for catalog information.

Delta Power Tool Division, Rockwell Manufacturing Company 542-F North Lexington Avenue, Pittsburgh 8, Pa.
$\square$ Please send Delta Catalog.
$\square$ Please send name of my nearest Delta Dealer.

Name $\qquad$ Title

[^8]
## Address

County $\qquad$ State

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give you removable wood windows with

## Precision Adjustment BOTH <br> looseness and Tightness

## HERES WHY-

These adjusting screws turn in METAL threads. They loosen and tighten with thumb and one finger on the screwdriver.

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With over $1,000,000$ A.R.B. metals sets now in service, both builders and householders know that only A.R.B. has positive, permanent adjusting mechanism.

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## "Plus" Values of A.R.B.

A.R.B. Metals also produce wood windows - doublehung and glider - that lift out easily. They require no weather-stripping. They don't rattle or permit drafts. Even if "painted in," they can easily be freed. And they are as easily installed as any other prime window.


The Simple
"FINGER LIFT" BALANCE
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110 THREE WAYS TO MAKE A FLAT ROOF LOOK WELL.

112 WITH THIS FLAT ROOF, NO COSTLY VALLEYS
Architect Andrew Steiner designs a $1,480 \mathrm{sq}$. ft. house whose fiat roof covers a T-plan without cutting light from the patio. In Atlanta.

114 THIS FLAT ROOF PERMITS OVERHANGS WHERE NEEDED
Architect Victor Bruno wraps a house on a small city lot around a large patio. Glass is shaded by extensions of the roof. In New Orleans.

116 FLAT ROOF UNIFIES LARGE AND COMPLEX PLAN
Architect Edward Larabee Barnes uses a flat roof to solve big-house problems of interior light and over-all unification. In Fort Worth.

## 122 A FLAT ROOF CAN FIT ANY PLAN

Architect Oscar Niemeyer sets a free-form house under an entirely different free-form roof related to a dramatic setting. In Rio de Janeiro.

124 ROUND TABLE REPORT
Panel of experts urges use of far less door and window sizes, finds that current sizes add $\$ 100$ to the cost of a small house. They recommend three basic lengths and six widths for builder-house windows.

132 HOUSE \& HOME'S CONSUMER MAGAZINE REVIEW
On the newsstands this month: prefabs, open kitchens, a plank-andbeam house, a flat-roofed house, glass walls, open plans, family rooms.

138 CAN SIMPLIFIED STEEL FRAMING COMPETE WITH WOOD?
Houston, Tex. J\&B Manufacturing Co. develops a promising modular, steel frame for an $1,150 \mathrm{sq}$. ft. prefabricated house, so simple to erect that it may put steel in competition with wood.

146 NINE MORE WAYS TO BUILD BETTER FOR LESS
Third in a series of articles presenting new building techniques designed to cut costs and improve the final product-the house.

151 HOUSE \& HOME DETAIL SHEETS
Beginning a new series: the first three sheets are concerned with data for flat-roof construction.

154 SEPTIC TANKS OR TREATMENT PLANTS?
This is a $\$ 100,000,000$ question which can cause homeowners and builders severe headaches.

160 SUCCESS ON ODD LOTS
Builder Garry Grover builds all over Lafayette, near Oakland, Calif., using variations on four plans to fit varying terrain.

Wide selection available today for floors.

226 TECHNICAL PUBLICATIONS


WHEN


DOES A

## FLAT ROOF

## MAKE SENSE?



1. Patio house in New Orleans, by Victor Bruno, architect. Pp, 114-115 Photo: Frank Lotz Miller.
2. T•p., in house in Atlanta, by Andrew Steiner. Pp, 112-113. Photo: Gabriel Benzur.
3. Luxury house in Fort Worth, by Edward L. Barnes, architect. Pp, 116-121. Photo: Ulric Meisel.
4. Free-form house near Rio de Janeiro, Brazil. Oscar Niemeyer, architect. Pp. 122-123. Photo: Nicolau Drei, courtesy Espacio magazine.


Some people think that the only reason for using a flat roof is to save money. (This is a debatable advantage: flat roofs sometimes cost more.)

Others think the flat roof is some sort of "modernistic trademark"
-like the fishtails on the Cadillacand that the reason for making your roof flat is to make your house look.
like the very latest thing on the market.

And, finally, there are some people who think that all flat roofs are ugly and ought to be forbidden.

All this just means
that too few people understand what a flat roof is good for and how it should be used.

There are at least six very good and practical reasons why a flat roof is often the best kind of roof to use -see pp. 108-109.

And there are three simple rules you should remember if you want your flat roof to look well -see pp. 110-111.

You will find these six advantages and these three design principles
listed on the next four pages.
And you will find these advantages and principles demonstrated in the four houses shown on pp. 112-123.

## SIX REASONS WHY A FLAT ROOF MAKES SENSE



1. A flat roof can adjust itself economically to any plan, however irregular. As our production houses get larger they tend to become better zoned into nighttime and daytime areas. Results: more T-plans, L-plans, H-plans and offset plans-with one wing for nighttime areas, one for daytime areas, and an entry in the middle (see pp. 112-113). Sketches at left show a typical two-zone plan, sheltered (top) under a flat roof and (below) under a series of pitched roofs. The pitched roofs call for complicated framing, costly flashing. The flat roof overcomes all these problems.
2. A flat roof can be punctured with skylights, patios, trellis cutouts and clerestories anywhere and everywhere. As we begin to use more inside rooms-baths, utility cores, storage areas, wide hallways for double use as play areas or laundries-the need for skylights and clerestories grows by leaps and bounds. No problem at all with a flat roof, tough to solve with all but the shallowest pitches. Sketches at left also show ease of roofing over a patio house with a flat top, relative difficulty of doing same thing with a traditional pitched roof. Patio houses like the one on pp. 114-115 are becoming increasingly popular in many parts of the country.

3. A flat roof can be added to with the greatest of ease. More and more people are using FHA home improvement loans to add porches, extra rooms, garages and so on to their basic houses. The flat roof makes all this very simple-the pitched roof does not. Needless to say, you can always add a flat-roof wing to a pitchedroof house. But few people have done it successfully. The New Orleans house shown on pp. 114-115 had an extra room added to it after the owners moved in. The addition is undetectable-never made a ripple or left a wrinkle in the over-all shape of the house.
4. A flat roof can give you deep overhangs where you need them. Most glass walls need protection, and the simplest way of protecting a glass wall is to use a deep roof overhang. With a pitched roof, such occasional deep overhangs cause plenty of framing and flashing problems (see sketch). Result: most pitched-roof overhangs built today are inadequate. No such difficulties with the flat roof-it can be pulled out like taffy to give you overhangs and entrance canopies wherever you need them (see house by Architects Bassetti \& Morse with a flat plank roof, Jan. issue, pp. 118-119).

5. A flat roof can make a short house look longer. Everybody is familiar with the optical illusions that involve two identical boxes. and horizontal stripes vs. vertical stripes: the box covered with horizontal stripes always looks longer and lower; the one with vertical stripes always looks shorter and taller. In the $2 \frac{1}{2}$-story house of the past, architects tried to make the facades imposing by stressing the verticals in the windows, porticos and so on. In the low-slung houses of today the important accent is the horizontal: a flat roof, especially one with deep fascias and projecting overhangs, can make the smallest house look longer and larger.

6. A flat roof makes a plank-and-beam ceiling much easier.

By using the increasingly popular (and quite traditional) plank and beam construction (see June '54 issue), you can have an integral flat ceiling at no extra cost. Plank roof decks are full of problems: 1) you need extra insulation because the conventional air space is eliminated; 2) you need good vapor barriers in most climates; 3) you need good lumber or a well-finished synthetic plank; 4) you need to plan your wiring with greatest care. Nevertheless, long-span planks have proved inexpensive and handsome in many houses, and can give you a roof and ceiling all in one.

## 1. USE OVERHANGS



YOU CAN DO A HANDSOME JOB WITHOUT THEM


BUT IT'S A LOT EASIER IF YOU MAKE THEM DEEP

## 2. SHARPEN THE SILHOUETTE

The most important line in any flat-roofed house is the gravel stop-the line you see silhouetted against the sky. If that edge gets ragged and dented (because painters and roofers lean their ladders up against it) the whole house can appear shoddy and poorly detailed. To avoid this, many architects use a steel or bronze angle to reinforce the flashing. Others use heavier gauge materials for the stop itself-extruded aluminum copings or stainless steel stops. These details are a little more expensive than the traditional gravel stops without stiffening-but they will more than pay off in terms of better over-all appearance.

## 3. USE BROAD FASCIAS



YOU CAN MAKE THEM PAPER THIN


BUT A BROAD FASCIA LOOKS MORE SUBSTANTIAL

People in northern countries have become so used to seeing a "lid" on top of their houses that the absence of one makes the whole house seem incomplete. (In Latin countries there is no such tradition, and houses with roof terraces bounded by parapets are a generally accepted sight.) Whatever the reason, roof overhangs suggest shelter to most of us, and their absence is often disturbing. Flat roofs without overhangs $c a n$ be hand-some-but only when handled by an expert. (Note: all this is quite apart from the questions of sun and glare protection - which make overhangs a necessity in most areas and orientations.)

1. Philip Hiss, architect; photo: Lionel Friedman Lloyd Ruocco, architect; photo: Ed Sievers
2. Photo: Wayne Andrews

Mies van der Rohe, architect; photo: Hedrich-Blessing
3. Philip Hiss, architect; photo: Lionel Friedman Elliot Noyes, architect; photo: E. J. Cyr


NOTHING LOOKS AS GAD AS A


SO REINFORCE YOUR GRAVEL STOP

Where a plank roof deck is used, or where the overhang is framed with light outriggers, there is a tendency to make the fascia no thieker than the structure dictates-i.e. as litille as 2 " deep. Result: the flat roof looks as if a good storm might blow it off. A deep fascia-12" or thereabouts-forms a substantial finish line against the sky, gives the whole house a greater sense of repose. Added advantage : a broad fascia plays down imperfect alignment, etc. (Note: If you use a wood fascia, try to use long boards with few if any joints; if you use a fascia of a sheet material, see that the joints are evenly spaced.)

The houses shown on the next 12 pages demonstrate many of the advantages of the flat roof and many of the design details listed here. And on pp. 151-153 are shown some of the construction details that apply to flat-roof building: details of skylights, drainage, ventilation, gravel stops, etc.


## WITH THIS FLAT ROOF, NO COSTLY VALLEYS

Costs of this handsome house were cut sharply with a flat roof.
Architect Andrew Steiner's T-shaped, two-zoned home in Atlanta was designed around a patio divider. Had a pitched roof been used, the plan would not have proved nearly so workable, from the standpoint of both design and cost.

With the planning freedom produced by the flat roof, the garden patio is well lighted from above along its whole length. It was planned to be the core of the house-physically during most of the year in Atlanta, visually the year around. Architect Steiner would have had three solutions with a pitched roof; with any of them, costs would have mounted and appearance suffered. Had the ridged roof of the bedroom wing been extended fully to the living-dining-kitchen wing's ridge, two valleys would have been formed from the juncture down to eaves. Extra costs would occur in framing and fitting jack rafters against valley rafters. Half the patio would have been covered, unduly darkening it unless part of the roof were chewed out. In one case there would be two valleys with the nuisance of flashing (a chief cause of water trouble); in the other case there would be one valley to flash. The third choice-leaving the entrance hall flat-roofed between two pitched-roof wings-would have meant a house divided against itself in appearance.

This house was built by an architect for himself, but could well serve for a builder's house. It contains 1,480 sq. ft., was built for only $\$ 15,000$.


Living room opens on the patio at right


Core of the house is this central patio separating living-dining-kitchen wing at right from bedroom wing at left



## OVERHANGS AS NEEDED

Not only do flat roofs give you overhangs at less cost where needed; they also permit you to eliminate them where they aren't needed.
That's one advantage of flat-roof construction made clear in this handsome New Orleans house wrapped around a garden patio. The house was designed to make the most of a small but costly, shallow but wide city lot. The flat roof's flexibility allowed Architect Victor Bruno to face all the major living areas, including two of the three bedrooms, on the inner patio, where they are shielded from a flat, treeless, uninteresting neighborhood. No part of the lot has been wasted around the house, except for a small front lawn required by zoning.
Exterior walls facing the rear and sides thus could be kept largely blank for maximum privacy. Costs were lowered by not having to use windows facing the street and other houses. An additional saving came through elimination of overhangs over the blank walls, a saving which would have been impossible with any pitched-roof construction. Elsewhere there are $4^{\prime}$ overhangs over all windows and over floor-to-ceiling sliding glass doors.

The only bedroom that does not enjoy the view of the delightful patio was added at the owner's request after the house was built-an easily handled matter with this type of roof.
Total cost: $\$ 23,700$, or $\$ 11.25$ per sq. ft.


Dining room and living room seen from study



Open porch, $80^{\prime}$ long, faces west is protected by $14^{\prime}$ deep roof overhang

## A SWEEPING FLAT ROOF UNIFIES THIS LARGE AND



A big house is a lot more than just a small house that has been over-inflated: a big house is a distinctly different architectural problem, and this Texas house is a first rate solution to the problems of bigness.

Actually, those problems are twofold: there are purely practical problems, and problems of esthetics.

The chief practical problems are these:

## COMPLEX PLAN

Entrance pergola is partly roofed over with glass-fiber panels, separated from adjoining patio by grille of drainage tiles.

1. How do you light the inside of a $7,500 \mathrm{sq}$. ft . living area? Answer: by introducing skylights wherever necessary (no trouble at all with a flat roof).
2. How do you unify a large assortment of complicated plan elements? Answer: the flat roof with its unlimited flexibility again offers the best solution. (This house, to be specific, is really five separate houses under one sweeping roof-a living house, a sleeping house, a kitchen house, a servants' house and a recreation house. The flat roof unites them all.)

So much for the practical problems. The esthetic problems (and opportunities) are discussed on the following pages. Because Architect Ed Barnes handled those opportunities with such great skill, this house was one of 19 US postwar houses chosen for "quality and significance" by New York's Museum of Modern Art (Feb. '53 issue)



## INTERIOR SPACES IN MOTION

Modern space is meant to be seen in motion-that is the reason for continuously flowing spaces, for open plans rather than tight cubicles.

The trouble with the small house, of course, is that you are likely to find yourself out in the back yard before you have had a chance to experience very much "space in motion."

So the big house offers special opportunities. To realize them fully, the architect had to analyze his problem this way:
a. A big house has to be given coherence, as it may tend to "fall apart" visually. Solution: emphasize and repeat the basic structural pattern, in this case an ever-present oak ceiling plane supported on incredibly thin pipe columns.


Fifteen-hundred sq. ft . den is real center of plan. It is lit through 40 ' long skylight on one side, glass wall on the other. Ceramic, owl-shaped vase on cabinet is by Picasso. Among other artists represented are Jean Arp, Harry Bertoia and Alexander Calder. The latter designed a fountain for the foyer.

Sculpture (opp.), was commissioned from Mary Callery, is set against wall of Arkansas sandstone, lit from above. Floors are white, honed marble.
b. The spaces should be molded by "slabs" that are set apart from the structure: "slabs" of stone, glass or wood, arranged in vertical planes that overlap, advance and recede. Some other devices shown in these pictures: changes in floor level (to make some important rooms more formal), changes in lighting (through strips of skylights) and changes in view.

These two devices -structural pattern and space division with a few geometric planes-are often confused or misused for decorative trickery. By treating the two as distinctly separate entities, and by making the most of the interplay of these different elements, Architect Barnes has designed a house that is both spatially interesting and architecturally coherent.

Pool area is an informal outdoor space, located between


Pergola connects
recreation wing and main house.


Living room with sculpture by Jean Arp
is sheltered by deep roof overhangs.

OUTDOOR SPACES IN REPOSE

The problem inside a house is to prevent the space from becoming "bottled up." The problem outside is to prevent the space from running away.
To give architectural form to the spaces surrounding a building is a practical necessity: outdoor living (like indoor living) seems to call for a variety of different "rooms"-or, at the least, a suggestion of rooms.
Barnes has, in effect, created a half dozen distinctly different outdoor rooms around the periphery of this luxurious house. Some are walled-in patios, sharply delineated. Others are contained between deeply projecting floor and roof planes, but left open on most sides. These deep porches are excellent sun protection in this climate, and essential even in this airconditioned house. Finally, there are some outdoor spaces that are merely suggested by a trellis, some planting or a pattern of paving. The range is all the way from greatest formality (as in the entrance court) to the pleasant informality around the pool.
Few houses are built today on this scale-even in Texas. And among those that are built the trend is all too often toward garish vulgarity. When a client can afford to buy good design and good art-and does-the resulting house will advance architecture on every level. This house has made an impressive (and well-deserved) splash in Fort Worth, and the circles are beginning to widen.


what better evidence could you have?... A FLAT ROOF


## CAN FIT ANY PLAN





Stewart: We have to ship 128 different hardware combinations for garage doors.


Admiral Hussey: Stundardization is a dynamic thing.


Dienhart: Windows must fit the masonry as well as the frame.

## Standardization Round Table urges use of less door and window sizes

Question: What size windows and doors will best meet all the needs of the builder's house and how much money could be saved by standardizing on these sizes?

Answer: Close to $\$ 100$ a house could be saved by standardizing on the right six window widths, the right three window heights, the right two door sizes. And these sizes would do more than just cut costs. They would also help builders offer better design.

That is the report of a Round Table jointly sponsored by the American Standards Association, the Research Institute of the National Association of Home Builders, and House \& Home. Their report begins on page 125. The sizes they recommend are told on page 127 and explained in detail on pages 129 through 131.


Schaub: This will help the small builder


Knox: The width was set to suit the vertical house we built 20 years ago.

## Doors and windows in too many wrong sizes add nearly $\$ 100$ to the cost of a small house

In recent years the window and door industries have both made outstanding contributions to better homes-picture windows, awning windows, jalousie windows, sliding windows, reversible windows, removable windows, double windows, sectional windows, glass doors, flush doors, hollow core doors, and many other new and improved products.
The glass industry has revolutionized its production, thereby enabling architects and builders to use large glass sizes econom. ically and to buy double glazing in a single light.

Now the time has come to integrate this revolutionary progress in manufacturing with the simultaneous revolution in homebuilding and the great change in how most homes are now put together by the merchant builders.
This change makes it newly important that all building components be coordinated to fit together with minimum waste of material and minimum waste of time and labor. To that end, the sizes of framing, dry wall, sheathing, insulation, bricks, concrete blocks and most exterior finishing

- materials have already been dimensioned or redimensioned to work. But homebuilding cannot cash in on the full economy of this coordination until the openings in the other components are coordinated too.

Phootos: Rohert H. Juhnson


Place: For our houses we like as few different window sizes as possible, and a few inches one way or another don't make any difference.


Douglas: Why can't the architect and builder concentrate on the sizes that are best for their purposes?


Lendrum (at blackboard): Let's start with the sizes of the people who are going to look out through the windows. We need windows for people and people don't come in too many sizes.

Metal window catalogues now offer a bewildering choice of more than 600 different sizes. Wood window catalogues offer perhaps an equal number

All these hundreds of sizes are far more than any architect or builder needs or wants, far more than he has time even to read.

All these odd sizes offer little advantage to the architect. On the contrary, they make it harder for him to line up a simple, coherent design.

They are no help to the builder. On the contrary, they make it hard for him to dimension any other wall component until the windows have first been chosen and bought.

They are no help to the manufacturer or the lumber dealer. On the contrary, they eat into the savings of quantity production and compound distribution, warehousing and inventory costs all along the line.

But with all this needless choice of dimensions, all architects and builders still find it hard and often impossible to get the sizes that would best fit the dimensions of the other wall components, best fit the new design requirements of the one-story house, best suit the line-up of the other openings, best suit the changing needs of modern living, because:

1. There is little planned coordination with dimensions of other wall components.
2. There is no planned coordination among wood, steel, or aluminum windows.
3. There is little planned coordination between sizes of various window types.

For want of that coordination window openings in all their multifarious odd sizes now cause the greatest single waste of time, materials, and money in framing and enclosing a house.

Uncoordinated door dimensions increase the waste. Unfortunately, all of us are so accustomed to this waste that not one builder in ten has any idea of the hidden price he pays for wrong-sized openings

The cost of this waste seldom runs less than $\$ 3.50$ for any one opening, often runs as high as $\$ 10$ or $\$ 12$, probably averages close to $\$ 100$ for each small house. On 1.2 million builder houses this year this waste must be costing the home-buying public close to $\$ 100$ million. This figure covers only the builders' own material and labor cost for needless studs and needless cutting of dry wall, sheathing, insulation, and exterior facing to fit around the openings. It does not include the added costs now borne by manufacturers and distributors.

Many of today's window sizes can be traced back to union dictates which put a price penalty on glass cut off the even inch. With today's larger and fewer panes there is no good reason why we should go on fitting the window to the glass instead of to the house.

Other window sizes can be traced back to style dictates of Colonial, Tudor, Spanish, or French Provincial. Windows and doors are just about the oldest of wall components, old enough to be loaded down with out-of-date requirements. Significantly, the newer window types already reflect a trend to fewer sizes.

In yesterday's handicraft house with yesterday's handicraft glass it may have made sense to cut all the other wall components to fit the odd size of the doors and windows. But for today's engineered house and today's mechanized glass industry there is no good reason why doors and windows should not be dimensioned to fit predetermined openings whose size will work without waste of material or labor with the already coordinated modules of all the other wall components - the $16^{\prime \prime}$ or sometimes $24^{\prime \prime}$ module of wood framing and batt insulation, the $8^{\prime \prime}$ module of brick and concrete block, the $4^{\prime}$ and $8^{\prime}$ module of most interior and exterior facing sheets, and the standard 8 'plus-a-tolerance ceiling height jointly recommended for builders' houses by the NAHB Design Committee and the AIA Committee on the Homebuilding Industry. All these modules already conform to the basic American Standard $4^{\prime \prime}$ module jointly sponsored by the Producers' Council, the AIA and the NAHB.
For the present confusion in window sizes we cannot blame the manufacturers. They just supply-often at substantial added cost to them-selves-the sizes architects specify and builders order. We cannot blame the architects and builders. They just specify and order the sizes manufacturers list in their catalogues ard lumber dealers carry in their yards.

The fault lies rather in a complete failure of industry teamwork. It reflects a 15 -year time lag in recognizing all the implications of today's new kind of house and the new way it is being put together by the merchant builders.

That is the failure and that is the time lag we now hope to start correcting by:

1. Letting the manufacturers know the few sizes that will fit all the real needs of the builders' house most economically.
2. Outlining a workable program for getting these sizes widely used as soon as the manufacturers make them available at prices based on volume.


Keck: The characteristics of the material must be considered.


Slipher: If there were some price incen. tive to use these sizes. . .


Scheick: We have several things to gain if we lift the window.


Racquet: As far as $I$ know our windows don't match up with the sizes produced by any other mumufacturer.


Haeger: This is very fundamental: changing from windows based on glass size to windows based on framing.


Wenzier: The use of larger pieces of glass makes the cost of cutting off-theinch glass sizes less important.


# Three basic heights and six widths are all we need for builders' windows 


#### Abstract

All of us-architects, builders, manufacturers, distributors, and research technicians-are unanimous in affirming that:


Better designed houses could be built substantially cheaper, with much less waste of materials and much less waste of labor, if window and door manufacturers could concentrate their production on a much smaller number of sizes and if architects and builders would concentrate their buying on these sizes, but:

1. These few sizes must be carefully coordinated with the framing spacing and the standard modular dimensions of other wall components.
2. These few sizes must be carefully coordinated one with another to look right and work right together.
3. These few sizes must be carefully selected to meet the needs of the people who will live in the houses.

To achieve the dual objective of better design and greater economy we are unanimous in urging the immediate adoption of:

## 1. Three basic window heights

2. Six basic window widths
3. Two basic outside door heights

The three basic window heights we recommend are $3^{\prime}, 4^{\prime}, 6^{\prime}$ rough openings.

The six basic window widths we recommend are $24^{\prime \prime}, 32^{\prime \prime}, 48^{\prime \prime}, 64^{\prime \prime}, 80^{\prime \prime}$, and $96^{\prime \prime}$ rough openings. Our reasons for selecting these few basic sizes are explained in the next section. A few of us believe a seventh basic width of $16^{\prime \prime}$ should be accepted; a few others favor $40^{\prime \prime}$ even though $40^{\prime \prime}$ would not fit either $16^{\prime \prime}$ or $24^{\prime \prime}$ stud spacing. Not all heights would be needed in all widths; for example, we would expect little demand for windows $6^{\prime}$ high in the narrowest widths. With the $3^{\prime}$ height only, one more basic width may also be needed to fit the standard $5^{\prime}$ bath from wall to wall. Perhaps this bathroom unit should also be offered $2^{\prime}$ high.

The two basic outside door heights we recommend are $6^{\prime}-8^{\prime \prime}$ and $7^{\prime}$. These would give architects and builders the choice of lining up their door and window heads at either $6^{\prime}-8^{\prime \prime}$ or the more often preferable $7^{\prime}$.

General acceptance of these few coordinated dimensions could save manufacturers millions of dollars by enabling them-and their suppliers-to concentrate production on a few sizes and by justifying a far greater investment in automation. It could save distributors and lumber dealers millions of dollars by minimizing their inventory. It could save builders millions of dollars by speeding up construction, by reducing
waste and, perhaps most important, by making it easy to predetermine window opening dimensions. It would let small builders cash in on quantity production savings now available only to big operators. It would save architects countless hours of design time coordinating sizes.

To realize all these savings we recommend that the door and window manufacturers and their various trade associations avail themselves at the earliest possible moment of the services offered by the American Standards Association Committee A62 to work out with them all the details that must be solved before the basic dimensions we propose can be issued as new national standards.

Over and above these dimensional proposals we offer two other recommendations to reduce the cost of door and window openings:

1. We hope more manufacturers will offer window and door units incorporating structural posts and lintels fitted to the $8^{\prime}$-plus-a-tolerance ceiling height that is now coming into general use in low- and middlepriced houses.
2. We hope that in determining many details that must be worked out for these coordinated sizes, the A62 Committee will bear in mind the importance of eliminating the costly cripples now required over many window openings and the extra studs usually required alongside.

# Detailing these standards will be a big job; so will getting all the builders to use them 



First the manufacturers and the trade associations must work out countless details of coordination before the American Standards Association Committee A62 can issue these sizes as American standards. No one should underestimate for a minute the problems that remain to be solved.

After the new basic sizes are put on the market there will be a transition period, short or long, when there will be just so many more dimensions on top of all those now available. Even after the transition is accomplished some special sizes will still be needed for custom-designed homes in traditional style.

## Fortunately:

1. This inevitable time lag means that manufacturers need not worry about having plenty of time to dispose of odd sizes in their present inventory.
2. Almost all new windows and outside doors go into new houses, so their makers are not tied to the past by a major market in the old house. This leaves them free to concentrate on dimensions that best suit today's kind of house.

To shorten the transition period we hope the American Institute of Architects, the National Association of Home Builders and the National Retail Lumber Dealers Association will give their support and encouragement to the new sizes.

We hope the builders, large and small, the lumber dealers, and the architects designing for the builders' house will all be quick to support the program in the most practical of ways-by ordering, stocking, and specifying the new dimensions as soon as they are made available. But the customers alone cannot carry the whole responsibility for speeding this transition.

The two quickest ways to encourage general acceptance of these wastesaving dimensions are within the power of the manufacturers:

1. They can give every builder a profit incentive to buy these sizes by basing their prices on anticipated volume and quoting substantially more attractive prices for units in these basic dimensions than they offer for odd sizes.
2. They can make it easy for architects and builders to specify these coordinated dimensions by cooperating in the publication of a special directory of modular components whose standard sizes will all fit together without waste.


Yost: The younger architects are trained to work on a modular base.


Plummer: The same window width that works for wood can be made to work for musonry.


Norman: We sell only one size of outside door.


McGehee: We can accommodate frame, brick or solid masonry by variations in our jumb detail.

Lendrum: I am campaigning for one thing only, and that is a window size that lets a builder carry on framing without interrupting his module.


Hopkins: The initiative must come from builders. Manufacturers will make what sells.


Lance: We'll be glad to cooperate with all interested agencies.


Thompson (right): The place to start is coordinating the framing.


Demarest: $Y_{o u}$ don't hate to give serious consideration to every multiple of $8^{\prime \prime}$.


Pollman: Fitting around an opening is a high.priced labor item and can be very wasteful of material.

## Six window widths would fit other wall components

In setting basic window widths, the No. 1 need is to make windows fit the other wall components, all of which have already been coordinated on $8^{\prime \prime}$ or $16^{\prime \prime}$ increments. Our proposal is simply to adopt these same increments for the fenestration, increasing window widths in $8^{\prime \prime}$ jumps up to $32^{\prime \prime}$ and in $16^{\prime \prime}$ jumps for wider openings.

The only erection problem this raises is how to make windows work simultaneously with both wood framing and masonry veneer. In wood framing, with its grid $16^{\prime \prime}$ on centers, the stud opening is bound to be one stud width ( $15 / 8^{\prime \prime}$ ) narrower than the nominal opening in the masonry.

How this can be met is indicated in the detail below, which shows that framing and masonry openings will work perfectly together provided:

1. The studs are carefully positioned right on their module.
2. Any extra studs are placed outside the opening.
3. The staff bead or brick mold is adjusted to compensate for the difference between the brick and framing openings.

The trim would have to perform a similar function with solid walls of brick or concrete block.

For manufacturers of repelitive window units the framing module will also pose a special problem for the first framing opening is also bound to be one stud width narrower than the spacing increment in the framing itself. Presumably some kind of spreader will be required to meet this discrepancy.


BRICK VENEER - WOOD D. H. - FRAME


BRICK VENEER - STEEL - FRAME

Principles of coordinating masonry end frame openings: 1) studs on modular grid; 2) brick mold compensated; 3) extra stud outside of grid line. These sketches are diagrammatic only; each manufacturer would have his own details-notes Leonard G. Haeger, AIA, who drew them.


Helms: The steel window manufacturers would go along. The question is: "What's needed?"


O'Connor: FHA rurely gets a plan now that is not well above the minimum requircment for windows.


Gillett: We huve continued to add new sizes to mect new needs, but we haven't cut out the old sizes.


North: We had to fit our big window to the stock sizes of double glass to get delivery is less than 180 days.

Lining up windows and door heights at either $6^{\prime}-8^{\prime \prime}$ or $7^{\prime}$ gives an ordered appearance to any elevation. The higher a window is in a wall, the better a room will be lighted.


## Three window heights would meet the needs of people

The three basic window heights we recommend will work with either $6^{\prime} \cdot 8^{\prime \prime \prime}$ or $7^{\prime}$ window heads, giving architects and builders a choice between sills at $3^{\prime}-8^{\prime \prime}, 2^{\prime}-8^{\prime \prime}$ and $8^{\prime \prime}$ or at $4^{\prime}, 3^{\prime}$, and $1^{\prime}$.

The No. 1 consideration for window heights is people. Three basic heights can satisfy all their needs. A $4^{\prime}$ sill height will not induce claustrophobia.

All of us believe that the higher the window head the better the light in the room, but in conventional construction $7^{\prime}$ seems to be as high as wide and narrow windows can be lined up under an $8^{\prime}$ ceiling. Even medium openings require a double $2 \times 10$ header under the plate, and wide openings would need steel or plywood reinforcement in the headers to line up at $7^{\prime}$.

In setting window heights, dimensional coordination with other wall components is much less important than in setting widow widths. Any desired window height works equally well with both wood framing and batt insulation, and in one-story houses any desired window height works equally well with brick or concrete block, since generally masonry should not be carried across the top of the opening. The three window heights we recommend would all permit cutting dry wall, sheathing, and exterior facing without waste, whether the window head is set at $7^{\prime}$ or $6^{\prime} .8^{\prime \prime}$.

In picking window heights to recommend, our No. 1 consideration was not for materials, but for people and most specifically for the sill heights people will find most satisfactory for various rooms.

Assuming a $7^{\prime}$ window head, the $3^{\prime}$ window would permit a $4^{\prime}$ sill in bedrooms,
bath, and kitchen. We are unanimous in affirming that this sill height is high enough for all reasonable requirements of privacy, even in bathrooms, high enough to permit placing all but the tallest furniture beneath it. We believe most people will find their rooms much pleasanter and much less confining if the sills are kept well below the $5^{\prime}$ level that has of late been common, and we note that at least one insurance company is refusing to take mortgages on houses with only such high openings because children cannot escape through them in case of fire.

The $4^{\prime}$ window height we recommend would give a $3^{\prime}$ sill under a $7^{\prime}$ head or a $2^{\prime}-8^{\prime \prime}$ sill under a $6^{\prime}-8^{\prime \prime}$ head. Either would be comfortably below eye level for anyone sitting down and just above table height. We believe this window height would meet all ordinary requirements of living and dining areas. The $6^{\prime}$ height we propose for extra big windows would allow space below for heating and wiring.

We anticipate that most of the windows used in builders' houses would be $3^{\prime}$ high, putting the sill at $4^{\prime}$ or $3^{\prime}-8^{\prime \prime}$. This would let architects design with the strong middle line often used to make a small house look bigger. Sills under $4^{\prime}$ and $6^{\prime}$ windows would be enough lower to avoid the unpleasant effect of a near miss in alignment.


## Two basic door heights are all that are needed



In recommending basic door opening dimensions for builder houses we had to recognize several facts:

1. Most outside door openings have already standardized at a $36^{\prime \prime}$ rough opening width which FHA requires as a minimum for at least one entrance.
2. It is impossible to coordinate this width with either stud spacing on $16^{\prime \prime}$ centers or masonry openings on an $8^{\prime \prime}$ module.
3. Since there are far fewer doors than windows, the waste involved in uncoordinated door widths is much less costly than the waste caused by uncoordinated window widths.
4. Most door openings have already standardized at a $6^{\prime}-8^{\prime \prime}$ rough opening height, the FHA minimum.
5. This is too low to line up with the $7^{\prime}$ height which is most often preferable for window heads.

In view of all this, we are not recommending any change in door widths, but we do recommend that doors should be offered in
two basic heights-the minimum $6^{\prime} \cdot 8^{\prime \prime}$ and the preferable $7^{\prime}$.

The one best way to reconcile door openings with the other wall modules is to incorporate them in prefabricated floor-to- $8^{\prime}$ ceiling panels, three stud spaces wide, with the doors prehung and weatherstripped.

Concerning the increasingly popular metal-framed sliding glass doors, we recommend that these be dimensioned to fit into the modular grid, starting with a rough opening width of $96^{\prime \prime}$ (minus) and increasing in increments of $48^{\prime \prime}$. We also recommend that they be designed visually to align with the head heights recommended for ordinary doors and windows.
We particularly recommend that the manufacturers of these large sliding units include a structural lintel and structural jambs as part of their package, since all but the smallest of these units require special and costly header reinforcement over and beyond the common double $2^{\prime \prime} \times 10^{\prime \prime}$. We urge the glass industry to adjust its double-glazing dimensions to the requirements of the most popular of these sliding doors- $48^{\prime \prime}$ widths and $80^{\prime \prime}$ to $84^{\prime \prime}$ heights.

Problem of lining up garage door height with man-door and window heights is too difficult to solve. Most practical suggestion: standardize at a $7^{\prime}$ height.


Garage cloors might be standardized at a $7^{\prime}$ height

We wish we could suggest some economical basis for lining up garage door heights with the other openings, but the lower level of the garage floor (usually $6^{\prime \prime}$ lower in the slab house, $18^{\prime \prime}$ lower with crawl space) makes this problem too difficult. The highest practical garage door height is around $7^{\prime}$, for many upward acting doors require $14^{\prime \prime}$ clearance; yet the lintel of a $7^{\prime}$ garage door would be too low to line up even with window heads dropped to $6^{\prime}-8^{\prime \prime}$.

We do believe that garage doors are now offered in many more sizes than are needed, and we recommend that garage doors might well be standardized on a height of $7^{\prime}$, with a single car width of $9^{\prime}$ and a two-car width of not less than $16^{\prime}$ and $18^{\prime}$. These are already available at prices lower than odd sizes.

This $7^{\prime}$ height would at least line up with a $7^{\prime}$ man-door opening into the garage itself.

House \& Home's consumer magazine review


## On the newsstands this month-

## —prefabs

## -new ideas for open kitchens

-a plank-and-beam house from the Northwest
-a flat-roofed house from Illinois
—and plenty of glass walls, open plans and new plans, houses with separate family rooms

This month, more than 6 million subscribers* of three leading consumer magazines are being told that they "should look at the many important advances made in the manufacture of prefabricated homes."

They are being shown pictures and plans of some new prefab vacation cottages, costing as little as $\$ 2,500$, as well as pictures and plans of a half-dozen new prefabricated all-year-round homes costing from around $\$ 10,000$ all the way up to $\$ 60,000$.

In short, prefabs are being given a tremendous boost. And since most of them are well designed by first-rate architects, good design is being given a big boost with them. Other consumer magazines are promoting open kitchens-kitchens that are so open that they were designed to look like living-room cabinetwork (which indeed they are).

And the rest of the consumer press, without exception, is giving its readers still another gentle push in the direction of quality contemporary design. Two magazines (combined circulation: $71 / 2$ million) are showing their subscribers advanced contemporary design in the traditionally conservative Middle Westhouses with flat roofs, glass walls, open plans and all the rest.


As we said last month: better keep your eye on the newsstand-because your customers do.

[^9]A big month for prefabs


Bellerllomes (Circ: $4,044,335$ ): "The best summer home buy yet!" BH\&G editors call this prefabricated Techbuilt vacation house designed by Architect Carl Koch. Two-bedroom version with fireplace, bath, complete building instructions costs about $\$ 2,500$.


Housed Garden
(Circ.: 517,023): The June issue is devoted to prefabs, introduces National Homes' new $\$ 16,000$ "Canterbury" designed by Architect Charles Goodman. Says H\&G: ". . . an example of American assembly-line wizardry."


Parents
(Circ.: 1570,566): In a long story written by MIT Architect Richard W. Hamilton PARENTS' readers learn that "acceptance of prefabs is snowballing . . . Home buy. ers, lenders, and government agencies have become enthusiastic boosters." So, it seems, have the editors of PARENTS.

## A big boost for the living kitchen



## GIVING

(Circ.: 520,303 ): "One of the handsomest features of the house [by Architect Paul Hayden Kirk] is the kitchen," says LIVING "Cabinetwork is walnut, well scaled."



## Howse Banlificu

(Circ.: 622,477): "Hottest news of all is the new concept of the kitchen itself as an indoor-outdoor food center, a place to give parties as well as to work" says HB, devotes 18 full pages to new equipment by all manufacturers, concludes that "in the wonderful world of kitchens, the dreams have already come true."

## A dramatic showing for plank-and-beam



## A modern trend in the Middle West



Good Iousckecping; (Circ.: 3,442,784): "A modern house can be pretty too," GH discovers, uses this nice flat-roofed, glasswalled hillside house by Architect Robert O . Hausner to make the point. For $25 ¢$, readers of GH can obtain sketch plans of "Pretty Modern House." The response will be interesting.

(Circ.: 3,074,666) "Luxurious without being extravagant, for its 2,080 sq. ft. of main floor area offer good living to a medium-sized family," comments AH. Architect Donald I. Grieb's house has an additional 412 sq . ft. upstairs, 600 sq. ft . in garage. Transition design contrasts flat and hip roofs.

. . . and a wide agreement on the use of glass



Waman's home ConPlivios
(Circ.: 4,162,500): "Your single-purpose rooms can do double duty," says WHC, of this handsome family room by Architects Campbell \& Wong. "By day it's an indoor play space for youngsters, and at night it helps the living room accommodate big parties, makes extra room for overnigiters."

# Ban on negative no-downs barely dents the boom and almost everybody applauds the move 

16-city survey finds record sales, little overhang of unsold homes. But gradual mortgage money tightening may dampen booming house output by autumn

The VA ban on negative no-down mortgages is not likely to do more than scratch the surface of the housing boom.

Builders and lenders in 16 cities surveyed by House \& Home last month reported business as usual-in most areas better than usual-and they saw no sign of a falloff ahead.
"It isn't going to make a bit of difference to us," said Big Builder Donald Metz of A1don Construction Co. of Los Angeles. "If people want to buy a home, they should be able to put up at least $\$ 200$ to $\$ 300$. . . We went into the no-no-down only because the competition did."
Commented President James W. Bailey of the Dallas Home Builders Assn.: "It should have been stopped a long time ago. Now maybe the 30 -year loans will be eliminated."

Start of a snowball? VA asserted that it had no further plans to brake its fastmoving home loan guarantee program. But the agency had voiced a similar hands-off policy only a few weeks before the ban on no-no-downs was issued late in April. With increasing attention from Congress focusing on the pros and cons of the boom, further restrictions of the government mortgage program were always a possibility.
VA knocked out absorption of the closing costs by the builder and had issued an order requiring the builder to certify that he had not given or loaned the buyer funds to meet the costs. (FHA issued a similar order, but its effect would be even smaller than VA's.) The important side of the VA order was that it presaged a harder look by the administration at some builders' habit of using give-
away inducements to sell their houses. VA pointedly reminded its field offices of "instances in which builders are advertising cash payments for moving expenses, premiums of one type or another and other tangible inducements to promote sales." Warned VA: "In addition, there has been some indication of other circumstances which tend to raise a question as to the propriety of VA valuations. Your office should maintain close scrutiny of such cases. ..."
Thomas J. Sweeney, VA loan guarantee chief, said there was no cause for worry over give-away tactics unless they got out of hand. The inference was that VA was going to pay closer attention to appraisals (Sweeney told a House committee that VA "had evidence of very poor compliance inspection" and was "trying to take corrective action") in order to cut down the possibility of $100 \%$-loan homes having less value than that specified on the CRVs.

Cutbacks on CRVs. Two other notable facts emerged in conjunction with announcement of the VA ban. One was that far fewer builders were actually using the no-no-down than one would believe from listening to all the hullabaloo about loose housing credit; the other was that VA has, like FHA, been rationing issuance of $\mathrm{CRV}_{\mathrm{s}}$ (firm commit-

## NONFARM HOUSING STARTS



[^10] was $1,309,000$, down from the March rate of $1,407,000$.
ments in the case of FHA) in several areas.
"It is something we have always done," Sweeney said of the rationing policy. "The discretion of when to slow down is left to the regional offices." He told an MBA mortgage conference in New York (see p. 41) that about $28 \%$ of VA loans closed last year were no-down but only $1.2 \%$ were no-no-downs. It had been previously established before the House veterans affairs committee that the average down payment on new houses purchased by veterans has been $5.4 \%$.

Hot weather expansion. Meantime, builders pushed ahead with new projects, undismayed by a slight tightening in mortgage money or the fact that they had to sell harder in some areas. Items:
"We have no overhang of unsold homes," said Philip Klutznick of American Community Builders in Chicago. "We expect to build as many or more homes during the next year as we did during the past one. You understand, there isn't the pressure demand for houses there once was. People who are in the market can afford to wait and shop. But they're buying."
Edward Rose \& Sons of Detroit had their biggest first quarter ( 212 homes sold) in 34 years. Said President Irving Rose: "We confidently believe we are on the way to setting a new record."
A poll of Portland, Ore. builders showed that $10 \%$ planned greater production this year, $80 \%$ the same as last year, and $10 \%$ somewhat less.

How much money? The present boom was feeding on mortgage money allocated last fall. The pinch that experts say is about to start will not really be felt until this fall. According to a cross section of lenders: "So far nothing serious."
That did not apply to no-down VA money, however. Commented one Louisville banker: "The market for $100 \%$ GI loans on future projects is almost nonexisient except with a five- to six-point discount." In Houston, 30year VA money had tightened within the last month, was going at a three-point discount. The implication of a continuing tight market for the still-approved no-downs was expressed by Stanley M. Earp, president of the Citizens Mortgage Corp. in Detroit: "The VA officials know that the mortgage company is charging the builder points-I would say it was at least a $5 \%$ discount-and naturally they will begin to look into the probability that the CRVs are too high." Earp's company, with a portfolio of more than 20,000 homes, is holding to $10 \%$ down payments on their VAs, has never taken no-no-downs.

Way down South and West. What was the situation in areas famous for their negative no-down dealings? House \& Home's survey showed this picture:

Miami: With a good $50 \%$ of home sales based on some form of the VA no-down, it was thought that the ban would hurt a little, but not drastically. The boom was still
"solid enough," said one builder. Commented Elliott Mackle of the big Mackle Co., Inc.: "A great many new people coming here are bringing money. They're not all looking for no-down-payment deals."

Houston: Home sales were also estimated to be $50 \%$ no-down, with about four-fifths of this segment no-no-down. Officers of the Home Builders Association estimated the ban would cut back total sales $10-18 \%$. The reason it would not hurt more, according to Association President S. N. Adams, was because "most of the buyers will be able to dig up the closing cost money." (Many builders and lenders felt this way. As Duane Sarles of the San Francisco VA office put it: "Buyers figured if they weren't asked to pay, why should they? It gave them a little more money to buy a TV set.")

Los Angeles: A rough estimate put $20 \%$ of home sales on a no-no-down basis. Earl S. Anderson, executive secretary of the Los Angeles Real Estate Board: "It won't be serious. As long as the influx of population continues and people need homes, they are going to have to buy them and anyone who buys a home expects to put something down."
Suspension in action. No-no-downs were few and far between in Dallas, but builders there were still up against a suspension of speculative firm commitments by the local FHA office pending an examination of the city's vacancy situation (see below). The cutoff was not troublesome. "Everybody except the Dallas builders are worried about this Dallas FHA suspension," said Hal McGraw, president of the Texas Home Builders Assn. Some erroneous wire service stories from Washington reporting that FHA had suspended all activity in Dallas (individual requests, minority housing commitments and conditional commitments were not affected by the order) had upset Eastern lenders and caused misunderstanding in other areas. But home buying in Dallas picked up after a slight March-April slump; most builders who were not still using pre-March 1 commitments had been able to find other financing.
1.5 million starts? The VA move, plus increased information on government commitment rationing and the market's own selfregulating mechanisms, seemed to have made for more optimism about the boom. Sen. John Sparkman (D, Ala.) remarked at a hearing of the Senate banking committee last month that he "was not afraid of the present level of home building." Moreover: "I don't believe the construction of 1.5 million housing units


LOAN GUARANTEE CHIEF Thomas J. Sweeney ( $r$ ) and Ralph Stone, deputy administrator for VA benefits, as they appeared before the House veterans' affairs committee.


FIRST TO HEAR of VA's ban on negative no-downs were members of the House veterans' affairs committee, shown the day they called VA officials in for discussion. Standing: Phil Weaver ( $R$, Neb.), William H. Ayres (R, Ohio), Charles M. Teague (R, Calif.), B. F. Sisk (D, Calif.). Seated: George S. Long (D, La.), Chairman Olin E. Teague (D, Tex.), Elizabeth Kee (D, W, Va.).
this year would be too much." Sparkman did say-somewhat equivocally-that he was not sure the housing was being built in the right places and expressed concern about the "virtual drying up of rental housing." Adminis:rator Cole, answering the implied criticism of the FHA cost certification requirement, said he did not know offhand how it could be eliminated, but averred he was willing to try to discover "some other way to prevent windfalls."

Sparkman also wanted to know how much more money a home buyer had to spend now than a few years ago and Carter McFarland, acting asst. HHFAdministrator, told him that the median price of a house has risen $35 \%$ since 1949 , while construction costs have increased $18 \%$. Half of total homes, he said, were now priced at $\$ 12,500$ or over, against one-fifth so priced six years ago. Sparkman deduced from these figures that
$50 \%$ of all homes are being built for families with incomes of $\$ 4,500$ or higher.

Seven million by 1960? More discussion of the price of housing came up at the committee's second round table. Prof. William Wheaton of the University of Pennsylvania's city planning department said the nation would need 7 million additional units by 1960 . To get them up, the industry would have to tap a large segment of the lower-priced market "now being neglected." Wheaton thought 800.000 units a year could be built for low- and middle-income families (the definition would vary with locality) without subsidies, but not at the going interest rate. He recommended loans at the "cost of the money to the government, plus an operating margin" (perhaps gained through FNMA assistance) to result in an interest rate of $31 / 2 \%$.

## Vacancies reach 10\% in Los Angeles, Dallas; surveys indicate buyers come from rentals

Rental vacancy rates reported in House \& Номе's 16 -city survey varied from next-tonothing to a startling $10 \%$.

It is almost as difficult to determine a city's vacancy rate as it is to pin down reliable figures on household formations, a fact that cuts the shock of the reported high-vacancy estimates and makes for re-examination of some of the lower estimates. But coupled with information on who is buying houses and why, the figures add up to a new look at local markets.

Cities with over 5\% vacancies:
Dallas: The local FHA office, at work on a survey of both rental vacancies and unsold houses, estimates that the rental figure may be as high as $10 \%$. Director Ellis Charles said it "probably is the highest ever," but emphasized that he did not feel this rate was having an alarming influence on the home market. Charles has said several times recently that he does not think Dallas is overbuilt ("But caution from FHA and builders is needed") and builders in the city are sensitive about reports that it is. Charles' point
that the rental vacancy figure is not as worrisome as it sounds is based on his belief that fast-building Dallas needs an above-average number of apartments to facilitate the location of families moving in from other areas.
Two principal types of buyers in Dallas are families with two or three children looking for a larger home ("New babies, not new brides, are increasing the market," says President James W. Bailey of the Home Builders Assn.) and older couples without any dependent children at all.

Los Angeles: Apartment vacancies are at an all-time high (the Los Angeles Apartment Assn. estimates it at $10 \%$ ) because of heavy home building. Apartment owners say it is impossible to rent an apartment when a family can buy a home with four bedrooms and two baths for the same monthly pay-
(continued on p. 170)

[^11]

## Can this simplified steel frame



"Yes," say its manufacturer and architect emphatically. And that's what makes this the most remarkable prefabricated package of ' 55.

For years architects, engineers and builders have believed steel framing could be competitive with wood for residential framing. Their reason: cyclical fluctuations in wood prices. Many previous steel systems failed because they tried to compete on wood's own ground: the tremendous ease with which it is cut, fitied and nailed. On this basis wood always ended up cheaper than steel. But this new system competes with wood by depending on scrupulous engineering rather than on imitating wood's qualities and because:
Dt is extraordinarily simple: its developers have worked eight years to engineer a frame that can be bolted together in half an hour with common tools.
It comprises only a few parts to erect in the field: six steel frames with preglazed windows and 16 steel trusses form the skeleton of a $1,150-\mathrm{sq}$. ft . house.

- Its modular dimensions inside and out integrate it with dimensionally standard components like plywood, exterior and interior gypsum and brick: except for cutouts in gypsum for electrical outlets and recessed lighting, no materials need be cut in the field.

Other significant features of the system: 1) It uses only one special connector almost throughout which converts gypsum sheathing and wallboard to structure on steel studs and trusses. 2) Its cavity wall is utilized for passage of sliding windows, doors and window walls. 3) Its exterior frame can house a variety of partitions-closet walls, even paper honeycom', core panels. 4) Its exterior can be faced with steel or concrete panels or brick. 5) It is almost fireproof, bugproof. 6) Thermal conductivity of its walls with a brick veneer is .24 or .01 lower than uninsulated wood framing; U factor in its walls with $1^{\prime \prime}$-thick concrete panels and no insulation is .30 .

As a prefabricated package, it is now being manufactured by the J\&B Mfg. Co of Houston, newest entry in the fast-growing prefab industry. It is being market tested in a nine-house cul-de-sac outside Houston where it was shown to the public May 22. Price range: $\$ 16,000$ to $\$ 18,000$ for three- and four-bedroom, two-bath, attached garage or carport houses including $\$ 3,000$ to $\$ 4,000$ lots.

Marketing plans at present will limit distribution to select builders in the Southwest and one Midwest prefabricator.


Manufacturer H. D. (Jack) Thompson stands in front of earlier test model steel frame. His metalworking experience includes metal house fabrication during war.


Architect Robert W. Clemens holds $2^{\prime} \times 6^{\prime}$ interior gypsum panel manufactured especially for frame designed on $3^{\prime}$ module.

## Frame is erected in four hours with an eight-man crew



8 AM: Truck arrives at site with complete first load: six sections of steel frame, 16 steel trusses, 34 galvanized steel, paint-grip birdstops, plywood for roof, two gable ends, exterior gypsum for wall sheathing, concrete panels to go over windows, metal spline connectors and nails.


8:30 AM: Four walls are up, leveled with metal shims, anchored to slab with bolts. Wall sheathing operation in field was speeded when manufacturer started to deliver frames with sheathing applied under all windows (see photo right, opp.), adding only negligible weight.


11:40 AM: Vented metal gable end, shipped to site in two pieces, is placed. House has been completely sheathed with exterior grade gypsum by means of special galvanized steel splines (details, p. 142). Eight-man crew can comprise three carpenters, five unskilled laborers.


8:05 AM: First of $3^{\prime}$ o.c. stud-spaced frames, with preglazed windows inserted, is unloaded. Heaviest frame weighs almost 400 lb . and can be handled by four men. Exterior gypsum is site applied since it would double weight of portable frame. Other frames have prehung doors.


8:35 AM: Trusses are placed $3^{\prime}$ o.c. over studs. Plywood sheathing (see below) is nailed directly to 16 -ga. steel trusses with helically threaded nails spaced $12^{\prime \prime}$. Trusses, manufactured to factory tolerances, square frame at top, allow application of plywood in precut $4^{\prime} \times 6^{\prime}$ and $4^{\prime} \times 9^{\prime}$ sheets.


11:45 AM: Workmen put finishing touches to exterior: here birdstops are fastened to trusses over windows where concrete or metal panels will be inserted. Within 15 minutes, before lunchtime, house will be ready for mechanical trades and interior partitioning (see pp. 142-143).

Square steel gussets, three at a corner, are hammered into place, bolted with common $3 / 8^{\prime \prime}$ bolts that tie all wall sections together. Frame goes together


Trusses are bolted to 16 -ga. steel lintel through steel flange which was shop-welded to truss. Connector is $1 / 4^{\prime \prime}$ bolt. Tool used is screw-type wrench. Note (right) how continuous lintel eliminates window headers. was shop-welded to truss. Con-


Steel birdstops are nailed through prepunched steel trusses at top, fastened to asphalt-painted steel studs with wide clips and $1 / 4^{\prime \prime}$ bolts.



## Simple connectors, common tools

 are used to assemble steel frameFull complement of tools needed to erect house comprises hammer, wood saw, level, metal snips, pliers, taping trowel, drift pin, wrenches. Connectors, with exception of the metal spline (next page), are all common $1 / 4^{\prime \prime}, 1 / 2^{\prime \prime}, 3 / 8^{\prime \prime}$ bolts or helically, threaded nails used to apply plywood roof deck to 16 -ga. steel trusss. Studs were placed $3^{\prime}$ o.c. to get a wide, mullionless window in a single unit ("a $2^{\prime}$ window would have been too narrow"). A 4' stud spacing would have been too wide for a light steel frame and would have forced use of roof purlins between trusses anchored over studs, thus adding many more connectors.

Frames are aligned to a string pulled from corner post to corner post, are knocked into line by sledge. Wide, eccentric-centered washers over metal shims permit anchor bolts to grip frame to slab near $3^{\prime}$ o.c. studs.

## Frame is engineered to lowest common denominator of field crew skills



Corner post permits $3^{\prime}$ module

## both on the interior and exterior

Corner details solve ticklish problem of utilizing $3^{\prime}$ module inside and out: exterior gypsum is applied to outside in $3^{\prime}, 6^{\prime}$ or $9^{\prime}$ lengths; on the interior instead of one gypsum sheet butting against another, each barely touches, leaving a $1 / 2^{\prime \prime}$ square void. 'Corner cover plate (right, above) ignores module. Corrugated metal strips are welded to splines and corner to form brick ties.

## Frame is engineered for

preglazed, disappearing windows Cavity wall formed by two T -shaped structural shapes, welded together by steel straps, is $51 / 2^{\prime \prime}$ deep on inside face, allows passage of single-hung window on top track. Although no insulation is used in Houston houses because of two-cavity wall (other cavity is formed between sheathing and brick facing), insulation batts as thick as $23 / 16^{\prime \prime}$ could be applied in steel wall cavity without windows or sliding doors snagging them. All window trim is within grid lines of the $3^{\prime}$ module. All other trim is flush.


Splines convert gypsum sheathing to structural material
Chief new structural technique-and key to whole system-is a metal spline used to apply gypsum to steel studs. Splines are friction fitted to a $T$-shaped hot-rolled structural shape (the stud); $U$-shaped channels grip special $2^{\prime}$-wide gypsum sheets above and below, thus act like girts every $2^{\prime}$ and meet FHA requirement for $2^{\prime}$ o.c. spacing simply by turning requirement on its side.



## Inrerior partitions: steel studs, splines and dry wall

Same spline system used on exterior is utilized to construct interior partitions. After outside walls and ceiling have been dry-walled, $16-\mathrm{ga}$. steel sills are anchored to slab with stud gun. Clever leveling jack which is merely the base spline and two bolts can be raised or lowered to take up slack in slab-to-ceiling height ( $8^{\prime}$ plus tolerance). Splines are taped over as nails in dry-wall finishing.



Interior partitions are wired
by drops from ceiling

Metallic cable is dropped from ceiling between $2^{\prime \prime}$ studs and connected to boxes by steel L-plates secured to channel-like studs. Low-voltage wires for remote switching are dropped in same manner. Note holes for recessed lighting in celing. Interior partitioning, say developers, is comparable in time to conventional building.

## Double wall around plumbing

## gets pipes in without cutting studs

Open stud lets pipes pass through partition horizontally, eliminating frequent need to cut or notch as in wood framing. Ceiling panels in $2^{\prime} \times 3^{\prime}$ rectangles are attached to trusses by splines. Manufacturer points out that extra taping required by formation of many more joints is largely counterbalanced by elimination of nail spackling. Ceiling and base trim are snapped in place. Only two basic corner posts are used for interior partitioning.



Staging its own Parade of Homes, J\&B's first nine houses were sited in a well planned court (see plot plan, opp.). Air conditioned house with family room, two baths, features master bedroom on opposite side of house from children's rooms (left). Note from grid lines how architect maintained 3 ' module on all major partitions; interior module starts on inside face of inside walls. A custom-designed L-shaped house came off drawing board April 15, will be finished for June 11 opening of Houston Parade of Homes. Public showing of nine houses, unfinished as House \& Home went to press, will be May 28.

## What prefabricators and building experts think of steel framing



Len Haeger, technical director, Levitt \& Sons: "I'm one of those who think that steel framing will ultimately be made practical. I'm dubious about the possibility of it being competitive with wood at present. The sliding window in this system may force it into a limiting situation much as a nailable steel frame prescribes its own limits. The ultimate solution to steel framing will be simple tools designed for the system; it is to the credit of this system that the tools are all simple ones."


Burnham Kelly, left, MIT professor, author of "The Prefabrication of Houses," industry source book: "I'm glad to see someone trying to use steel again but disappointed that it is not being used in a bold new way. Many will ask the question I do: 'When you have a structural steel system. why face it with structural brick?' The framing itself looks cleanly detailed."

John L. Morley, right, president, Midwest Houses: "Here is the basis of a system that could end by producing a steel house that could compete with wood. Right now the system will compete very successfully in the Southwest."


Ned Cole, president, Fabricon, which uses a steel truss: "Detailing is simpler than most other residential framing systems and the frame seems to be well engineered. The fact that there aren't many pieces to go together is a big point in its favor. The sliding windows pocketed into cavity walls are new, different and good. It is possible that the system may have to freeze on just a few basic plans and elevations. Studs are open enough to avoid the condensation problems inherent in steel framing."


Robert W, Clemens, Charles B. Wilson, associated architects

System is adaptable to host of exterior treatments ranging from steel through plastics. Note in model elevations how nontraditional materials are first being introduced in carports, garages, fencing, over and under windows where developers think public acceptance is most likely. More steel will be introduced, first in closet wall system.


Horace Durston, president, American Houses: "This system will interest prefabricators chiefly because steel is more stable in price than wood. That's important because prefabbers must make advance commitments on materials. Over the years we have been looking for a satisfactory substitute for wood. If steel costs the same as wood, this could make a most attractive package to all builders."
D. Rubbins


Howard Vermilya, left, vice president. American Houses, "There should be no difficulty with mechanical trades, not much conductivity through walls. I wonder if the use of gypsum with brick will limit the market: not everyone can afford brick. Flexibility in house appearance, important to buyers, is here, though.

Dave Slipher, right, chairman, NAHB Research Institute: "You cannot put enough value in a panel unless you put the ultimate in labor and finish in it; it makes no difference if the panel is a big steel frame. The big question is how much of this house can be packaged as a finished product."


Robert Lytle, president, Modern Homes Corp., which uses a steel floor framing system: "This frame accomplishes only as much as others-structure. It doesn't get deeply into finishing, the major problem of builders. Gypsum limits it. But the introduction of steel in a frame is important, the disappearing windows a major advance, elimination of headers over windows excellent. The system leaves an awful lot of work to be done on site."

## \$50 for each new way!

House \& Home will pay $\$ 50$ to any architect or builder who sends in a new way "to build better for less" that is published in this monthly department. Contributors must include all the needed pictures, drawings and facts, and of course the editors' decision on what suggestions would interest our readers must be final.

House \& Home is always particularly pleased to publish a new idea developed by a small builder that big builders will have to borrow and copy!

Send your suggestions to: H\&H, new ideas editor, 9 Rockefeller Plaza, New York 20, N.Y.

# 9 more ways TO BUILD BETTER FOR LESS 

This is the third of a series of cost-cutting articles appearing regularly in House \& Home

## 27 Taping tools produce smooth joints

"We are very happy with the job we get using taping tools for the joints in our drywall installations," reports The Schuermann Construction Co., of St. Louis. Builder Schuermann has used the tools for $11 / 2$ years, finds the clean and uniform joints reduce buyer resistance to gypsumboard interior finishes.
Since the tools nearly eliminate human error, workmen can quickly be trained to produce uniformly good jobs. One builder reports a saving of ten man-hours per house. Several varieties of the tools are available to do any number of tasks from laying the tape in mastic to applying the final finish with perfectly feathered edges. As sanding is kept to a minimum and loose spackling compound is not spattered on the floor, clean up is kept at rock bottom.



Finishing tool above has self-contained supply of mastic which is automatically ejected and spread to produce a uniform joint contour.

Taping tool shown above lays tape in bed of mastic, can travel horizontally or vertically or across the ceiling. Tool at right is used later.

## 2 8 Multipurpose framing system saves \$200



In the past when splitting and checking of exposed rafters in Builder Tom Todd's houses forced him to box them in, he looked fast for a cheaper solution. Now he saves the $\$ 200$ cost of casing and has a recessed light and electric raceway to boot. He replaced the timbers with a pair of $2 \times 10$ 's separated by a $4 \times 4$, all more dimensionally stable than the timber. The $4 \times 4$ is kept far enough below the plank deck to allow for a wiring chase, and a fluorescent lamp is mounted below the 4x4. Quarter-inch mahogany plywood finishes off the bottom of this laminated beam. Openings sawed into it allow the lamp to project light where it is wanted.


3-in-1 rafter currently uses fluorescent fixture, will eventually have ordinary lamp receptacle and standard bulb, a further saving.

## 2) Intelligent stock piling saves $\$ 200$ on every iob



BOPP
Ferd Bopp, a custom builder in St. Louis, plans his material stock piles carefully because he is sure he saves over $\$ 200$ on every house that way. Organized well in advance, his materials are scheduled to arrive at the site at the proper moment to be stock piled in logical order of use. Nothing is put further than a few steps from the house. Builder Bopp once added up the time his carpenters spent walking back and forth to a lumber pile $50^{\prime}$ from the house, found it staggering. "But you must use judgment," warns Bopp. "Cement cannot be delivered in advance, but lumber will be well seasoned if stacked properly, well ahead of use." And Bopp believes in having lots of tarps, stepladders on the job.


Builder Bopp would prefer to "strip" his lumber stacks, then cover them with tarps

## 6) Natural wood interiors match dry-wall costs



DRUMMOND
"With no increase in cost we can offer mahogany-paneled interiors," says Builder Don Drummond. He often uses cheap (about $14 \not \subset$ per sq. ft., in Kansas City) $1 / 4^{\prime \prime}$ plywood in conjunction with other wall materials, finds that it lends luxury at no extra cost. Either redwood or rotary-cut mahogany plywood is used, sometimes (on exterior walls) glued to the studs, and sometimes nailed. It is quickly finished with one coat of shellac followed by one coat of dull varnish, with a light sanding between. Further savings result from the elimination of door and window trim and nail-hole puttying because of the few nails.


Countersetting nail heads is unnecessary because only a few are used, to hold panel against studs which have been brushed with glue.

## 31

Pecky cypress makes inexpensive exterior walls
"Just about the cheapest wall material we can use," also reports Don Drummond. He uses vertical boards (usually $10^{\prime \prime}$ or $12^{\prime \prime}$ width) with $1^{\prime \prime}$ battens. For smaller houses he occasionally uses $6^{\prime \prime}$ or $8^{\prime \prime}$ boards, but never in random widths. The worm-eaten material described by local FHA officials as "so bad it looks good," was, however, accepted by them.

The $1^{\prime \prime}$ boards are applied rough sawn and stained, a fast and inexpensive process. The walls have a rustic and attractive appearance that appeals to buyers. Because of the low cost (about $\$ 145$ per M in Kansas City) and because it looks and weathers well, several other builders in the area have begun to use pecky cypress.


Using the board and battens only on his smaller houses, Builder Drummond finds that the shadow lines add architectural interest to simple masses.

## 32

Save $\$ 20$ with simple soffit detail


Schlesinger
The clever soffit shown at right saves St . Louis Architect-builder William Schlesinger six carpenter-hours or about $\$ 20$ per house. "It goes up in a hurry and gives a good tight job," says Schlesinger, who now uses it as a standard detail. Horizontal cuts are made on the rafter ends to afford nailing for the plywood soffit, and the fascia board is rabbeted to provide a weathertight joint at the eave. Schlesinger formerly used a standard soffit with $2 \times 4$ lookouts above it, finds this one better all round.


## 33

A bonus that St. Louis Builder Schlesinger gives to his buyers is the ready-made curtain valance shown at right. While the buyer must ordinarily invest about $\$ 25$ to enclose the drapery track, Schlesinger is able to do it during construction at no extra cost. The trick he uses is simply in allowing the slightly oversize cornice molding to pass directly in front of the window offsets. He thus creates a pocket over the window that is as deep as his interior window reveal. While this is not applicable to all types of construction, many builders can use it with very little adjustment of their window details. An added attraction is the tidy look of the continuous ceiling molding without the usual protruding valance.


## 6) Eggbeater eliminates stem wall forms

An ingenious attachment to their trenching machine allows Strauss Bros., Builders, of Lincoln, Neb., to dig the foundation stem walls and spread footings in one operation. Designed and built by Partner Abe Strauss for less than $\$ 500$, it has paid for itself many times over, since the machine leaves a perfectly shaped footing and foundation form in the ground, ready for concrete. No concrete is wasted.
The trenching machine digs itself in to footing depth at the starting corner, excavates a $16^{\prime \prime}$ wide, flat bottomed footing and $8^{\prime \prime}$ vertical stem cavity about it. Concrete is poured, screeded at ground level. The $1 / 4^{\prime \prime}$ steel pins are forced into the still-wet concrete, projecting about $4^{\prime \prime}$. These pins later tie the rough foundation to the finish foundation, poured above it.

> A conventional trenching machine was used as basis for the special implement . . .


## 6) One man carries $25^{\prime}$ of sewer pipe



A booster for lightweight fiber pipe in sewer installations is Little Rock Builder, Jack Bracy. After using it in over 1,000 homes, Bracy says: "It gives a better sewer, we get a more perfect job of laying, and it definitely is more root proof. In addition, we think we save approximately one cent per foot." Other features of the pipe that appeal to Bracy are the easy transportation of the pipe to the building site and fast handling on the job. In a typical Bracy installation his two-man crew digs the sewer trench (with machinery), lays the fiber pipe and backfills in a total time of $11 / 2$ hours. The pipe is made by several manufacturers, is available perforated (for drain fields) or solid for piping. Various fittings and bends are made to fit the standard $4^{\prime \prime}$ pipe.

. . . which is shown here with the pro. peller-type attachment about to dig itself into the ground. Strauss Bros. are delighted with it.


Connector is tapped onto tapered end

. . . and next section fits into it

## flat roof fascia details

Ben Schnail


Fascia detail, designed by Architect Marcel Brever, features 1) a metal gravel stop that cannot be disfigured by workmen's ladders marring the roof lines, 2) a wood trim that acts as a drip, and 3) a cement-asbestos fascia that is inexpensive and permanent. At Croton-on-Hudson, N. Y.


This wood fascia is sloped to protect it from the weather and to give a long subtle line to the roof. Designed by Frank Lloyd Wright, it provides a drip at the bottom of both boards used in the finish fascia. Mr. Wright has many variations of this detail for flat roofs, often uses a metal fascia. At Charles City, lowa.

Ulric Meisel

This flat roof detail by Architect Edward Larrabee Barnes incorporates a recessed lighting trough and curtain pocket. Note Barnes' solution for the different roof levels, caused by the change in structure where overhangs meet the major roof construction. Ati Fort Worth, Texas.



Live photo by Richard Meek
This clerestory cupola admits light and ventilation to a central utility core. Its trim construction is similar to that of the rest of the house, designed by Architect John Johansen. Hopper sash is operated from inside with an extension pole. At New Canaan, Conn.

For a mild climate, Architect Victor Bruno finds this an inexpensive skylight solution. Glass is fastened to the frame with bolts through holes drilled in glass. Bruno also uses a skylight having a metal collar that turns up over edges of glass. At New Orleans.

This plastic skylight has been so successful that it has been put into production by a manufacturer. Designed by John Black Lee, it features a flange that is built into the roofing, forming integral flashing. At New Canaan, Conn.

This little skylight is seated in mastic on a metal flashing collar. The light is a split glass block, available in most areas. The box is lined with aluminum for maximum light reflection into the room below. Designed by Charles Warren Callister. At Belvedere, Calif.


2
2
2
N



Danny Wann


Minor White



Should you use treatment plants
or septic tanks?

## Do you know the economics of sewage?

This year 400,000 new homes will have septic tank systems. That means builders are spending more than $\$ 100,000,000$ this year for this kind of sewage treatment.

That is too many and too much. One-third of all new urban nonfarm houses is too high a share of housing to get septic tanks. In many cases-no one can say how many or where - these systems will cost both homebuilders and buyers a lot of extra money and trouble in years to come. Sanitary engineers say septic tank systems are the most complicated form of sewage disposal known. Although the federal government has just completed a $\$ 300,000$ nine-year study of them, a lot of the answers to why they sometimes work and sometimes fail are still unknown.

Most new home owners will get public sewer facilities this year. In nearly all such cases, this means lower sewage costs in the long run. Obviously, builders connect their houses to existing sewer lines whenever possible. And some go a step farther, erecting their own treatment plants and providing sewer lines. Few who do so make a mistake; in fact, many find it a most profitable move.

Septic tanks are often the economic solution, nevertheless. The question is, when? Few builders know:

1. Septic tank systems may not be as cheap and safe as they seem
2. Sewage treatment plants are cheaper than they look
3. In the absence of existing sewers, either may be the answer
4. The choice often depends on the condition of the soil

## FLAT ROOF DRAINAGE DETAILS



Julius Shulman


By extending the gutters well beyond the eaves, Architect Richard Neutra keeps rain water away from foundations, creates a pleasant architectural effect at the same time. Square-section gutters are inexpensively produced in local sheet metal shop. At Beverly Hills, Calif.


Architects E. H. and M. K. Hunter are convinced that flat roofs are most suitable to areas with deep winter snow. Some of their reasons: 1) It is desirable to maintain snow on a roof as extra, free insulation, full of air cells. 2) Pitched roofs must usually be shoveled after a very heavy snowfall because they are not designed to carry the heavy snow loads that sometimes accumulate even though the roof is pitched. 3) The membrane type of covering which is used on flat roofs is the best and least expensive type available. 4) Flat roofs may be flooded for summer cooling. 5) Unless the roof pitch is expressed inside the building, the cubic feet lost in pitched roof construction
is an expensive waste of space. While some of these items apply to all areas, the Hunters find them very important in New Hampshire.
When designing flat roofs for their area, the Hunters begin by computing a load of 70 lb . per sq. ft ., which allows for $4^{\prime}$ of wet snow. They use a strong gravel stop detail, and flash and counterflash at chimneys. They handle drainage cleverly-interior roof drains are installed next to the heater room flue to avoid freezing, a serious problem in the area. "Around here no gutters are practical since heavy ice soon removes them, opening up the roof for leakage," say the Hunters.


Torn-up lawn is one nuisance homeowners face if septic tank system fails. Failure occurred for this New York flat top after only two years. The builder had had plan for system approved by local building inspector. First sign of failure: effluent backed up in bathroom. Diagnosis by service man: not enough tile. Cost of tile line and cleaning tank: $\$ 75$.

## Septic tanks present a paradox:

## today septic tank systems fail less often technically but builders face more red-tape trouble

For a time after the war, unwary builders were having more trouble with septic tank systems than almost anywhere else. There were plenty of reasons:

- Many builders were developing land in the suburbs for the first time, out beyond the sewer lines. They had had no experience with septic tanks.
-There was little dependable scientific data on septic tanks. They had been developed in rural areas. If one went wrong on a farm, there was so much land it didn't make much difference.
- What might originally have been an adequate prewar tank and drainage field became inadequate under overloads from the new automatic washers, the new garbage disposers, the new baby crop with all its diapers, and the second bathroom.

In the past few years, considerable knowledge of septic tank systems has been developed for builders, subcontractors. government health and housing officials, state and local authorities and to some extent home buyers themselves.

Most builders no longer need to worry about their septic tank systems working, provided they follow proper procedures in installing them. New knowledge of what kind of tanks and tile to install, how to test soil, what to do about extra water from automatic washers and waste from garbage disposers is available
which could prevent $80 \%$ of failures. In fact, FHA experts say nearly every case of failure they have investigated could have been prevented by proper engineering. But even so, too few people in the field who approve plans or install the systems know much about the subject. In half the counties of the US, there are only part-time health officers. They pay less attention to housing sanitation than to other health problems. And most sanitation officers have their own pet notions about septic tank systems, which is why there are almost as many different state codes governing septic tanks as there are states. FHA's preferred code-five years old and somewhat out of date already-has been adopted in only ten states. But it has also been adopted in Alaska and Puerto Rico, evidence that it would be suitable in all states.

Wary, experienced builders are still having trouble, but of a different kind. Now they are having trouble largely with FHA, VA and local health authorities; all are making it harder to put in any septic tank systems, much less inadequate ones.

FHA, VA and the US Public Health Service are slowly making progress-held back by slow-moving state health authorities and their own inadequate staffs-to spread the new knowledge about these systems. Over the long run, however, this means fewer and fewer installations. The time will probably come when very few states will permit big builders, even those putting up as few as 25 or 50 houses in a project, to get along without public sewers.

## Sanitation is the first problem to solve <br> whether you are building one house or 1,000 <br> If you are considering use of septic tank systems . . .

There are eight things to do before you buy the land

## 1. Make a rough appraisal of the soil

Size it up for texture, structure and color.
Texture can best be judged by the feel. The best, light, sandy soils feel gritty when rubbed between your fingers. Silty soils feel floury: when wetted they have no cohesion. Heavier clay soils are dense and hard when dry; when wetted are slick and greasy.

Structure. Its nature can be recognized by the way a clod or lump breaks apart. There are four fundamental structural types, according to the shape of the particles and the way the clod breaks: platy (poorest for absorption), prismlike, blocklike and spheroidal (best for absorption).

Color is an important clue. Most soils contain some iron components which take on a reddish-brown to yellow color if the soil is alternately exposed to air and water. Thus, a reddish-brown to yellow color indicates there has been free alternate movement of air and water in the soil. Poorest soils are dull gray or mottled, which indicates little movement of air and water through them, thus poor absorption characteristics.
2. Get a soil map of the area from the Department of Agriculture or a state agricultural college, and study it

## 3. Ring doorbells in the area

If you are new to the area and have any doubts at all about the soil, ask home owners if they have had any trouble with septic tank systems. Frequently what appears good absorptive soil will be found giving people trouble. (Not that they always realize the occasional plumbing trouble, fetid odors or wet spot in the yard are caused by failures.)

## 4. Drill $6^{\prime}$ to $10^{\prime}$ to determine water table, find height of rock or hardpan

In one state this spring a builder tested some soil, found it nearly perfect for absorbing effluent and bought the land. Then he was shocked to be turned down by FHA. Reason: hardpan lay just below the drainage-tile level. He had not made a drill test.

## 5. Think twise if you will need to grade

Remember that septic tank fields almost never should be placed in backfill, and grading often takes away the good topsoil from cut-away land. Some areas require grading plans with $2^{\prime}$ intervals to determine more adequately the final grade and soil tests at final grade whenever it will be changed more than $1^{\prime}$.

## 6. Make a percolation test, at least one hole per acre

The most important finding in the government's nine-year study of septic tank systems is that they must be geared to the soil. This can only be judged safely by a percolation test, although in itself it is not always sufficient. Legal requirements for such tests vary widely. Wise builders will often spend more money to go beyond what is required. Best procedure: follow the recommendation in the government's research report as far as possible. That method is described in full on pp. 178-179, as is a table for applying any such soil test to various houses.

## 7. Get FHA approval

If you want FHA mortgage insurance, get the FHA to pass on the soil absorption qualities before you proceed, even though you have approval from a sanitary engineer or local health authority. Play it safe. Often the FHA knows best about soils in an area.

## 8. Follow the FHA minimum standard

The FHA has a master standard for septic tank systems which is the closest thing yet to the findings in the government study.* This has been adopted in several states.

# What about the costs of treatment plants? 

## The question is

not whether builders and the public can afford them
but, rather, can builders afford not to have them?


This "packaged" treatment plant was bought by J\&P Land Developers, St. Petersburg, Fla, to serve its 800 -home Garden Manor development. Total cost including sewers: $\$ 250,000$. Homesite values increased about $\$ 500$ with this installation.


Primary treaiment plants sometimes suffice for sewage treatment and of course greatly reduce costs. This plant in Center, Colo, serves a population of about 2,000. Unit includes upper compartment for clarification and separate sludge digester.

Most 50 -house builders can double their profits by putting in sewage treatment plants rather than septic tank systems.

That is so even though the cost per house of a large treatment plant may be double that of many small septic tank systems.
The public benefits monetarily as well as by getting superior sanitary facilities. For one thing, builders can actually sell houses for less when they provide community sewage systems at a higher cost per house. (This is only the immediate gain to home buyers. But ultimately, septic tank system costs are inevitably greater.)

In some cases, these facts hold true for builders of even 25house developments.

The most remarkable aspect of these economic facts is that so few experienced builders have learned them.

It is true that costs of treatment plants, sewer lines, engineering and legal fees vary widely, sometimes even in the same locality. It is true that some builders cannot set aside enough money for a big plant when they start a development. It is true that in some areas there is no way to dispose of the purified effluent from a treatment plant. It is true that some local governments (in fact, one whole state) will not permit such plants.

It is also true that some or all of these obstacles have been overcome by some builders who are now much more successful because they provide community sewage systems (which they can turn over to the community free at no cost to themselves).
And it is true, as the examples on the next page show, that some land-otherwise uneconomical to develop because soil conditions rule out septic tanks - can be used only if treatment plants are installed.

Perhaps the biggest obstacle the builder must overcome is the appalling lack of information extant about treatment plant costs and engineering. There is no one source of information on it. Sanitary engineers and equipment manufacturers have many widely varying ideas on the best way to handle a specific plant set up. The federal government survey of household sewage disposal did not cover any aspect of community sewage. Builders' best current source of information is other builders who have had experience with treatment plant problems.


## On Grosse lle, a plant at $\$ 200$ a house

In Michigan, the first sewage treatment plant for a builder's development went in last winter. Rossin \& Ringler, who built it near Warren Village, are now starting a larger development on much neglected housing-site Grosse Ile in the Detroit River. Total cost per house in each case: $\$ 200$.

As a result, Johnson \& Anderson, the engineering firm that designed the plants, now has plans on the drawing boards for 15 other plants, all for builders.

Partner Paul Ringler paved the road for builder construction of sewage systems for two reasons: (1) unfavorable soil conditions would have made septic tank systems cost $\$ 600$ to $\$ 700$ a lot, and (2) he believes a builder should not risk his reputation on the future of septic tanks (homeowners usually must bear a future double cost of sewer facilities, meanwhile frequently paying upkeep costs).

He found that a complete treatment plant would run to only $\$ 500$ per lot, or $\$ 75,000$ for his 150 houses in the first development. He obtained the community's willingness to accept the plant, as the state requires. He also agreed to build it bigger so another and larger builder could use it. The plant as completed takes care of 600 houses. Total cost: $\$ 120,000$. Cost per house: $\$ 200$.

Now Rossin \& Ringler are starting a 450 -house development on the choice Grosse Ile island area (where septic tank installations are costly). Since the plant need provide only primary treatment, it will cost $\$ 85,000$, will handle 900 houses. The building firm is giving the plant to the township as a gift. For the builder's own development the cost is $\$ 200$ per house.

The plant will be entirely underground except for a small attractive pump house which looks like a residence. The plant is guaranteed against noise and odor, and is only $100^{\prime}$ from the nearest real house.

Small treatment plants like these have been designed for builders in California. In some cases, two or three builders jointly finance one plant. Engineer Harry Jenks of Palo Alto has designed such plants for complete treatment that cost as low as $\$ 10,000$ for 100 connections (plus $\$ 2,000$-up for disguise as houses). Extra costs for sewers, fees vary. Clear effluent is used for landscaping, ponded or allowed to percolate into ground. Small amount of sludge can be used as fertilizer. Jenks estimates a $\$ 35,000$ plant serving 200 houses plus average sewer, outflow line and other extras costs about $\$ 300$ a home in the area, or less than septic tank systems cost.


## Treatment plants are going in all over

In St. Petersburg, Fla. Builder Mark J. Emden turned from a "nightmare" with septic tank systems to a development with a treatment plant giving him "a very definite sales advantage and lot appraisals more than offsetting the additional cost."

In Wichita, Realtor Don Morris developed a large tract with a treatment plant on the prized northeast side of the city, where septic tank systems called for 1,000 -gal. tanks on half-acre lots.

In Hillsboro, Ind. Engineer C. O. Snyder has just designed a treatment system for a 100 -house project at $\$ 500$ a house.

## With one plant, room for swimming pools

"Prospective purchasers smile when told there are no septic tanks." Builder Randolph Parks of Sacramento has found reasons of his own to smile after providing a sewage treatment plant for the 400 homes of his Parkway Estates development. Cost per lot was only $\$ 180$, far less than septic tank alternative.
"Within the development," he says, "there will never be a tank to clean or a tile field to add to. With this system, garbage disposal units can be included in the house with freedom from worries of tank overloads. Septic tanks mean no chance for owners to put in swimming pools, terraces and the like. The investment of the home buyer has been insured and increased."

Another Sacramento builder who finds cost lower, customers happier with community sewage is J. G. Heckes of Heckes \& Hurst.

The developer is building a plant for $\$ 181,000$ which is big enough to serve 1,100 acres with an average of four houses per acre. Entire costs are far less per house than average septic tank cost would be in area.

## "Houses with sewers outsell other houses ten to one"

In Congers, N. Y., Builders Eugene Blumenthal and Philip Shapiro are selling houses cheaper because they have a sewage treatment plant that cost $\$ 800$ per house.
Because they put in a treatment plant for 200 houses, the local town government permitted them to build on 10,000 sq. ft . lots. Houses with septic tanks must have 15,000 sq. ft . lots. This difference allows the builders to make a good profit on an additional 40 to 50 houses.

Paradoxically, the doubled cost of sewage per home over septic tanks reduced the builders' costs and permitted them to price the houses lower. There were more houses sharing the cost of streets, drainage and other offsite improvements, so that this cost was pared per house. And the houses sold faster, reducing selling costs and interest.
"The value of a home to its owner or a lender is stepped up $\$ 800$ to $\$ 1,000$ with urban facilities, chiefly the sewers," says Blumenthal. "Our houses sell for $\$ 15,500$ up, but that applies to any house over $\$ 12,000$ in a project of 50 or more. Our prospects are accustomed to the convenience of city sewers. The first thing they want to know is whether you have public sewage. Under certain circumstances, they are willing to pay $\$ 500$ more for it, too."
The building team feels strongly that putting in good sanitation facilities is a moral responsibility of a builder. They feel they can rest easier knowing that their buyers will have good sewage conditions for the years to come. They hope to build another 150 homes in the project later. They will build another treatment plant for these houses, of course.
The first plant will cost $\$ 80,000$, provide complete treatment. Other costs include manholes ( $\$ 75$ per house), sewer lines ( $\$ 262$ per house) and miscellaneous fees and charges which bring the total cost per house to about $\$ 800$. This is included in the price of the house. Home owners later will pay about $\$ 2$ a month for operation. The plant will be turned over to the township.


Parkway Estates' "house" encloses sewage plant

Builders may obtain complete details on the treatment plants discussed in this article from the following engineers and companies:
Beckerle \& Brown, Pearl River, N.Y. Dorr-Oliver Co., Stamford, Conn. Enziger Co., Wichita
Harry N. Jenks, Palo Alto, Calif. Johnson \& Anderson, Pontiac, Mich. Joseph E. Spink, Sacramento, Calif.
Yeomans Bros. Co., Melrose Park, III.


## Success on odd lots . . .

How to get repeat-order economies with one-at-a-time houses

How to build houses efficiently on individual, leftover lots is whet many builders want to know these days. Builder Garry Grover seems to have found the solution.
Using four basic plans, he relocates windows, carports and fireplaces to take advantage of ground contours and view. His basic plans range from a two-bedroom, 912 sq . ft. house selling for about $\$ 9,000$ to a four-bedroom luxury model having 1,680 sq. ft . and selling for about $\$ 19,000$.
His impressive record: 60 houses per year, all on individual sites, wooded and barren, sloping and flat.
Grover builds all over Lafayette, a middle- and upper-income suburb east of Oakland, Calif. which embraces some steeply sloping land. His newest and most dramatic solution is the house shown above. Built on timber struts, it rides high and dry above its hillside sites, doing away with excavation and leveling. For details on Grover's economy methods for this and his other houses, turn the page.


Designer-Builder Garry Grover
began building after World War II
has upped his production
from six to 60 houses per year.
Although he is often able
to undersell his competition
by using the cost-cutting techniques shown here,
he ascribes his success to good design.
Grover is President of the General Contractors Assn.
of Contra Costa, Calif. (NAHB)



Grover cuts cost four ways to meet stiff competition

1. He carefully plans each piece of lumber for a house on the drawing board so that a local lumber company can deliver each piece precut and ready to assemble. Grover found precutting paid off after the first few houses, both in time savings and elimination of waste.
2. He assembles the precut pieces on jig tables at the job and erects the assemblies very quickly. This operation is so efficient that a saw is never needed on the job.
3. He uses a module (determined by the $2^{\prime \prime}$ roof decking) in all his houses. The insulating decking spans $32^{\prime \prime}$ or three spans to an $8^{\prime}$ sheet. Grover felt that windows would be too narrow at $32^{\prime \prime}$ but too wide at $96^{\prime \prime}$, decided on a $5^{\prime}-4^{\prime \prime}$ module equal to two spans.
4. He uses plastic tubing for radiant heating in his slab houses. This flexible polyethelene tubing forms a virtually jointless and seamless system, saves him 10 per cent on his heating installation.
While Grover uses the first three economies listed above in his strut supported house, it costs him more to build than his slab types. This house costs $\$ 16,000$, about $\$ 13.50$ per sq. ft., nearly $\$ 2$ per sq. ft. more than his other types. Grover feels the extra cost is justified by (1) the built-in deck which equals a patio (not offered with his slab houses) ; (2) the added sales appeal of wood floors; (3) the cheaper cost of hillside lots.

NEW PRODUCTS


Random-plank look in Modnar's asphalt


Spatter-dash colors in Poly-krome

## New floorings for the slab . . .

## 1,000 sq. ft. of eye-catching sales appeal

Embedded pigment chips are scattered at random throughout Confetti asphalt tile, right, laid out strikingly in this room.

Not cork, but a clever optical illusion, is Corktone asphalt, below, which ranges from a light tan to dark brown in color.

a. Biggest advance is the invention of waterand alkali-resistant adhesives, like Armstrong's On-Grade Cement and ChemicalSet Cement and Congoleum-Nairn's Three-
b. Twenty. The first two permit the entire range of resilient flooring (except linoleum and linoleum tile) to be used on grade, the third can be used even below grade with rubber or vinyl tile. A well-drained subbase, vapor membrane, and outward sloping grading (normal good practice) are the only qualifications. Before any resilient flooring is installed, the slab should be dry, clean and cured to a hard, nonpowdery finish, free of imperfections. Capillary moisture, alkali
continued on p. 182


Courtexy Armstrung Cork
Moisture and alkali were always destructive of many adhesives used on or below grade before invention of improved cements.

## Other NEW <br> PRODUCTS in this issue



Cabinet doors without handles .. p. 220

vinyl threshold .. p. 192 perimeter cold- and warm-air diffuser . . p. 214 thin marble tile . . p. 188


Section shows continuous reinforced concrete footing for struts,
tied to upper footing
with $8^{\prime \prime}$ grade beam at center and each end of house.
Metal gussets,
made specially for these houses,
are of $1 / 4^{\prime \prime}$ steel plate.
System is adjustable
to various slopes.

Wall-to-wall bathroom window
over tub (far left)
is pleasant feature of house.
Post-and-beam nature of panels
is illustrated by photo at left.
Horizontal nailers were used
for earlier redwood siding,
are not important
with plywood siding.

## Cutaway section

of standard slab construction
used by Grover
shows panels in place
with vertical shadowline
plywood siding.
(Panels fit $5^{\prime}-4^{\prime \prime}$ module,
are assembled as unit on slab,
then tilted into place.
Grover gets impressive savings
with this system


## FIRE-CHEX SHINGLES wouldn't say "Uncle" to the Hurricanes!

Here's real proof that Fire-Chex shingles have no equals for rugged strength and wind-resistance. Not $a$ single Fire-Chex roof, inspected in the wake of hurricanes Carol, Edna and Hazel, was found to be damaged!
You can feature unequalled protection and value in roofing, Fire-Chex, for just a few dollars more than conventional materials. And for much less than slate or tile (both of which knuckled under to the hurricanes). By any comparison, Fire-Chex are an economy for home-buyers. "They will outlast conventional roofing

# Cunent 

THE PHILIP CAREY MFG. COMPANY, Lockland, Cincinnati 15, Ohio In Canada: The Philip Carey Co., Ltd., 277 Duke St., Montreal 3, P.Q.

Better products for better building since 1873 Bathroom Cabinets and Accessories - Ventilating Fans - Access Doors Ceramo Asbestos Siding - Thick-Butt Shingles - Reflective Fire-Guard Blanket Insulation - Fire-Chex Asbestos-Plastic Shingles
several times over," as stated by a foremost authority.* And Fire-Chex are the only roofing of any kind rated Class A for fire-safety, without asbestos underlayment!
And the distinctive beauty of these husky heavyweights is another extra feature to help you sell! Choose from a wide range of Fire-Chex shadow blends and solid colors that create new depth and "character" in roof designs. See your Carey dealer today for samples, application data and full-color literature.



Savings of $50 \%$ or more in shipping costs are not uncommon with Ador's package design. No expensive crating is necessary, yet doors are completely protected against damage. Shipping weight is substantially reduced.
 threshold. The interlocker consists of two heavy duty extrusions, one a ribbed hollow tube unit. This permits the extremely narrow sight lines characteristic of the Ador door.


Secret of Ador design centers around unique self-contained "unitized" construction. Both door and frame are complete integral units held together by heavy duty corner castings an exclusive Ador feature.


- The door frame assembly is completed by installing the kickplate between interlocker and jamb. In the Ador design virtually all installation screws are hidden by the snap-on glazing bead.

Complete 16 foot sliding glass door is easily handled by one man. Ador doors are shipped knocked down, compactly packaged in easy-to-handle cartons.


1First step in installation is setting the threshold on level, flat surface-either sub-floor or slab. The threshold is easily leeveled by means of shims. Note tapered design and full $514^{\prime \prime}$ threshold width.

(
The sliding section is now assembled by means of corner castings and Phillips head bolts. It is a completely self-contained unit not dependent upon glass to hold unit together - an extra safety feature.

## 58 minutes to install 16' door

## Savings of $\mathbf{5 0 \%}$ or more in installation costs

## through unique design and packaging of

Ador all-aluminum sliding glass doors


2
Then jambs are set at either end of threshold in the heavy permanent mold corner castings. This assures a perfect installation with weathertight joints between jambs and threshold.


7After installation of the sliding unit in the door frame the hardware is aftached. The distinctive lucite pull and eccentric latching mechanism are exclusive Ador features that add security and beauty.


6 The header extrusion is now installed by sliding the unit up into the castings attached at the upper end of the jambs. Self-threading corrosion resistant Phillips head screws are used throughout.


8
Another unique feature of Ador design is the adjustment provided for perfect alignment of the sliding unit with the frame. Both sheaves may be raised or lowered by simple screw driver adjustment.

## Complete information on Ador Sliding Glass Doors

 is available from:ADOR SALES, INC.
1631 Beverly Boulevard
Los Angeles 26, California


Final proof of Ador design is a permanent perfectly functioning door...easily installed; fully weathertight; operating with finger-tip ease; alumilite finished; competitively priced.


## America's foremost

all-aluminum sliding glass door.

## they said they'd be back, but...



HOW MANY TIMES HAS IT HAPPENED TO YOU - BECAUSE YOU DIDN'T HAVE THE RIGHT PROGRAM FOR MERCHANDISING YOUR MODEL HOME?

The prospects were interested, but didn't stay long. Said they'd be back, but probably won't. Not that they didn't like the house. But there just wasn't anything in it to spark up the features; make a strong "want-to-buy" impression.
It could be a different story, if you had more merchandising helps-the kind that bore right into the prospect's mind and stay there. Newspaper ads, radio spots, billboards to help bring them. Smart displays, unique devices in the house to impress them. And above all, take-home literature they can study at leisurethe kind that brings them back for another look.
Chances are that this kind of merchandising is more than you care to tacklealone. To get it, you need professional assistance-and that's where Lennox comes in with the Model Home Promotion Plan.
There's nothing like it in the industry-nothing that reflects such intimate knowledge of builder problems; such skillful merchandising sense; such expert use of words and graphic techniques. And when you specify Lennox Winter or Summer Air-Conditioning it's yours practically for the asking-at a fraction of the cost you'd pay if you produced it yourself. You have no preparation problems. Lennox does all the work; you make the sales. The Lennox Model Home Promotion is a proved merchandising plan that's working right now for all types of homes and builders in every section of the country.

FREE!
Write Lennox Furnace Company, merchandising dept., Marshalltown, Iowa, for free sample copy of 4 -color custom-made literature described below. Full information on the complete merchandising plan will be included. Write Lennox today, or see your Lennox dealer.

## Professionally prepared advertising and merchandising tools

Specially prepared for you by Lennox. Beautiful full-color cover; inside spread that talks about your homes, your site, your features. No printing or processing headaches for you. Lennox does the work!


MYSTERY VOICE!
Stop prospects in their tracks, with this amazing new electronic device that makes walls talk; creates a "talking" model home hostess; gives Lennox equipment a voice. What a stopper!


CHARMING HOSTESS!
She meets your prospectseven "speaks" to them when you use her with the "mysiery voice". Miss Lennox is an attractive lifesized cut-out display. And here's more! Giant balloons, billboard designs, product signs, newspaper ads, radio spots - field-tested to help you sell!

## IT'S GOOD BUSINESS TO BUY

## LENNOX

THROUGH 5,422 HOME COMFORT SPECIALISTS
Air Conditioning, Heating-since 1895: Marshalltown, lowa; Des Moines, lowa; Columbus, Ohio; Syracuse, N. Y.; Ft. Worth, Texas; Salt Lake City, Utah; Los Angeles, Calif.; Decatur, Ga. In Canada, Toronto and Calgary.


Roger G. Dunbar, nationally prominent builder from Toledo, Ohio, is currently building 300 homes equipped exclusively with Suburban built-in ranges.

## sulburban

## America's Finest Built-in Range

"Talk about selling homes faster," says Mr. Dunbar, "We've hit the jackpot with Suburban-especially the new Copper-Tan finish. Here is all the luxury of copper-with none of the upkeep. Our prospects really go for that beautiful lifetime porcelain enamel finish. It blends with any color scheme . . . won't scratch or tarnish, is heat proof, acid resistant-and easy to clean. And, like all Suburban ranges, it has more features wanted by more women than any built-in I know of. No wonder my good friends at Toledo Pipe \& Supply Co. (local distributor) call it the 'wifesaver' range!"
GAS OR ELECTRIC-Suburban is the best deal yet for builders. Interchangeable gas or electric units use the same cabinet ...choice of stainless steel, Copper-Tan, and decorator colors . . . all units competitively priced ... backed by powerful national advertising.
OVER 1,500,000 GAS AND ELECTRIC APPLIANCES NOW IN USE

SAMUEL STAMPING \& ENAMELING CO., Dept. D-6, Chattanooga, Tenn.
At no obligation to me, please send complete information checked below:


Name $\qquad$ Address

City $\qquad$ State

## Migration, rental exodus prop sales, survey shows

ments. Neither FHA nor VA was cutting back, but both were watching operations carefully. Big builders figure that $45 \%$ of their customers come from rentals; $40 \%$ from smaller or older homes and $15 \%$ from out-oftown. A total of $75 \%$ were classed as married couples between 25 and 30 years old, married two years and with at least one child.
Portland, Ore.: Three 608 projects with vacancy rates ranging from $17 \%$ to $28 \%$ were throwing off total estimates for city and state. Not counting the 608 s , figures from a half-finished survey by the Oregon Apartment House Assn. put vacancies in newer apartment buildings at $6.8 \%$; in apartments over 12 years old at $5.6 \%$. FHA had come up with a statewide vacancy rate of $7.4 \%$, but it was far from meaningful because the 608s were counted. Said FHA: "Oregon is not overbuilt, and vacancy figures are misleading in that the bulk is in one large block of apartments in Portland."
The block of 604 units had suffered a real pull from VA's home-buying terms. Jack Binford, owner of one of the projects, started advertising one month's free rent a few weeks ago. Binford claims there is not a solvent 608 in the city, but FHA denies this, pointing out that only two of them are under foreclosure, while a third has FHA as the mortgagee under a reorganization that has resulted in increased tenancy.
In from out of town. Cities enjoying the full brunt of inmigrating families had little to worry about as far as a thriving home-building business went. It was not certain that such families would fill all of the apartments all of the time, but it was a safe bet they would fill new houses before long. Examples:

- The population of Dade County, Fla. (750,000 ) is expected to double by 1960 . The developers of Leisure City there say that their 1,300 home owners come from all 48 states and seven foreign countries.
- Ed Northway of Hutchinson Homes in Denver figures that $40 \%$ of the expected 12,000 persons who will buy homes in the Denver metropolitan area this year will be from out-of-town; $30 \%$ will be looking for bigger and better houses and another $30 \%$ will be firsttime home buyers.
$\rightarrow$ In Atlanta it is estimated that $20-25 \%$ of home buyers come from outside the city; perhaps $50 \%$ move from apartments and $10-15 \%$ buy to upgrade what they have.

In larger cities, like Detroit and Chicago, the picture changes to increased emphasis on a family's desire for better and newer homes, plus a marked increase in the number of buyers moving out of rentals.
In Detroit, Donald E. Munro, president of Edward Rose Sales Co., made an analysis of his last 700 sales, found that $40 \%$ were to families formerly in older or smaller homes; $35 \%$ to renters; $15 \%$ to new families and $10 \%$ to out-of-towners.

Park Forest in Chicago reported that during the past year $60 \%$ of their home buyers moved out of Park Forest Apartments; 30\% moved out of other rental units in Chicago and $10 \%$ moved in from out-of-town.

## In the "Air-Conditioned Research Village"...

 the lowest cost-to-operate air-conditioned home is equipped with a Halstead \& Mitchell
## Residential type Cooling Tower

 which ranked No. 1 and No. 6. (Ratings from HOUSE +HOME, March, 1955).
HOUSE + HOME, reporting results from the project engineers, showed that water costs with cooling towers for the entire fivemonth Texas-summer season were as low as $\$ 2.00$ per summer. So small was the cost, indeed, that special meters had to be installed to read the daily consumption.
Certainly house design and air conditioning equipment design were the major factors in the low cost of air-conditioning operadion in these homes. But it is a tribute that two of America's leading manufacturers selected Halstead \& Mitchell's Residential Cooling Towers with such happy results.

AT LEADING WHOLESALERS EVERYWHERE
Why don't you write for your Residential Cooling Tower Catalog today?

## Halsteads Mitchell

BESSEMER BUILDING - PITTSBURGH 22, PA.


Faulty installations cause most failures

## How to install septic tank systems

With basement plumbing, provide a sump pump. Septic tanks should not be placed deeper than $2^{\prime}$ below ground surface; house sewer should not slope more than $1^{\prime \prime}$ in $20^{\prime}$ to tank. Otherwise, without a sump pump, the tank and the sewer would be too deep in the ground.


On sloping lots, always locate disposal system on the downgrade side of the house



Minimum distances for installations of septic tank systems are recommended as shown here by the government. Local requirements may vary somewhat.

Surface drainage from the vicinity of the disposal field should be away from the source of potable water.

## Research also shows:

- Tank design: two-compartment tanks with half to two-thirds of their capacity in the first compartment give top performance. Multicompartment tanks give as good or better performance than singlecompartment tanks. Two-compartment tanks may be either round or rectangular. Tank capacity should be $50 \%$ greater if there is a garbage grinder in the house.
- Sludge and scum accumulation: increased water consumption in homes with automatic washers has no effect on tank size requirements but calls for more tile field. Chemical cleaners do not hurt the tanks but harm (shorten life of) tile field. The same is true of water softeners.

Distribution boxes: such boxes, with inlet ballles, are much preferred to clay tile Ts and Ys.

Properly designed and installed,
the average septic tank system will last 20 years,
if the tank is pumped out every three years cont'd on p. 178

nothing's more violent than a tea party!

Scorching utensils, acids, rough abrasions, anything that mars ordinary hard surfaces has no effect on Pomona Tile's "Space-Rite" Perma-glaze deck tile. Fused by an exclusive Pomona process, Perma-glaze has flint-like hardness. That is why this steaming kettle and potent lemon juice acid prove harmless to its lifetime jewel-like surface. Note the smart, new $6^{\prime \prime}$ by $41 / 4^{\prime \prime}$ size tile in Pomona's textured Sun Yellow Perma-glaze. To guarantee complete client satisfaction, specify Pomona "Space-Rite" tile. Write for free catalog with actual tile samples of full line of colors.


Xor the finis tradition of distinctive floors...


## MATICO PARQUETRY TILE FLOORING

A truly different, distinctive tile, MATICO Parquetry creates the luxurious effect of wood block flooring in low-cost asphalt tile. Parquetry is ideally suited for installation in offices, institutions and private homes because its rich, natural tones harmonize with any decor or style of architecture. Sturdy, durable, resistant to stains and scratches, Parquetry
can be installed on, above or below grade. Available in four desirable shades-walnut, oak, maple (shown above) and mahogany.
Now at C group asphalt tile prices, MATICO Parquetry is as economical as it is handsome and practical. Be sure to consider Parquetry when next you specify flooring.

[^12] TO HOUSES IN


Today's home buyer is more interested in "Quality" tha He ever before. Ner design, better construction,
demands better demands, he is a QUALIT -min readily saleable in today." Include To make your houses more "touch of qual - windows that ket, give them the magmum windows on painting and "Quality-Approved ... that save money . that always operate easily, cannot rot or rus after year... windows that remain up-to-date maintertlessly, efficiently $\ldots$ ife of the house. and beautiful for the life aluminum windows are natily accepted "Quality-Approved" alumazines. They are reaction. As you vertised in leading mark of quality "Quality-Approved by home buyers an houses, instarself how they stimncing plan and buindows and see for, as well as youre screens and aluminum windowective buyer, as also include screentage. sales. Yo, will appreciate it complete single-package more avilable storm sash as part of a cluminum windows are ara) in all "Quality-Approved" acturers (see list onble-hung, projected through many manutaing, casement, double performance standsizes and styles (aw tested against quality of materials, for and sliding). All are teVEED for quaruction, and for low air ards. All are sections, for sound infiltration. For additional information, con write to Dept. HH-6


IMNU WINDOW

## -. \$8,000 10 \$48,000 <br> 



These Repufable Manufacturers
are ready to supply you with Quality-Approved Aluminum Windows.


ALCASCO PRODUCTS, Inc.
12640 Burt Road, Detroit 23, Michigan ALUMINUM HOME PRODUCTS CO. Carr St, Knoxville, Tenn. THE WM. BAYLEY COMPANY 1200 Warder St., Springfield 99, Ohio CECO STEEL PRODUCTS CO.
Sterling Aluminum Window Div.
5601 West 26 th St., Chicago 50, ilt. CUPPLES PRODUCTS CORPORATION 2650 So. Hanley Rd., St. Lovis 17, Mo. FENTRON INDUSTRIES, INC.
2801 Market St., Seattle 7, Wash. MICHAEL FLYNN MFG. CO.
700 E. Godfrey Ave., Philadelphia 24, Pa, GENERAL BRONZE CORP.
Stewart Ave., Garden City, N. Y. METAL ARTS MANUFACTURING CO., INC. Harwell Rd., Allanta, Ga. REYNOLDS METALS CO. (Window Div.) 2000 S. 9th St., Louisville, Ky.
THE F. C. RUSSELL CO. (Aluminum Division) Box 27, Bristol Po
J. S. THORN CO.

8501 Hegerman St., Philadelphia 36, Pa. UNIVERSAL WINDOW CO. 950 Parker St., Berkeley 10, Cal. WARE LABORATORIES, INC. 3700 N.W. 25th St., Miami, Fla. WINDALUME CORPORATION Kanvil, N. J.


## PALCO

 Architectural Quality Redwood

## REFLECTING MORE NATURAL BEAUTY－

 AND YET SO PRACTICAL ．．．for exterior and interior finishesTone and texture of redwood lend themselves as in no other material to design flexibility－ while offering the practical advantages of easy workability，dimensional stability， high paint retention，and ageless defiance of weather，insects or decay． To assure full value of these premium qualities at no higher premium in cost， Certified Dry Palco Architectural Quality Redwood is selected，manufactured， handled and subjected to reinspection at every step by the most advanced facilities and procedures in the industry．By specifying Palco Architectural Quality，you can be sure of highest uniformity of grade－yet you pay no more！


## THE PACIFIC LUMBER COMPANY

The best in Redwood－Since $1869-$
Mills at Scotia, California

100 Bush St．，San Francisco 4－35 East Wacker Drive，Chicago 1－2185 Huntington Drive，San Marino 9，Calif． MEMBER ロF CALIFGRNIA REDWロロD ASSICIATIロN


The ability of a floor tile to stay beautiful is the sum total of numerous factors-color, surface and resistance to everyday indoor highway wear. All these and built-in protection against greases, oils, mild acids, alkalies, gasoline and naphtha are important properties of this allpurpose plastic floor tile. Flexibility, resilience and unlimited application possibilities are inherent in Vinylflex. Vinylflex is used in homes, commercial establishments, institutions and industry with exceptional results in performance and economy. Vinylflex Plastic Floor Tile carries the Hachmeister workmanship and quality material warranty. Write for suggestions on how HAKO Floor Tiles can help you.
> / ACHMEISTRE-INC.
> (inuanted by


## Add Lupton Windows as a sales feature

The Lupton Residential Casements shown here are as smart and modern as the ranch homes in which they are used. Their trim lines, easy operation and sturdy construction make them a decided sales-plus. On either side of the fixed glass panels are standard Lupton Casements . . . with all muntins removed. Result . . . modernstyling with traditional casements.
For single homes or for operation houses ... for modern or traditional architecture ... you can select exactly the window you

need from the complete Lupton line. That's why you see so many Lupton Windows in so many projects. There is a standard Lupton Window available, or one can easily be adapted, for practically any building. Lupton has the size and style you want!
Variety is only one reason for building with Lupton Windows. They are designed and built for easy operation and long life. Dealers can offer prompt delivery. There's the integrity of a window manufacturer with over 40 years experience behind every Lupton Window sold.
Why not contact your nearest dealer listed in the "Yellow Pages"- or write direct to

MICHAEL FLYNN MANUFACTURING COMPANY 700 East Godfrey Avenue, Philadelphia 24, Pa. Member of the Steel Window Institute and Aluminum LUPTON METAL WINDOWS

Penn Square Village, Mont gomery County, Pa. Builders Erlen Development Company Philadelphia, Pa, Architects Nolen \& Swinburne. Phila
delphia. Pa. Windows: Lupton Steel Residential Casements. Cortlande V. D. Hubbard. Photographer.


Lupton Casement Steel or Aluminum


Lupton Aluminum Double Hung Window


Lupton Aluminum

## For sure sales pick-up, builders turn to brick homes

As buyers become more selective and insist on higher quality, more and more builders in the highly competitive Long Island market are choosing brick.
Here's what they say-
'We find people prefer brick because of its warmth, quality and maintenance economy. In three weeks we sold 20 of the 35 brick homes in our newest section." Newman \& Wiesbarth Central Homes, Bellmore, N. Y.

"When we build with brick, sales are faster. We also prefer brick because it gives us pride in the quality of our product. Our present price range is $\$ 14,790-$ $\$ 17,340$."

Walter Beck, Beck and Rapone
New Bridge Terrace, Plain Edge, N. Y.

"In two months we sold 60 brick homes in the $\$ 18,500$ $\$ 20,000$ range. Brick makes them easier to sell - in fact, people demand brick in this price range." Joseph Mascioli
Clearview Village, Hicksville, N. Y.

## Structural Clay Products Institute

1520 18th Street, N. W., Washington 6, D. C.
The beauty and variety of brick and tile make home sales easier



## hard to talk to them all



What brought the cars? News. News of a good house on a good site with good financing. News told through the papers, the mails, and by word of mouth. News of a better house full of quality brands.

For example, there's the Jones' car. Mother, father, and three kids. They're "trading up" from a two-bedroom house. Lived in it six years. Know a lot about houses . . . and they're looking hard. Looking for quality, durability, names. Brand names. Brand names that to them stand for money well spent.

And there's Mr. Cook's car. Great do-it-yourself man, Mr. Cook. Knows tools, woods, and quality. Knows brand names, too. And, like the craftsman he's fast becoming, he wants quality from A to Z. Knows it by eye.

The hang of a door and the name of a floor.
And there's the car that belongs to the young couple from the apartment house. They've saved and saved. And read and read. And dreamed, too. Dreamed of finding a kitchen like this ad or a bathroom like that. Dreamed of good roofing and washable paint. Dreams based on beautiful convincing ads in the magaziines they've read.

All types go through a house. The lookers, the buyers, the chatters, the dreamers. Hard to talk to them all. But they're all important. One way to reach them, though. Merchandising at the point of sale. Pointing up the nationally advertised features they'll know and respect. Features they've seen advertised in Life. Last year advertisers invested more dollars in Life than in any other magazine.

That's why, more than ever before,
in this changing, building America
LIF: helps make the sale!

# How to make a percolation test 

## The fundamental soil test

developed by the government's long research
of septic tank systems is given in full below.

## Says the report

"A test providing opportunity for saturation and swelling is indicated for about $50 \%$ of the soils of this country . . . Shortcut tests developed for local conditions should be checked against this fundamental test."

- Number and location of tests: six or more tests should be made in separate test holes spaced uniformly over the proposed absorption field site.

Type of test hole: dig or bore a vertical hole with diameter or side widths of $4^{\prime \prime}$ to $12^{\prime \prime}$ to depth of the proposed absorption trench. These can be bored with a $4^{\prime \prime}$ auger to save time.

Preparation of test hole: remove all loose material from the hole. Scratch bottom and sides to provide natural soil interface into which water may percolate. Add $2^{\prime \prime}$ of coarse sand or fine gravel to protect bottom from scouring or sediment.

Saturation and swelling of the soil: fill the hole with clear water to minimum depth of $12^{\prime \prime}$ over gravel. Refill as necessary to keep water in the hole for at least four hours and preferably overnight. Allow the soil to swell overnight to insure its approaching conditions of wettest weather. (In sandy soil with little clay the swelling procedure is not essential.)

- Percolation rate measurement: if water remains in the hole after the overnight swelling period, add clear water to bring the depth of water in the hole to about $6^{\prime \prime}$ over the gravel. From a fixed reference point, measure the drop in water level over a 30 -minute period. This drop is used to calculate the percolation rate.
If no water remains in the hole after the overnight swelling period, add water to bring depth of water in the hole to about $6^{\prime \prime}$ over the gravel. From a fixed reference point, measure the drop in water level at about 30 -minute intervals for four hours, refilling $6^{\prime \prime}$ over the gravel as necessary. The drop that occurs during the final 30 -minute period is used to calculate the percolation rate.
In sandy soils (or other soils in which the first $6^{\prime \prime}$ of water seeps away in less than 30 minutes, after overnight swelling) the time interval between measurements should be taken as 10 minutes and the test run for one hour. The drop that occurs during the final 10 minutes is used to calculate the percolation rate.
- Additional criteria: Results of the percolation test should be applied with caution if (a) the water table is normally at a depth of less than $4^{\prime}$ for any extended period during the year, or (b) impermeable layers of rock, clay or hardpan are found at depths less than $6^{\prime}$.


## How to apply the percolation test results




## How to install the distribution system

- Extreme care must be used in laying the distribution piping. Most state health departments prefer that the grade of pipe or tile be only $2^{\prime \prime}$ to $4^{\prime \prime}$ per $100^{\prime}$. Unless it is laid by an experienced crew, it may make an otherwise properly installed septic tank system fail completely.
- Several types of nonmetallic piping, all $4^{\prime \prime}$ in diameter, are used for the field distribution system. Perhaps most common is common agricultural or farm drain tile, usually a foot long, laid with joints opened from one-quarter to one-half inch. Such tile is cheapest-initially, at least-but more susceptible to damage. Grade boards provide one method of obtaining proper slope. Bell and spigot clay pipe, laid with joints opened about a $1 / 2^{\prime \prime}$, may be used without grade boards. Perforated bituminized fiber pipes usually have a higher initial cost but are not subject to much damage, infiltration by roots, and the like.
-The average trench spacing requirements in the various states is $8^{\prime}$ from center to center of parallel trenches. Most states require trenches $18^{\prime \prime}$ to $24^{\prime \prime}$ wide. The wider the trench, the more disposal area per lineal feet of tile used, thus the lower the cost per square feet.
- Coarse material must surround the piping, perferably gravel, crushed stone, slag and similar material. The piping should be at least $6^{\prime \prime}$ underground in areas where freezing might occur, but seldom should be more than $18^{\prime \prime}$ below ground level.


Heavier Extruded Aluminum Sections Meet All Architectural Requirements!

Wherever you're planning lowcost window walls - whether in band, tier or flush-wall arrangements - you'll find Ualco Aluminum Commercial Projected Windows fill the bill. Heavier extruded aluminum sections meet all requirements for strength . . . are made to take single or double
glazing. Available with either pro-ject-in or project-out vents. Lifetime aluminum meets investors' requirements, too! Will never rust, rot or warp . . . never need painting. Ualco Aluminum Projected Windows give investors their money's worth!

SOUTHERN SASH SALES \& SUPPLY CO. - SHEFFIELD, alabama


UALCO ALUMINUM WINDOWS ARE
UNCONDITIONALLY GUARANTEED
AGAINST DEFECTIVE MATERIALS
AND WORKMANSHIP
UALCO - WORLD'S LARGEST MANUFACTURER OF ALUMINUM WINDOWS


## Home Builder Builds Better with LACLEDE STEEL JOIST FLOORS

When C. E. Dalton, Designer and Builder, Inc., included Laclede Steel Joists in the 120 new homes in his AlClare Meadows development, St. Louis, the construction advantages to the builder and benefits to the owner were even greater than anticipated.



## NEW! DIFFERENT!

New BullDog Electrostrip ${ }^{\circledR}$ is sturdy wire molding that provides electrical outlets exactly where they are needed, as they are needed-outlets you can move as you move furniture, change lighting arrangements or shift office layouts.
Ideal for modernization or new construction, Electrostrip can be installed easily and quickly on any surface - in any type building. Sold through BullDog distributors to qualified electrical contractors. Write: BullDog Electric Products Co., Detroit 32, Mich.


SIMPLEI Electrostrip mounts easily on walls, baseboards, floors, anywhere . . . bends to fit any room contour. In shops, stores, homes -new buildings or old-it opens the door to complete freedom from fixed electrical outlets.
 clamp into Electrostrip wherever you want them. Outlets can be placed at any spot on the strip . moved elsewhere in seconds. Neat and attractive, its natural color harmonizes with any color scheme.
 nates the hazards of long, dangerous extension cords and overloaded outlets. Receptacle plugs lock securely in position. All wires are enclosed for complete safety. Listed by U. L.

IF IT'S NEW IF IT'S DIFFERENT (3BEPCO . . . IF IT'S BETTER . . . IT'S


## BULLDOG

ELECTRIC PRODUCTS COMPANY A Division of I-T-E Circuit Breaker Company
Export Division: 13 East 40th Street, New York 16, New York. In Canada: BullDog Electric Products Company (Canada), Ltd., 80 Clayson Road, Toronto 15, Ontario.

## NEW

PRODUCTS
continued from p. 164
leached out of the concrete, or radiant heat (up to $85^{\circ}$ ) in the slab will not affect the performance of either the adhesive or the flooring itself. Even wet areas like bathrooms or kitchens can be tiled, using these waterproof cements.
Manufacturers: Armstrong Cork Co.
Lancaster, Pa.
Congoleum-Nairn, Inc. 195 Belgrove Drive Kearny, N. J.


We can't, offhand, think of a better reason. And it's a fact that more and more discriminating home buyers are demanding the luxurious comfort of hot water baseboard heating.
Now, thanks to T\&B's exclusive, simplified 4 -step installation methods, it need cost no more to install than other, less satisfactory systems.

You can't afford to overlook the tremendous sales appeal of this most modern heating system, because T\&B Baseboard is a "plus value" in any new home.

Please write for complete information, selection data and installation details.



Vinyl-asbestos, like Excelon (above), and cork (at left), shows design possibilities.

## 'Gonna change my way of looking

c. One basic change in asphalt tile is Tile-Tex's Modnar, which discards the standard $9^{\prime \prime} \times 9^{\prime \prime}$ size for a plank-like $4^{\prime \prime} \times 24^{\prime \prime}$, wood grained. By cutting the starting tiles to different lengths a random pattern can be created. Four wood tones are made, which can be used in numerous combinations.
Price: Approx. $25 ¢$ per sq. ft. installed
Manufacturer: Tile-Tex Div, of Flintkote 1232 McKinley Ave. Chicago Heights, Ill.
d. Two other asphalts, Hako's Poly-krome and
e. Matico's Confetti, have chips of pigment embedded throughout the background to give a color-sprinkled look to each tile.
Price: Approx. $19 \phi$ per sq. ft.
Manufacturers: Hachmeister, Inc. 1300 Island Ave. Pittsburgh, 30, Pa. Mastic Tile Corp. Newburgh, N. Y.


Powder and liquid are mixed here to form chemically-fusing, below-grade adhesive.
f. Kentile's Corktone performs the difficult optical illusion of looking like cork, yet retaining all the properties of asphalt. Four shades, ranging from light to dark cork color, may be combined in any random combination.
Price: $16 ¢$ per sq. ft .
Manufacturer: Kentile, Inc.
58 2nd Ave.
Brooklyn 15, N. Y.
g. The laminated hardwood of World War II's famed PT boats is the straight-line ancestor of Higgins hardwood flooring. A three-ply cross-grain, T\&G product, the $9^{\prime \prime} \times 9^{\prime \prime}$ blocks are pressure bonded with marine type waterresistant glue. Installation can be made over subflooring or directly on a concrete slab, using adhesive.

Factory finishing and waxing eliminates that on-the-job operation (though it can always be sanded and refinished later), and wood pores are sealed to minimize dirt penetration. There are no lefts and rights, each
continued on p. 184

## THINK of the SALES PUNGH!



THE BEST IN HEATING NOW
... SUMMER COOLING NOW OR LATER!

## only WATER can give your HOMES ALL THESE ADVANTAGES

For solid comfort every month of the year, equip your homes with a B \& G Hydro-Flo System. No other type of system can add so many sales appeals ...make so many contributions to utterly comfortable living.
That's because mechanically circulated water is the most effective and versatile medium for both heating and cooling. It provides radiant heating -uniform, draftless warmth... plus the convenience of an all year 'round supply of hot water for kitchen, laundry and bath. Snow melting and summer cooling equipment can be included when the heating system is installed or at any time later.
Owners can be assured of low heating costs, because the B \& G HydroFlo System closely adjusts fuel consumption to weather conditions. No wasteful overheating, even in spring and fall when little heat is needed.


Year 'round hot water
An ever-ready, ample sup. ply, heated by the same boiler that heats the house -no separate heater needed.


Snow Melting
Snow can be melted as fast as it falls, by means of pipe coils installed under sidewalks and circulated with hot water from a B \& G Hydro-Flo System.

## *Reg. U.S.



## Hydro -The System <br> BELL \& GOSSETT COMPANY Dept. DX-10, Morton Grove, Illinois <br> Canadian Licensee: S. A. Armstrong, Led., $14000^{\prime}$ Comnor Drive, Toronto, Canada

ALL ALUMINUM SLIDING DOORS designed for built for priced for


Now...at last...an all aluminum sliding glass door designed specifically for multiple housing projects and low budget installations. New improved production techniques have made it possible to produce a quality door at the lowest price ever before offered.

## Prices on

 All doors $\mathbf{6}^{\prime}, 10^{\prime \prime}$ high DOOR WIDTH OPENING LIST PRICE $6^{\prime} \cdot 0^{\prime \prime \prime}(2$ panel) \$ 90.00
$8^{\prime} \cdot 0^{\prime \prime}$ (2 panel) $\$ 102.00$
$10^{\prime}$ - $0^{\prime \prime}$ (2 panel)
$\$ 114.00$
$12^{\prime}$ - $0^{\prime \prime}$ (2 panel) $\$ 126.00$

- locking stiles may be reversed permitting sliding unit to be right or left.
- all aluminum
- aluminum etched for corrosion resistance.
- units will accommodate glass of $3 / 16^{\prime \prime}$,
$7 / 32^{\prime \prime}$ or $1 / 4^{\prime \prime}$ thickness.
- quantity discounts available.

For further information on the Sun Valley Junior and Sun Valley Aluminum Sliding Glass Doors, write:

SLIDING DOOR COMPANY, Dept. 104 8354 San Fernando Road. Sun Valley, Calif.

NEW
PRODUCTS

block fits anywhere, and tongues and grooves are integral. Because the lamination is not harmed by heat, the flooring can be used directly over radiant heated slabs, without danger of buckling or separating.
Blocks are packed 32 to a case, enough for 18 sq. ft. The precision edges fit flush to reduce surface grooves to a nondust-catching minimum.

Price: $60 \epsilon$ sq. ft . average
Manufacturer: Higgins Industries, Inc. Box 8169, Michaud Lane New Orleans, La.
h. One of the most popular luxury features a house can have is cork flooring in selected areas, especially since adhesives have been

developed that permit its use on grade if desired. Latest innovation is Dodge Cork's Parquetry tile, which resembles hardwood parquetry, but has the customary resilience and quietness of cork.
Tiles are the usual $9^{\prime \prime} \times 9^{\prime \prime}$, and are available in $1 / 8^{\prime \prime}$ and $3 / 16^{\prime \prime}$ thicknesses, with

beveled or straight edges. A $12^{\prime \prime} \times 12^{\prime \prime}$ tile will be offered in a wider stripe than the smaller tiles. Both are factory-finished in light $\tan$ random shades.
Price: $1 / s^{\prime \prime}, 90$ c per sq. ft.; $3 / 16^{\prime \prime}$, $\$ 1.15$
Manufacturer: Dodge Cork Co., Inc. Lancaster, Pa.
continued on p. 188


## ART METAL lighting adds gaiety and color

## to the kitchen

Contemporary kitchens-the heart of the modern home - take on new life and interest when illuminated with ART METAL lighting equipment.

The many advantages these units offer include ease of cleaning and relamping as well as a gay, contemporary appearance.
See an authorized ART METAL distributor for detailed information on these and other ART METAL lighting units.


## Masonite research adds sales power to Barber-Colman garage doors!

Could Masonite produce an exterior panel that would meet the rigid standards set for Barber-Colman doors? Masonite could-and did! Today, these attractive, long-lasting "Weather-King" doors carry a certificate guaranteeing that the smooth, sturdy panels in the doors will never split, splinter or crack from natural causes. What's more, these dense, grainless panels are
easier to paint, stay new-looking longer.
With the development of "Weather-King" panels, Masonite ${ }^{\circledR}$ research has solved another problem for the building industry . . . created welcome economies in both manufacturing and on-the-job use. To get the complete story-write Masonite Corporation, Dept. HH-6, Box 777, Chicago 90, Illinois.

Look for This Man-He
 Makes The Difference MASONITE CORPORATIO
MANUFACTURER OF PRESDWOOD® PANEL PRODUCTS

## Cut Built-In Installation Costs ...Use



Nothing else clinches a home sale faster than a beautiful custom-built kitchen. And now, you can dazzle your potential home customers with built-in kitchens that require no costly installation!
American Kitchens set-in ovens and ranges make possible this cost-cutting magic. Just set them in place . . . no expen-
sive custom-built installation costs!
Available in choice of white or copper finishes . . . gas or electric models . . . complete flexibility of arrangement. Ovens can be built into the wall, too.
Let these dramatic new American Kitchens ovens and ranges cut your kitchen installation costs-and sell your homes faster!

## AHMilloll NiUCMOM Sell Your Homes Faster:

AMERICAN KITCHENS DIVISION AVCO CONNERSVILLE, INDIANA

Brunch Bars




Here is an American Kitchens oven and range in gleaming white. Note the giant storage space in the base cabinets. Bake and broil units are recessed for greater oven capacity ... can accommodate a 25 lb . turkey. Send coupon today!

## American Kitchens Dept. HH-6-55 <br> AVCO Manufacturing Corp. <br> Connersville, Ind.

$\square$ I'd like to have "no obligation" quotation on my next kitchens.
$\square$ Please send your new Architects' and Builders' File.
Name
Address.
City $\qquad$


Now...get arcadia quality features
in aluminum, too!
Here is a partial list of quality features that make Arcadia's new custom aluminum door the strongest, most weathertight sliding aluminum door ever made...
GENERAL-All members are Type 6063-T5 aluminum alloy extrusions, average wall thickness .094" - Lustrous, clear Alumilite finish - Designed for either single or double glazing with standard $1 / 4^{\prime \prime}$ plate or $1^{\prime \prime}$ insulating glass. Glass Mould snaps on and off for fast and easy glazing - Beveled Mould for $1 / 4$ " plate prevents collection of dust and dirt - Hollow, box-type Sections provide extra strength and rigidity - Weathersealed on all four sides with Double-Seal Wool Pile Weatherstripping, Silicoated to protect against moisture, abrasion and staining - All weatherstripping replaceable without dismantling door - All installation and assembly screws are stainless steel or Alumilited aluminum - Variety of materials available for decorator-type Door Pulls . Available in a variety of widths under Arcadia's exclusive "MULTI-WIDTH" Program.
FRAME ASSEMBLY - Heavy-gauge stainless steel Track, easily replaced if damaged - Replaceable Threshold - Box-type Head and Fixed Interlocker - Bottom line of Head is continuous - Plaster Key in Jambs - Need for blocking eliminated $\cdot$ Snap-in Flashing Fins for simplified installation.
SLIDING PANEL - Box-type Stile and Sliding Interlocker - Sliding Panel easily removable without dismantling Door.
hardware \& FIttings - Positive Night Latch - Non-corrosive, cad-plated Lock Mechanism - Schlage cylinder lock available -Smooth-rolling, large diameter Nylon Sheave, adjustable and replaceable without dismantling door.

For complete information and detailed specifications, write for literature on Arcadia's new aluminum door. Ask for Catalog A-55. HELP BUILD A BETTER AMERICA -SEE AN ARCHITECT

Arcadia Metal Products - Arcadia, California DISTRIBUTORS THROUGHOUT U.S., CANADA \& PUERTO RICO

NEW
PRODUCTS
continued from p. 184

i. "I dreamt I dwelt in marble halls" becomes a reality in a house floored with Markwa genuine marble tiles. The products of new quarrying and production methods, the tiles are just $1 / 2^{\prime \prime}$ thick, and may be used in walls, fireplaces, or counter tops, as well as for floors. When used as flooring, they can be adhesive- or mortar-installed right over the concrete slab in $8^{\prime \prime} \times 8^{\prime \prime}, 8^{\prime \prime} \times 12^{\prime \prime}$, and $12^{\prime \prime} \times$ $12^{\prime \prime}$ sizes, large enough to show off the color and graining of each piece.

Eighteen marbles (chosen from some 250 kinds presently being quarried) are included in the line of colors and patterns, and as in
all marble, no two tiles are exactly alike. Though Markwa tiles are highly polished when specified for walls or counters, floor tiles have a mat finish, square edges, and will be furnished in modular sizes ( $3 / 32^{\prime \prime}$ less) where specified. In this new thin dimension, the marble weighs only $71 / 2 \mathrm{lb}$. per sq. ft . It is installed by tile setters.
Price: Approximately $\$ 2.85$ per sq. ft. installed, depending on marble selected
Manufacturer: Vermont Marble Co. Proctor, Vt.
continued on $p .1$


Spacer string is removed from between rows of tiles right, leaving joint which will be filled with grout. Marble veining runs in random directions.

White Portland cement is mixed to thin paste, left, then spread by hand, till all the joints are filled flush with surface of the marble.


Today, after nearly six years of patient planning and exhaustive research, Arcadia proudly announces a magnificent new line of custom sliding doors of aluminum . . . designed and engineered to meet or surpass all commercial and residential needs!
Here, at last, is an aluminum door worthy of the name Arcadia . . . long the leader in steel sliding glass doors. Before you specify any door, see the all-new Arcadia aluminum door. Compare it with all others. . . you'll see the difference. Then decide for yourself.

first choice in steel . . . Now first in aluminum, too!

## Your

AIR CONDITIONED


## Today's Home Buyers

## Rustproof Ducts of REYNOLDS ALUMINUM

You're bound to have complete home air conditioning. And that means moisture condensation on cold ducts... the threat of rust damage to duct system, rust stains through walls, expensive replacement. Insure yourself Look for this Seal that guarantees rustproof ducts. Write for folder that also tells how aluminum speeds air flow, improves efficiency. Reynolds Metals Company, General Sales Office,
 Louisville 1, Kentucky. SEE "MISTER PEEPERS," starring Wally Cox, Sundays, NBC-TV Network

Another in the Reynolds series of advertisements emphasizing the importance of aluminum ductwork. Consumers will be reading this message in June BETTER HOMES \& GARDENS. Other advertisements appear in SMALL HOMES GUIDE and LIVING FOR YOUNG HOMEMAKERS. By calling attention to a modern home essential, they create an important selling point for builders.

More than ever before a homeowner expects to do a major portion of maintenance himself-witness the established fact of the "do-ityourself" movement. Naturally the new home prospect looks for minimum maintenance. And today, that means aluminum.
Aluminum ductwork belongs with present or future air condition-ing-rustproof forever. Aluminum siding, windows, doors, combination storm sash and screens never need painting, give years of superior performance. Aluminum flashing, gutters and louvers are preferred for trouble-free service. And now new forms of aluminum sheet, natural and color-anodized, are inspiring new concepts in modern home design.
For standard building products designed in Reynolds Aluminum, call your regular supply source. For other product requirements, call the nearest Reynolds office listed under "Aluminum" in classified telephone directories. Or write for descriptive literature.
Reynolds Metals Company, General Sales Office, Louisville 1, Ky.

## LOOK FOR ALUMINUM



Aluminum makes neater, cleaner thresholds-easy to install, long lasting, modern looking.


Aluminum siding never needs painting, can't rot or crack. Fire resistant, too!


Aluminum storm-screen doors and windows never warp or bend, always look good.


Aluminum hardware is preferred for its soft lustre, its modern white-metal look.


This seal, color-printed on Aluminum Foil, is, a means of identifying products or parts "Designed in Reynolds Aluminum."

For quick reference see Catalog $\frac{5 a}{\text { Re }}$ in Sweet's Architectural File.



A land-drainage installation of perforated Perma-Line pipe on the
J. L. Shannon estate near Detroit. Photo Courtesy Superior Tank Company.

## Sewers go in faster with L-M Perma-Line

Pcrma-Line is a bituminized-fibre generalpurpose pipe. Long lengths and tapered drive-on couplings make installation simple and economical. The pipe is light and strong, casy for men to handle.
Joints are leak-proof and don't attract roots. Joints need no cementing or calking. PermaLine can't rust, doesn't shatter. It lasts as long as the best of other kinds of pipe.

Perma-Line offers marked savings to builders and protection for owners. It's suitable for sewers and drains. The perforated type is used for septic tank beds and land drainage. A full line of fittings, couplings, and adapters is available.

Any good bituminized-fibre pipe offers many advantages over older materials. We think L-M Perma-Line has advantages over other brands. Mail the coupon or ask your plumbing distributor to get in touch with us.


Perma-Line is installed quickly. Several 5, 8, or 10 -foot lengths can be joined, then laid into the trench and tapped onto the line.

## PERMA-LINE Pipe



LINE MATERIAL CO.
Milwaukee 1 , Wisconsin
Please send me full information about
Perma-Line pipe and name of nearest distributor.
$\square$ ArchitectBuilderDealer

City \& Zone $\qquad$ State

## NEW <br> PRODUCTS

j. FLEXIbLE VINYL STRIP weatherproofs door sill, prevents leakage of air or dust

A tubular vinyl strip, Duraflex, keyed into an extruded aluminum threshold gives a positive sill seal under any door. When the door is closed the tubing compresses against the door bottom, sealing out dust and drafts. A second vinyl strip weatherproofs the joint

between threshold and floor. Nothing need be attached to the door itself.

Lengths of the Duraftex range from $30 \% / 4^{\prime \prime}$ to $723 / 4^{\prime \prime}$; two heights ( $3 / 4^{\prime \prime}$ and $11 / s^{\prime \prime}$ ) allow for clearance of rugs up to $l^{\prime \prime}$ (Texas oilman carpet depth) thick. Finish is standard mill finish, but thresholds are anodized, for a small price premium.
Flexing the tube does not destroy its ability to bounce back, and it is estimated that

the vinyl seal can withstand a half million openings and closings without showing wear. Dirt can be swept right over the top of the seal. If the plastic is ever torn or damaged, it can be replaced.
Price: $\$ 1.60$ per lin. ft . (average threshold, about \$5)
Manufacturer: Duraflex Co. 3275 NW 37th St. Miami 42, Fla.
k. INTERLOCKING HINGE FINGERS eliminate mortising of doors and jambs

Interior doors, and some exterior (up to $1 \% / \mathrm{s}^{\prime \prime}$ thick), can be hung without going through the usual mortising of door and jamb. The McKinney hinge is screwed flush with the door and jamb edges, and when closed, thè leaves telescope into a single $1 / 8^{\prime \prime}$
continued on p. 196


Design Originality
dresses up doorwars


The distinctive square Imperial escutcheon is more than just a new design. Combined with its smaller companion, the Regent, it introduces an original lock design concept in door decor - matching motifs you can establish throughout your homes. And it gives you - together with Schlage's round escutcheons - an even wider range of novel entranceway effects . . . lets you feature Schlage quality and beauty at a cost well within the limits of a modest building budget.

## ORIGINAL

When placed on the diagonal, the Imperial presents a dramatically different diamond effect . . . welcome variety without added expense for the volume builder ... another example of tasteful originality in door decor made possible by these advanced escutcheon designs.

## VERSATILE . . .

The smart distinction of the Imperial can now be repeated on interior doors with the smaller Regent . . . adding a new note of beauty to interior styling . . . protecting the door surface from unsightly scratches.

## DISTINCTIVE . . .

In a square setting, the beautiful new Imperial escutcheon forms a striking concave background for Schlage locks adds just the right touch of distinction to entranceways. And, with Schlage's original long backset feature, greater freedom of lock placement creates even more possibilities for original doorway styling.

SCHLAGE ESCUTCHEONS . . . for the favorable first impression that helps sell discriminating home buyers.

Send for "NEW DESIGNS" FOLDER No. 626-E-6
This new folder suggests many refreshing ways
to feature door decor $\qquad$ porating Schlage's five beautiful new lock and escutcheon designs. Fully illustrated, with complete specifications.


The Imperial and Regent escutcheons are available in wrought brass, bronze or aluminum, in all standard finishes . . . can be used with a wide variety of Schlage lock designs.

SCHLAGE LOCK COMPANY SAN FRANCISCO - NEW YORK - VANCOUVER, CANADA Address all correspondence to Schlage Lock Company, San Francisco


## Martha Washington



Lowest priced in the line ... $16^{\prime \prime} \times 19^{\prime \prime} \times 14^{\prime \prime} \ldots$ with glass door and interior light . . . automatic, if you wish . . . completely equipped . . . a real buy!

## In Copper, Stainless or 4 Colors!

Write for Brochure \& Name of Your Distributor


BUILDER-
DEALERS

## WANTED!

INVESTIGATE THIS EXCELLENT
OPPORTUNITY WITH NATIONALLY-FAMOUS Place Homes

The hottest line of conventionallybuilt, packaged homes in the industry!

Place Homes-leading manufacturer of pre-cut, conventionally-built homesis moving ahead . . . finds it necessary to appoint additional dealers in Indiana, Ohio, Michigan, Illinois and Wisconsin. Cash in on this excellent opportunity in the great and growing home-building industry as a dealer for our fine nationally-recognized homes.

You can qualify for a Place Homes franchise if:

1 You own ten or more lots subject to F.H.A. approval, or other low down-payment financing.
2 You have building "know-how", plus sales 2 and promotional ability.
3 You have approximately $\$ 25,000$ working $\int$ capital to begin a building program!

Call, wire or write -
Place Homes, Inc., 1226 S. Walnut, South Bend, Ind.

# A BOON TO BUILDERS! Consoweld CURYATOP 

## Preformed plastic surfacing- one-piece counter top and backsplash - ready to install in kitchens and bathrooms

## The "custom-look"

## at a production line price!

Want something that's really packed with appeal for the feminine half of your market? Here it is-new Consoweld Curvatop-the preformed counter-top surfacing for kitchen counters or bathroom vanities. Gives the custommade look that puts the lady on your side!
Easy to install - right on the job! No special tools or forming equipment needed. Easy, step-by-step application procedures assure fast installation by your regular workmen. Counter edges are finished off with beautiful Consoweld Twin-Trim (3) Mouldings, color- and patternmatched with Curvatop, for a neat, permanent and beautiful installation.

Get the facts on the entire Consoweld line! Curvatop is a companion to other Consoweld surfacings, each especially designed to produce the best results at a minimum cost, depending on the requirements of the job: whether shop-fabricated or job-installed; vertical or horizontal. Inquire about extra thick Consoweld 10 for bathroom walls and shower stalls.

[^13]
## Consowelio

the nation's finest plastic surfacing ... good for a colorful lifetime

## Mail coupon today

for complete information
Consoweld Corporation,
Wisconsin Rapids, Wisconsin
Please send me complete information on Curvatop and name of nearest Consoweld distributor.


Curvatop is a one-piece preformed Consoweld unit, 8 feet long and $251 / 2$ inches wide for standard counter widths. Easily cut to shorter lengths or widths. Your Curvatop "package" includes Curvatop in a choice of 10 popular colors and patterns and Consoweld accessory items to produce a complete installation with that "custom-built" look.

Get Faster Sales with the "Magic Ring!"


## HERE'S WHY.

1. Waste King attracts more home sales and rentals than any other visible feature costing up to five times more. It's your lowest budget, highest quality feature !
2. Waste King is now a household word that means greater convenience. Saves time, steps, and work by eliminating garbage automatically. It's your best new saleable feature!
3. Waste King features exclusive Lifetime Grind Control for clogproof, longer service and exclusive Super "HushCushions" for smoother, quieter, operation!
4. Waste King's service record is best in the industry . . Less than $1 \%$ callbacks. Relieves the builder of pastsale complaints.

America's Finest Garbage Disposer
"The Eyes Buy the Visible Features"

## NEW

PRODUCTS continued from p. 192

thickness, thus automatically providing an exact $1 / s^{\prime \prime}$ clearance between jamb and door.

The hinge itself is heavy-gauge wrought steel, with $1 / s^{\prime \prime}$ thick shoulders to absorb lateral strain usually taken by the mortise, and

to make alignment automatic. The $31 / 2^{\prime \prime}$ hinge is available in three finishes: dull brass plated, nickel plated and bonderized prime coated for on-job finishing.
Price: Under $\$ 1$ per pair, retail
Manufacturer: McKinney Mfg. Co. 1715 Liverpool St. Pittsburgh, Pa.
I. WINDOW AND DOOR TRIM requires no nails, snaps into place
Door openings can be trimmed in less than five minutes, using Snap-On Trim, a new metal molding made by US Gypsum. Intended for dry-wall construction, the trim consists of metal bull-nose casing that snaps into a saw kerf cut in the door frame. Only the

pressure of the hand is required to install each piece.

Builder Elbert Fausett's Broadmoor project in Little Rock used almost 21 miles ( 110,000 lin. ft .) of the trim on windows and doors. Cost studies showed a saving of $\$ 47$ per M. lin. ft . over conventional casing.
continued on p. 202
 easier handling, less freight.

- HIGH TILING-IN FLANGE assures positive, permanent, waterproof seal between tub and wall.
- PORCELAIN ON STEEL is more resistant to shock, abrasion and temperature change.
- FUIL SEAT TUB has apron brought in to straight sides and bottom ... special, expensive culting of floor and wall tile eliminated.
- UNDER TUB FRAMEWORK requires no special hanging or wood frame . . . tub rests on floor for perfect drainage.


## Looking for ideas to hold costs down?

## SAVE DOLLARS ON FRAMING, HANGING, FINISHING CLOSET

You save hours, save dollars and add closet convenience that sells homes-all with Truscon Steel Sliding Closet Doors.

Here's how. You simply build the wide opening to size and attach your Truscon Steel Door Frames. Shipped knocked down, they are easily assembled in minutes. Corner connections form neat hairline joints. These Truscon Frames are finish trim and molding, too. And, they're sized to fit practically every type of wall construction.

Now install the floor track, engage door leaves in header and track and you're done. No cutting, fitting, planing needed. You've erected a door that slides quietly on nylon rollers, that won't stick because steel
can't ever warp, swell or shrink. One-coat painting to match room decorations completes the job.

And what superb closet convenience you have to sell! Women love closets they can see in, see up, reach in, reach up. No fumbling. Everything in plain sight. Closets with sliding door convenience sell homes. Truscon is pre-selling them in extensive national advertising.

Truscon Steel Interior Swing Doors and Frames offer the same easy, time-saving, money-saving erection. They're sound-deadened, too. Both types quickly available in popular sizes from Truscon warehouses. See them at your dealer's, or write Truscon for details and specifications.

## REPUBLIC STEEL Worlds Widest Range of Standard Steels and Stee Products




## SAFE, GROUNDED WIRING IS A SALES POINT

A modern pull-in, pull-out, grounded steel raceway system is safer . . . and salable. Provide quality wiring protection with Republic ELECTRUNITE ${ }^{\text {® }}$ E.M.T., the original lightweight rigid steel raceway. Exclusive "Inch-Marks" and new "Guide-Line" make ELECTRUNITE easiest of all to install . . . with minimum waste. Exclusive inside-knurling cuts friction, makes wire-pulling easier. No threads to cut. Compressiontype connectors and couplings keep moisture out. It's galvanized to resist rust. Approved by the National Electrical Code for concealed, open and concrete construction. Tell your electrical contractor you want ELECTRUNITE E.M.T. for safety.

## FITTING, DOORS




TRUSCON METAL LATH HELPS KEEP CEILINGS CRACK-FREE
Expanded metal lath is your best plaster base. It resists cracking and crumbling. Only metal lath grips plaster so tightly that the surface is virtually earthquake resistant! Fire resistant, too. Metal lath and plaster are ideal for ceiling radiant heating systems. Truscon Metal Lath is easy to erect, easy to work over. More than 40 different Truscon Metal Lath items and accessories are approved by all building codes. Tell your plastering contractor you want the crack-resistance of metal lath.


# Gerholz Uses Hotpoint to pul extra "buy appeal" in his 



When Gerholz Community Homes, Inc. decided to develop their Westgate Park community of 800 homes in Flint, Michigan, they enlisted the help of architect William K. Davis.
Davis' drawing board solution: Design each house from in-side-out. Give the customer, not what he thinks he can buy, but what he dreams of owning!
The new 3-bedroom contemporary-styled homes now offered by Gerholz prove the value of this solution. They feature saleswinning, all-electric show-place kitchens equipped with the new Hotpoint Customline built-in appliances. And Gerholz's desire to incorporate into general specifications as many luxury features as possible, and still keep the price within reach of the average new home buyer, is being rewarded in heavy buyer demand!

The fact that you can now offer families of modest incomes the luxury and convenience of Hotpoint Customline built-in kitchens. . . plus the widest choice of installation designs . . . gives you today's most outstanding sales advantage! Because these kitchens are built in . . . they can be covered by FHA mortgages and included in regular monthly home payments!
Remember, the Hotpoint name on appliances in homes you build is the sign that gives credence to your desire to offer the best. It's the name that proves only the finest is good enough. Join the builders who stand out above and beyond the rest ... whose homes sell faster . . . whose reputations for quality are the finest . . because they offer the finest-Hotpoint AllElectric Customline Built-In Kitchens and Home Laundries.

The fabulous new Customline Ensemble by Hotpoint gives you a kitchen that's beautiful and func-fional-built-in cooking top and oven, built-in refrigerator-freezer, undercounter dishwasher, garbage disposer unit... plus the famous Hotpoint Launduet.

(Hotpoint Customline
Super Oven)
(Hotpoint Customline Refrigerator-Freezer


## entenline Kitchens <br> Flint, Michigan, Westgate Park Homes!



Holder of the most coveted NAHB awards, Robert P. Gerholz has gained a national reputation for outstanding quality, design, and lasting value in home building.
"We selected Hotpoint Customline Appliances for our 1955 Pacemaker Homes because they best expressed the Advanced Design For Living in Westgate Park, our new 800 home community."
R. P. GERHOLZ


(Hotpoint Customline
Dishwasher)


Have your Hotpoint Distributor show you how leading builders are using Hotpoint Customline Built-In Appliances to make their homes the most modern in their area. Consult him before starting your next project. He'll give you many helpful ideas.

loter on.

## Mueller Climatrol announces a now combination year-'round air conditioner

## Fits the Cost-Conscious Builder's Budget

Type 128 (gas) - 228 (oil) furnace is a prewired unit compact enough to install in closet, basement, or utility room. $593 / 4^{\prime \prime}$ high (to top of casing) $\times 471 / 2^{\prime \prime}$ wide by $36^{\prime \prime}$ deep (with burner) . 100,000 -Btu input on gas, 110,000 -Btu input on oil. Backdraft damper, standard equipment. Vestibule, optional.
Type 928 cooling unit is a 2 - or 3 -hp refrigeration assembly mounted on a frame that slips easily into the cooling casing provided with the Type $128-228$ heating unit. Operates on single or 3 -phase current. Uses same blower as furnace.

There's no doubt about it - this Mueller Climatrol combination unit is one of this year's best bets for turning prospects into buyers of your homes. And, it's priced to fit even your low-cost homes. Write for further details: Mueller Climatrol, Dept. 265, 2020 W. Oklahoma Avenue, Milwaukee 15, Wisconsin.

Snap-On Trim is delivered to the job with $7^{\prime}$ side sections having right and left millcut copings. Head sections (42") are cut on the job to fit any width, using tin snips to cut to size. The lengths of casing are then

inserted into the saw kerfs with pressure from the heel of the hand.

Packaging is in quantities for six doors, both sides, with a second unit of $10^{\prime}$ sections for picture windows or other odd-sized openings.

Price: Approx. 10c per lin. ft. (Chicago area)
Manufacturer: US Gypsum Co.
300 W. Adams St.
Chicago 6, Ill.
m. ZINC PAINT protect metal from rust, can be applied with brush or spray gun

Gutters, corrugated steel, and other exposed metal can be rust proofed with a new brushed or sprayed zinc coating that claims all of the advantages of hot-dip galvanizing.

Zinktron can even be used over rusted surfaces (loose scale removed), for the gal-

vanic action takes place right through the rust. If the coating is scratched, rust will not travel beneath it, assuring no hidden rust.
Coverage is up to 450 sq . ft . per gal, and the product dries in one hour. In tests, Zinktron-painted metal withstood bending of $180^{\circ}$ without flaking off at the bend.

Price: $\$ 14$ per gal.
Manufacturer: The Constad Laboratories 214 W. 29th St.
New York 1, N. Y.
continued on p. 206
 fraction of the cost of tile.
Colorundum is far more resistant to traffic than ordinary concrete floors. It is a balanced formulation of nonslip aggregate (next to the diamond in hardness), water-repellent compounds, and durable colors . . . contains no silica, quartz, metal or sand. It is easy to keep clean, and since it contains no metal, it will not rust or stain.
Colorundum is available in eleven decorator colors.

Fused color. Not a paint or coating! Colorundum is troweled into the concrete topping and becomes an integral part of the surface, producing beauty and durability.

## A. C. Horn Co., Inc.

Dept. H12-635, 10th Street \& 44th Ave., Long Island City 1, N. Y.
$\square$ Please send me complete information on COLORUNDUM.
Name ritle

Firm Name

Address
City $\qquad$

DIVISIONS OF SUN CHEMICAL CORPORATION


## CHASE COPPER ...sign of QUALITY in drainage lines!

Remarkable how inexpensive it is to give drainage lines two-way extra quality, with Chase copper drainage tube (DWV). Far longer service life and greatly improved efficiency are assured.

Drainage lines of Chase copper tube resist corrosion-can't clog with rust-stay efficient over the years! Their interior is smoother; flow is unobstructed at joint connections-larger volumes of waste water can pass through them because friction is reduced!

Chase copper drainage tube is 4 times lighter than ordinary drainage pipe. Can be pre-assembled and installed with great savings in time! It can be cut to length right on the job. Requires fewer joints because it comes in 20 foot lengths. And rugged, leakproof solder joints fit within standard partitions, eliminating expensive furring out!

Insist on Chase copper drainage tube (DWV). Add extra-value to every home-with little or no extra cost!


Longer-lasting radiant heating installations are economical, quick and clean when made from Chase copper water tube. No worry about leaks or repairs-can't clog with rust!

# NOW-LUDMAN QUALITY FOR EVEN THE LOWEST-PRICED PROJECT HOUSES! 



## BE FIRST with the FINEST!



## Specify the new, Iarge

 THERMADOR Bilt-in Electric OvenSuperbly styled in lifetime stainless steel, the brilliant new "Masterpiece" oven is proudly added to the celebrated selection of Thermador Bilt-in Electric Ranges . . . the Original and the Finest. Only with the "Masterpiece" can you offer: More usable space in oven $18^{\prime \prime}$ wide, $18^{\prime \prime}$ high, $197 / 8^{\prime \prime}$ deep (even a $37-\mathrm{lb}$. turkey leaves space to spare!) - Ventilated* oven door, never too hot to touch - Cool, plastic handle* and inclined controls finished in dark Master Blue - Amazing new baking element* distributes heat quickly, evenly, for the most perfect results! - Recessed* Infra-Red broiler, with specially designed pan and tray* for smoke-
 less broiling - Electric Tele-minute Timer, with chime reminder - Clear-Brite oven interior in stippled, acid-resistant white porcelain • New, exclusive indicator lights* ${ }^{*}$ Automatic thermostatic controls • Automatic interior light • Heat-deflecting hood* - Plus many other sales-building features in a super-size "Masterpiece" oven that fits any standard 24 " cabinet.

Thermador, the genuine Bilt-in Electric Range made only by Thermador Electrical Manufacturing $\mathrm{C}_{0}$., offers a choice of 12 stainless steel cooking tops ... 2, 4, or 6 easy-to-clean surface elements... large, versatile oven ... 170 square inch griddle with Vari-Speed Switch...DuoCook that converts from deep-well cooker to extra surface element. Also, special models in choice of eight porcelain enamel decorator colors.
*A Thermador Exclusive !

## THERMADOR electrical manufacturing co.

NEW
PRODUCTS

n. FOLDING DOOR combines solid wood panels with space-saving action
Accordion-like closures for closets and doorways add to the useful space in any room. Panelfold's new doors add the grain and color of 15 natural woods in their custom line, and eight solid colors in the standard models.
Each $31 / 2^{\prime \prime}$ solid wood panel is edge-joined with vinyl plastic connectors, and hung from an overhead track on nylon rollers. No threshold or floor guides are needed. Pantograph action hinges stack the panels into a small space on either side ( $21 / 8^{\prime \prime}$ plus 1-11/16" per ft . of opening width).
Price: $4^{\prime} \times 6^{\prime} \times 81 / 2^{\prime \prime}, \$ 72.90$ in lacquer; $\$ 86$ in color; wood grains higher
Manufacturer: Panelfold Doors, Inc. 4951 E. 10th Court Hialeah, Fla.

o. FLUORESCENT LIGHT FIXTURE diffuses general illumination for kitchen tasks

No location in a house needs the high-level lighting required by the kitchen. Fluorescent fixtures originally designed for commercial use will provide high lighting efficiency without glare, packaged in slim, well-styled housings. Bottom and sides of the fixture are of corrugated plastic which offers high light transmission with low surface brightness. A combination hinge and latch permits the diffuser frame to swing down free of the lamps for cleaning or replacement.
Many sizes are available, in $16^{\prime \prime}, 28^{\prime \prime}$ and $40^{\prime \prime}$ widths, and $48^{\prime \prime}, 72^{\prime \prime}$ and $96^{\prime \prime}$ lengths. All units are $63 / 4^{\prime \prime}$ deep.
Prices: $16^{\prime \prime} \times 48^{\prime \prime}, \$ 55 ; 40^{\prime \prime} \times 48^{\prime \prime}, \$ 85.45$; $16^{\prime \prime} \times 72^{\prime \prime}, \$ 62.70$
Manufacturer: Luminous Ceilings, Inc. 2500 W. North Ave. Chicago 47, Ill. continued on p. 214


## a new, low cost paneling that builds-in style and quality



Builders get four real economies in Harbor's dramatic new sculptured plywood: 1. A rigid structural and finish panel all-inone. 2. A finish material of lasting beauty with tremendous sales appeal. 3. A paneling or siding that costs considerably less than most materials you would want in your homes. 4. Big, easy-to-handle panels that go up fast -32 square feet at a time.

Harborwave is made in three designs; KNOTTY PLANKED has faces carefully selected for even natural beauty of grain and knots, with random-width plank pattern. KNOTTY has same face without planking. CLEAR relief grain has select faces, even-grained without knots.

Use Harborwave for siding, soffits, entrance accents, fences, built-ins, paneling, ceilings...in homes, stores, commercial buildings. May be finished in warm natural stains, exciting tone-on-tone combinations or colorful paint. Use Harborwave to build style, quality and economy into your homes. Ask your lumber dealer. from the makers of the royalty of plywoods... SIPER Hantord HARBOR PLYWOOD CORPORATION, ABERDEEN, WASHINGTON. *TM Applied For

## YOU GAV' BOLLLDSLAB-ON-GRADE CONSTRUCTION

## WITH PERMANENTLY WARM AND

## DRY FLOORS!

This illustration shows how the proper installation of Premoulded

VAPOR SEAL APPLICATION
AB-ON-GRADE CONSTRUCTION


## Eliminates

- Excessive Window Condensation
- Blistering of Exterior Paint
- Deferioration of Adhesives Bonding Floor Finish Materials
- Deterioration by Mildew of Rugs, Furnishings and Clothing


The popularity and economy of slab-on-grade construction is a proven fact. Its feasibility, however, rests on the proper application of a true vapor seal to keep the slab dry plus a resilient, impermeable perimeter insulation to prevent heat loss. Unfortunately the building industry has been guilty of the promiscuous use of permeable materials under the guise of vapor barriers. When purchasing any vapor seal material be sure it meets these Sealtight standards of quality: permeance rating of only .0066 grains per square foot . . . resistant to rot, mold and termites . . . strong enough to resist tearing and puncturing . . . expandable . . . quickly and easily installed-Premoulded Membrane has them all.
Don't risk your reputation by using an inferior "so-called" vapor seal material. We sincerely advise and invite your comparison of Premoulded Membrane against all other vapor barrier products . . . we're sure that once you do you'll also agree that there's only one true vapor seal on the market . . . Premoulded Membrane.
Equally effective for crawl-space or basement installation.
"Guardian of the Ftome"
MANUFACTURED BY. W. R.MEADOWS, inc.

10 KIMBALL STREET • ELGIN, ILLINOIS

ARCHITECTS, BUILDERS, HOME OWNERS . . .
Remember, the time to "eliminate" destructive moisture is in the original construction, with the use of Sealtight Premoulded Membrane and Corktite . . . all other methods are merely temporary "stopgaps". A complete set of structural recommendations (tech-tips) on the applications of Sealtight Products is available . . . WRITE TODAY for your copy.


## See how these modern

Frigidaire products fit into the architect's over-all plan


Frigidaire Imperial Washer and Filtra-matic Dryer in production line order form handy laundry unit combined with utility sink and wall cabinet for detergents, soap and brushes. No venting is needed because Frigidaire Filtrator traps excess lint and reduces moisture.


Frigidaire Year-Round Conditioner in utility area, heats in winter, cools with refrigeration in summer. Provides a onetemperature home 365 days a year. For more details, see the Frigidaire Air Conditioning advertisement in this issue. Frigidaire upright Electric Water Heater is fully automatic, dependable.


Frigidaire two-door Food Freezer-Refrigerator Model CIV-150 is strategically located in the center of the inside wall to facilitate both food storage and meal preparation. Imperial Wall Oven, with space-saving French Doors, is on same wall at comfortable height.


Frigidaire Fold-Back Surface Units swing down for counter-top cooking, lift with a touch and turn off automatically when not in use leaving counter space clear. Frigidaire Under-Counter Dishwasher and sink, with built-in waste disposer is located on window wall.

## Frigidaire

Built and backed by General Motors

Meet Mr. Robert A. Little, designer of this unique Frigidaire "living" kitchen


Born in Boston, Mass., and a graduate of Harvard, Bob Little has taught and lectured on architecture at many of our leading universities. After serving a "hitch" in the army he settled in Cleveland, where he organized his present firm in 1947. Here he has built an enviable reputation, designing, among other projects, the Better Homes \& Gardens "Home For All America," the McVey House, Chagrin Falls, Ohio, which won the Progressive Architecture award in 1955.

## Read architect Little's thinking behind this kitchen design

Today's kitchen, as I have conceived it, is central to family living in several ways. (1) For the lady of the house, the kitchen center is an office for menu planning, a factory for food preparation, a laboratory for recipe experiments and a processing plant for washing and care of clothes.
(2) For children, the kitchen is a snack bar, and the laundry can double as a wet-weather entrance.
(3) For the man of the house, it's an aid to entertaining, a bar for parties. Our Frigidaire Kitchen fulfills these needs in a way that fits most moderatecost development houses.

The house is shown with a front yard car port and patio, but the kitchen can be used on the rear wall, facing back yard outdoor living, in one-story and two-story houses. The kitchen is semi-open to dining space and to patio.
The problems encountered in plan ning this kitchen were greatly simplified by the well thought out design of the Frigidaire products given us. Our efforts in saving labor, for instance, were helped considerably by the builtin labor-saving devices in the Frigidaire Appliances themselves. And the up-to-the-minute styling on all products, both outside and in, permitted us to retain a modern "look" throughout the entire area.
See back page for more detailed views of the kitchen.
Send for complete details of this first Kitchen Plan showing how you can adapt it in whole or part to the homes you're building today. You'll find a wealth of usable ideas in this and the other plans to follow. Start your file now. Just send $\$ 1.00$ with your request on your letterhead, or use the handy coupon at right.

## Making the kitchen the



1. Automatic Electric Water Heater
2. Year-Round Air Conditioner
3. Automatic Electric Washer
4. Automatic Electric Dryer
5. Electric Ironer
6. Two-Door Refrigerator-Food Freezer
7. Wall Oven with French Door Design
8. Fold-Back Surface Units
9. Turbo-Spray Dishwasher
10. Food Waste Disposer

## center of activity in

## medium - priced 1600 sq. ft. house



Frigidaire Division, General Motors Corp., Dept. 1000, Dayton I, Ohio

Gentlemen: Please send me Frigidaire Kitchen Plan number BSD101, which includes floor plans, detailed drawings of the kitchen and related areas, elevations, specifications of materials, equipment and colors. Attached is $\$ 1.00$.

Name
Address
City $\qquad$ Zone $\qquad$ State

## ANNOUNCING FRIGIDAIRE'S NEW

## "KITCHEN PLAN PROGRAM" FOR BUILDERS

## to help you sell the room that sells the house



As a service to builders, Frigidaire is commissioning outstanding architects to design a series of exciting, yet practical, new kitchens

With this initial kitchen design idea, by architect Robert A. Little, of Cleveland, Ohio, Frigidaire launches a new program aimed at fulfilling a long-felt need of project and merchant builders for help in designing kitchens.

Here's the way the plan works: Frigidaire is commissioning a number of the nation's most talented architects to create original designs for today's modern, functional kitchens.
Some of you will be able to use these kitchen ideas without any change. Others


5hes may adapt just part of the design to your homes. Either way you will have attractive kitchens that prospective buyers will find hard to resist.

Designs will include kitchens for homes in the most popular price classes to meet a variety of tastes. Kitchens will be designed for ease and economy of construction, using standard parts, components and materials, and will include Frigidaire's newest, most modern products.
Thus, this program will give builders a continuing series of designs, by different architects-such as Carl Koch, Harwell Harris, Rufus Nims, A. Quincy JonesFredrick E. Emmons, and Robert A. Littleeach from a different part of the country.
Remember, in a new home, the kitchen is the one room that really sells the house. And here is one way to make sure your kitchens are real "salesmen" - the Frigidaire Kitchen Plan Program is designed to do just this!


Panels of Blue Ridge Glass in Doublex pattern
are a key point of interest in modern homes.

## BLUE RIDGE PATTERNED GLASS

Libbey•Owens•Ford Glass Co., Dept. B-765
608 Madison Avenue, Toledo 3, Ohio
Please send me your book showing ideas on decorating homes with Patterned Glass.
Name (please print)
Street


Ideas for design
Our 16 -page book illustrates many ways leading architects and designers have used this versatile glass for striking effects in homes. Mail the coupon.


w

# HOW TO BUILD THE BEAUTY Andersen 



## of outdoors into daily living

## Windowalls



## Here's why sfuctoglas IS NO. 1 <br> plastic building panel

A choice of 21 beautiful colors STRENGTH Shatterproof . . . withstands impact, weathering SIZES Corrugated and flat panels in complete range of sizes FINISH Flawless permanent finish . . UNIFORMITY © Special production process as. sures best quality control

COST Priced competitively
Priced competitively
in spite of superior in spite of superior
quality and performance

IN A BUYER'S MARKET, you need something new and different to add extra buy appeal . . . spark interest . . . help close the sale. That is why architects, builders and contractors specify STRUCTOGLAS!
This decorative and functional translucent plastic paneling creates its own sales talk . . . adds new eye-appealing interior and exterior motifs.
STRUCTOGLAS also is tops in quality. Made by an exclusive molding process, it features extreme and consistent uniformity of color, gauge and strength. This accuracy makes installation fast, easy and profitable.
WRITE TODAY FOR DETAILS AND NAME OF NEAREST DISTRIBUTOR.

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international molded plastics, inc 4413 west 35 th street $\cdot$ cleveland 9 , ohio


Write for Catalog SL-46.
 STRUCTOGLAS 4413 West 35th Street, Cleveland 9, Ohio Please send me, without obligation, ( ) literature ( ) name of nearest distributor for STRUCTOGLAS plastic panels.

Name $\qquad$ Title
manufacturers of famous BROOKPARK plastic dinnerware

Company
Street
| City. $\qquad$ Zone _ State

6267-1M

Yes, LOUVERDRAPE FABRIC
Vertical Blinds fit any window, regardless of size or shape...SLANTING-SLOPING-even SKYLIGHTS


"Our Model Nine Seventy Six is a big hit with buyers who have difficulty in deciding whether they need a two bedroom or a three bedroom home. A Modernfold door quickly converts the study into a third bedroom and turns many lookers into buyers. And in the front hallway, we consider MODERNFOLD an absolute necessity from the standpoint of design, because it eliminates congestion and door-swing in this area... another important selling feature."

Wherever Modernfold is installed, it attracts the prospect's attention. You can demonstrate a Modernfold door to potential buyers, while explaining its space-saving and room-dividing advantages. It's one of those unique, low-cost features which add so much to the saleability of a house.

These rugged doors are built to last the lifetime of the house. Modernfold construction standards are the highest in the industry; balanced, double-strength steel frame mounted on overhead tracks and covered in long-
wearing, washable vinyl fabric, which keeps a fresh, new appearance for years.

Modernfold doors are easily installed, and require almost no maintenance. Builders every day are finding new ways to turn lookers into buyers when they install Modernfold.

The Modernfold Custom line-for closures of any size-is available through MODERNFOLD distributors. Look under "Doors" in city classified directories. The "Spacemaster" line-for standard small closures-is available at your building supply dealer. Or write New Castle Products, Inc., Dept. F20, New Castle, Indiana. In Canada: New Castle Products, Ltd., Montreal 6.

(C) 195s, new castle products, ine.

## S E L L <br> M○RE HOMES!

Assure your prospects of adequate storage space. Precision and Simplex Folding Stairways can help your homes move fast for more profits!

## PRECISION QUALITY



## SIMPLEX QUALITY

Plus Lam Cost


MANUFACTURED BY
PRECISION PARTS CORP.
400-HH North First Street - Nashville 7, Tennessee

## NEW

 PRODUCTS continued from p. 206p. Perimeter register changes hot or cold blasts to gentle zephyrs

Another engineered baseboard diffuser for use with perimeter warm-air heating systems is Auer's Perfusaire, an angled grill-faced register that can diffuse cool air as well. At an air pressure of 110 cfm ., the Perfusaire will spread air horizontally over a $13^{\prime}$ wall.

while throwing it to a vertical height of $6^{\prime}-6^{\prime \prime}$.
No stackhead is required, and a patented balancing damper permits complete control over predetermined cfm. requirements. Louvered fins are factory set for proper angle of deflection, and the entire face lifts off for easy installation.
Price: $\$ 3.90$ to $\$ 5.60$
Manufacturer: The Auer Register Co. 6600 Clement Ave. Cleveland 5, Ohio.
q. BASEBOARD DIFFUSER for heating and cooling gives scientific air distribution
A fan-shaped blanket of air is spread over perimeter walls by Lima's newest baseboard diffuser. Standard lengths are $2^{\prime}$ and $4^{\prime}$, but connectors convert both sizes into multiple units for continuous installations. In new construction, the diffuser can be installed

against the studs before plaster or dry wall is applied, leaving little protrusion (diffuser is $2^{3} 4^{\prime \prime}$ deep).
Four rows of horizontal louvers running the length of the register provide proper air distribution upward and outward over a wide area. A built-in, spring-loaded, hinged damper can be set for any flow, even to a complete shutoff. Registers are factory finished in beige, but can be repainted.
Price: $4^{\prime}, \$ 9.35 ; 2^{\prime}, \$ 6.95$; connectors, 35 e Manufacturer: Lima Register Co.

Lima, Ohio
continued on p. 220


## NO BATHROOM?

AUTOMATICALLY
WITH NO TRAS A MODERN. A WITH NO TRASH

NO HOME IS REALLY MODERN


MODEL BI-2-BU. Capacity
To sell a house-you must please the housewife. She's quick to see the advantage of Incinor. It ends the problem of trash and garbage disposal-gives her undreamed of convenience. Incinor is fully automatic, too-"just set it and forget it."
You can claim this powerful selling advantage by featuring Incinor in the homes you build. It's a must in homes with automatic heat.
Put this low-cost sales tool to work now. Choose from a complete line of dependable, trouble-free Incinor models. Incinor is A.G.A. approved for use with natural, manufactured, mixed or LP gases.

APPROVED
By A.G.A.
WRITE TODAY FOR DETAILS

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BOWSER, INC., CAIRO, ILLINOIS
"PIONEERS IN GAS.FIRED INCINERATION


ROWE MANUFACTURING COMPANY 1159 HOLTON STREET.GALESBURG, ILINOIS

## THE "FORWARD LOOK" COMES TO KITCHENS THANKS TO CRANE!


"Wide-Open Spaces" for a ranch house. Extended L design. Planning ideas for this and other Crane kitchens available for builders.

"Planter's Punch" includes eating area. Soffit is Crane radiant baseboard panel. Crane experts will help with ideas for your kitchens.

"Island Magic" is double $U$ design, includes eating and laundry area. Wide variety of Crane wall and base cabinets suit any builder need.

"Pewter and Pink" is attractive small U kitchen built around Crane sink . . . the heart of a modern kitchen.


# Smart, new-design base and wall cabinets of lifetime steel . . . in white or color 

A good many forward-looking builders, these days, get not only the kitchen sink from Crane, but the rest of the kitchen as well. Crane's newly introduced "Forward Look" cabinets are the reason . . . and a very good one, too.

Contoured cabinets of lifetime steel have a distinc-

"Don't Fence Me In" kitchen includes laundry and eating space. Crane cabinets are lifetime steel. Won't warp, never need painting.

"Carrousel" is happy design for small home. Crane cabinet drawers have one-piece interiors and roll easily on Neoprene tires.
tive new look that people notice-right off. They were designed primarily for the builder ... easily installed and priced right. Available in white or four colors that mix or match to give you more variety in the homes you build.

The Crane name is one you can use with real selling advantage when you take prospects through your kitchens. Everybody knows Crane. And you know how often the kitchen is the clincher that closes the sale.

Call your Crane Branch or Crane Wholesaler today. Talk it over with a Crane Kitchen Specialist, and see how neatly Crane kitchens fit into your plans... and your budget.

Your prospects are seeing Crane kitchens in LIFE magazine. They know that a Crane kitchen


CRANE CO.
General Offices: 836 S. Michigan Ave., Chicago 5, III. VAIVES - FITIINGS - PIPE - KITCHENS - PLUMBING - HEATING

## CRANE STARTS

ITS SECOND CENTURY
OF QUALITY
Founded July 4, 1355


Model PH-90-9 cu. ft. capacity


## Automatic defrosting at the push of a button in four, low-cost Westinghouse Refrigerators

New home prospects are seeking higher living standards . . . more conveniences. Automatic defrosting is one way you can help them attain thest desires. The new, exclusive patented Westinghouse system permits Freezer to be defrosted so quickly that frozen foods remain firmly frozen. User merely pushes "Defrost" Button, and frost is removed automatically as soon as unit starts to run.

All four Westinghouse Push-Button* Automatic Defrosting Refrigerators also
offer such most-wanted features as fullwidth Freezers; bonus egg and bottle storage in deep Shelves-in-Door; fullwidth Humidrawer ${ }^{18}$ with moist cold to keep vegetables crisp and fresh; and the famous, extra-capacity, $1 / 6$-hp Economizer Mechanism.
Put one of these model home salesmen to work for you now. For more details, see your distributor or write WESTINGHOUSE ELECTRIC CORPORATION Electric Appliance Division - Mansfield, Ohio

## Other sizes available:

Model PH-125-12.5 cu. ft. Model PH-109-10.9 cu. ft.
(shown at left)
Model PH-80-8 cu. ft .

Makers of Refrigerators - Home Freezers - Ranges • Laundromats - Clothes Dryers • Dishwashers • Water Heaters • Vent Fans • and Food Waste Disposers
you can be SURE...If it's Westinghouse

## Frisct ventlating fans

## No other inexpensive "Extra"gives such push to your new home sales!



Low-Cost Ventilation - Low-Cost Installation
MODELS FOR EVERY NEED. NO SERVICE CALL BACKS FASCO offers a complete line of ventilating fans for every building need . . . in kitchen, bath and utility rooms...at prices to fit your building budget. All models guaranteed 5 years! Specify FASCO for your new homes.

-

Automatic wall ventilating fan Switch operated. 882, $8^{\prime \prime}$ blade, 375 CFM; 1082, $10^{\prime \prime}$ blade, 550 CFM.


MODELS
pull-chain operation. For outside walls, $41^{\prime \prime}$ to $15^{\prime \prime}$ thick. 847, $8^{\prime \prime}$ blade, 475 CFM; 1047, $10^{\prime \prime}$ blade, 650 CFM.



A sturdy, efficient, low-cost fan for any home. Automatic

ALL THE FEATURES BUILDERS WANTDESIGNED WITH HOME BUYERS IN MIND
-1082

## MODELS 728-1021

For inside walls and ceilings. Turbo-Radial Impeller develops greater pressures. 728, $7^{\prime \prime}$ Impeller, 325 CFM; 1021, $10^{\prime \prime} \mathrm{Im}-$ peller, 530 CFM.


NEW
PRODUCTS
continued from p. 214


## SPARTAN mosettes

An extremely versatile natural clay type tile, available in full range of attractive unglazed colors. Sizes $1 \times 1,2 \times 1,2 \times 2,1 / 4^{\prime \prime}$ thick. Rugged, impermeable, slip resistant, with high degree of vitrification. Mounted in choice of unlimited patterns for easy and inexpensive setting, even in irregular spaces.
A most practical tile for floors in Schools, Hospitals, Institutions and Swimming Pools.
Other Spartan Specialties include:
DRESDEN PORCELAIN - A vitreous porcelain body tile in sizes $2 \times 2,2 \times 1$ and $1 \times 1$ approx. Eleven attractive colors to harmonize with or match glazed wail tile. Stain resistant. Easily mercial floors.
CONDUCTIVE TILE - A much needed tile for Hospital Operating Rooms. Provides a conductive medium to dissipate electrostatic charges on personnel and equipment in contact
with floor. Meets all specified requirements of National Fire Protective Assoc. Bulletin No. 56.

Write for Complete Information


r. CLOSET DOORS stretch from floor to ceiling to open up storage space

All closet space, including usually hard-toreach overhead shelves, is opened to view and to hand with Esco's sliding doors. Stretching the full height of the wall, the Novoply panels are top hung from an extruded aluminum track on nylon rollers. Steel channels bind the edges to prevent warping, with rear-surface scoring as extra insurance against this problem.

Standard ( $6^{\prime}-8^{1 / 2^{\prime \prime}}$ ) height doors are also made and either size may be had in a birchveneer face, if desired, at a higher price.
Price: $4^{\prime}$ wide, $\$ 46 ; 5^{\prime}, \$ 54 ; 8$, $\$ 92$ (Novoply). Stops, finger pulls, and bottom guide strips included.
Manufacturer: Engineering Sales Co.
of Pittsburgh 550 McNeilly Rd. Pittsburgh 26, Pa.

s. SLEEK WOOD CABINETS have no protruding hardware, are birch-finished
Originally designed for Chicago's luxury 1000 Lake Shore Drive apartments, the Centennial line of kitchen cabinets has now gone into general distribution. The contemporary lines are not interrupted by hardware; all doors open by finger wells grooved into top or bottom edges.

A full line of cabinets and bases is available from narrow $12^{\prime \prime}$ units to wall-length $84^{\prime \prime}$ bases. Mortise and tenon and T\&G construction are used throughout, with glued and screwed corner cleats for extra rigidity. If desired, Centennial cabinets will be shipped semifinished, knocked-down.
Prices: (dealer) $12^{\prime \prime}$ cabinet, $\$ 19.65 ; 36^{\prime \prime}$, $\$ 26.50 ; 12^{\prime \prime}$ base, $\$ 26.50 ; 36^{\prime \prime}, \$ 40.25$ Manufacturer: I-XL Kitchen Cabinet Co. Goshen, Ind.

## Here's The Butli-ln That's Your Bast Buy



## Here's A Reason Why

No Johnny-come-lately, Stiglitz Built-Ins are backed by over 135 years experience in the manufacture of cooking equipment -your assurance of sound engineeringyour customer's assurance of trouble-free performance. The insert oven, for example, is so perfectly insulated it can be inserted in a wood cabinet with only $1 / 8^{\prime \prime}$ clearance, underwriters approved! Stiglitz has extra quality features to offer, too. Let us tell you more reasons why Stiglitz Infra-Aire is your best buy.


STACK-ON OVEN


FIT ALL STANDARD KITCHEN CABINETS COOKING TOPS IN 4 MODELS
$14 \times 201 / 4^{\prime \prime}$ GRIDDLES ALSO AVAILABLE
Watch for announcement of gas models
THE STIGLITZ CORP., DEPT. H
2007 portland ave., LOUISVILLE 3, KY.
Please send free literature, specifications and prices on Stiglitz Infra-Aire Electric Ranges. I am a $\square$ builder $\square$ Building Supply Dealer $\square$ Distributor $\square$ Other
Name
Company
Street
City 8 Zone.

1

these days of competitive selling, builder profits often come from savings in labor. Here Ceco Steel Casings helped Builder Richard A. McClatchy in his Row House Project at Foleroft, Pennsylvania. Ceco Steel Casements were ordered with Inside Casings attached at the warehouse. Installation was simplified because the entire window unit was placed in the opening in one operation. That climinated finishing the inside of the opening, with resultant labor and material savings of $\$ 3.50$ per window, compared to older, time-consuming methods. Architect Erling Wenge said, "Ceco Casements are easy to open and close-and are giving fine performance." Ceco Casements offer these additional advantages: 1-Principal sections are $11 / 16^{\prime \prime}$ deep, heavier and stronger than other casements; 2-Two-point parallel contact lapping full $3 / 16^{\prime \prime}$ provides tight window with minimum air infiltration; 3-100\% ventilation available-vents can be arranged to bring in air from any direction. See Sweet's Files for details of Ceco Steel and Aluminum Windows. | ceco |
| :---: |
| sTEEi |

In construction products CECO ENGINEERING makes the big difference

## How cecostree casings save $\$ 3.50$

## PER WINDOW OPENING



CECO STEEL PRODUCTS CORPORATION
Offices, warehouses and fabricating plants in principal cities
General Offices: 5601 West 26th Street, Chicago 50, Illinois



Ideal for the game room, recreation room, den, study or modern living room. Panelgroove goes up quickly, takes and holds any surface finish, resists all kinds of bumps, scrapes and surface hazards. Use Panelgroove for interesting, serviceable walls in public rooms, too.

## When Individuality Counts Use NEW MASONITE PANELGROOVE

Different-distinctive-and desirable! Offers you a vertical accent for exteriors in homes of all types, for garages, shops, and many another structure. Creates a refreshing contrast to other design treatments. Makes good-looking gable ends-quickly-economically! Perfect for use between and around windows, on short runs, and in featured areas.
Masonite Panelgroove needs no joint treatment...edges are shiplapped to create a continuous pattern. Square-cut grooves are $3 / 8^{\prime \prime}$ wide and $4^{\prime \prime}$ on centers. Panels are $4^{\prime}$ wide, $5 / 16^{\prime \prime}$ thick and up to $16^{\prime}$ long.
When you build with Panelgroove you will profit from all the weatherdefying advantages of Masonite Tempered Presdwood ${ }^{\oplus}$-plus a continuous high-styled design with great popular appeal. Sold by lumber dealers. For complete information write Masonite Corporation, Dept.HH-6, Box 777, Chicago 90, Illinois.

Look For This Man


He Makes The Difference

## MASONITE PANELGROOVE

TEMPERED PRODUCT OF MASONITE® CORPORATION
Not immediately available west of the Rockies


Recently Mr. Wilson completed 18 homes equipped with complete heating and cooling plants in the exclusive Reddock Cove suburb of Memphis. Playing up the air conditioning feature heavily, he sold 15 of these homes -at $\$ 19,000$ to $\$ 19,900$-the first day he offered them. The other three were sold before heever got the advertising he had planned into print.


Frigidaire three-ton units serve Mr. Wilson's Reddock Cove homes, and operate so quietly they can be located in easy-to-get-at closets.

## WILL OFFER YEAR-ROUND AIR CONDITIONING IN LOWER-PRICED HOMES

"Careful study of the home-buying market has convinced me that central heating and air conditioning are no longer luxury items," states Mr. Wilson. "It's rapidly becoming a standard feature that potential buyers look for and are more than willing to pay for. That's why I'm putting the ductwork and piping needed for a year-round central plant into the new homes I'm working on nowhomes in the $\$ 12,600$ to $\$ 14,600$ range. I'll offer the combined heating and cooling system as an optional extra. Frankly, I don't expect many to pass it up."

## SELLING POINTS FAR OUTWEIGH COSTS

"Any sales resistance they start out with falls flat as soon as I describe the comfort of a cool, dry home in midsummer," continues Mr. Wilson. "Remember, these folks know what Memphis' heat and humidity can be like in July and August. Of course, I go out of my way to show housewives the filters that will free their homes of so much dust, soot and pollen. And these Frigidaire units change over from heating to cooling at the flip of a switch. That makes the whole thing seem so effortless that people are amazed at getting so much for so little money."

## equipment uses "freon"* safe refrigerants

Like most air conditioning units in service today, the equipment that cools Mr. Wilson's homes operates with Du Pont "Freon" fluorinated hydrocarbon refrigerants. Wise builders
specify "Freon" in the units they choose, relying on Du Pont's reputation for producing pure, noncorrosive refrigerants of the highest quality.

Of course, "Freon" refrigerants are safenonexplosive, nonflammable, virtually nontoxic. They meet building-code requirements everywhere. There are "Freon" refrigerants to serve every type and size of air conditioning equipment. Specify Du Pont "Freon" refrigerants in the equipment you select for every home you build.

LEARN HOW OTHERS use air conditioning to help sell homes. Read Du Pont's brochure "What Successful Builders Think of Home Air Conditioning." For your free copy write to E. I. du Pont de Nemours \& Co. (Inc.), "Kinetic" Chemicals Division 126, Wilmington 98, Delaware.


SAFEREFRIGERANTS *"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon refrigerants.


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1. Weldwood L-1R-an interior grade panel made with Weldwood's exclusive L-1R moldresistant adhesive; gives many of the advantages of exterior grade at interior grade price.
2. Weldwood Exterior Plywood - a true waterproof adhesive makes these panels the standard of the industry for many-time use.
3. Weldwood Plastic-Faced Fir-fir surface is protected by a sheet of plastic-impregnated paper, adding materially to performance in resisting moisture-caused delamination.

## SIDING

4. Weldwood Exterior Fir-with waterproof adhesive bond; may be applied vertically or horizontally with battens, v -grooves or flush joints.
5. Exterior Weldtex ${ }^{\oplus}$-the original striated paneling patented by Weldwood. Striations give interesting highlights and shadows, assure no grain raising or checking; panels can be stained or painted; no joint problems because nails are concealed in striations.
6. Weldrex Siding-same as above except cut into wide panels $48^{\prime \prime} \times 157^{\prime \prime}$; can be installed at great savings in labor cost compared to usual siding. Approved by FHA.
7. Weldwood Texture One-Eleven ${ }^{\text {® }}$ - exterior grade, rough, unsanded fir gives dramatic, textured look; can be installed without sheathing; fine also for gable ends and soffits.
8. Weldwood Duraply - plastic-faced fir is a low-cost, weather-resistant panel that gives maximum protection against grain raise or checking. Perfect also for signs and other utility applications.

## SHEATHING

9. Weldwood Plyscord-meets every requirement for economical wall and roof sheathing. Unsanded, low in cost but high in strength and rigidity; available with L-1R adhesive.

## SUBFLOORING

10. Weldwood Plybase-sanded one side;excellent for linoleum, tile, wall-to-wall carpeting. 11. Weldwood Plyscord - unsanded; especially good under solid wood flooring.

## INTERIOR WALLS, PARTITIONS

12. Weldwood Plypanel - provides solid, sturdy interior walls that can be painted, stained or enameled; first sealer coat of Firzite recommended to eliminate wild grain.
13. Weldwood Duraply-plastic facing on fir takes paint beautifully, gives extra-smooth surface. 14. Interior Weldrex - gives unusual wall treatments; can be finished natural, stained, painted or given two-tone effect; irregularly-cut grooves permit butt joints with nails concealed in grooves; available also in squares.
14. Sea-Swirl ${ }^{\infty}$ and Surfwood ${ }^{8}$-two panels with the weather-beaten beauty of sea-washed driftwood; fine for dens, playrooms; texture hides nails; available also in squares,

## CEILINGS

16. Weldwood Plyscord-unsanded; perfect for aftachment of acoustical tile or decorative ceiling material.
17. Weldwood Duraply-easy painting, plas-tic-faced fir gives beautiful smooth ceiling finish. 18. Weldwood Plypanel-goes up on ceiling joists quickly, easily; can be painted, stained or enameled.

STORAGE WALLS
19. Weldwood Plypanel - easy to cut, easy to work, easy to finish; use of plywood actually gives more interior cubage than use of solid lumber.

## BUILT-INS

20. Interior Weldtex-makes bookcases, cabinets look like expensive custom work yet costs so little that builders of lowest priced homes can use it.

## KITCHEN CABINETS, COUNTERS

21. Weldwood Duraply-takes paint so well that surface resembles painted glass.

22 \& 23. Weldwood Plypanel-inexpensive way to provide fine wood cabinets in low-cost homes; fine, sanded surface for plastic-laminated or linoleum-covered counter tops.

## OUTDOOR STORAGE

24. Weldwood Texture One-Eleven-adds expensive-looking touch to small terrace at low cost by furnishing storage space for lawn mower, garden tools.

## BREEZEWAYS, FENCES AND SOFFITS

25. Weldwood Texture One-Eleven-gives strength with minimum of framing; looks especially well when stained.
26. Exterior Weldtex - striations add 3 dimensional look; can be either stained or painted.

## GARAGE DOORS

27. Weldwood Duraply-tough, plastic-faced panel especially fine for overhead doors


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Details, please, on Custom TV Antenna Installations!

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## TECHNICAL PUBLICATIONS

218. Fireplaces. What You Should Know About Fireplaces. Superior Fireplace Co., Dept. HH, 1708 E. 15 th St., Los Angeles 21 , Calif. Single sheet, $81 / 2^{\prime \prime} \times 11^{\prime \prime}$

Construction errors that might cause an in adequate fireplace are the target of this factfull broadside. Optimum location, smoking problems, dimensions, all are taken up.
219. FENCES. Habitant Fences. Habitant Fence, Inc., Dept. HH, Bay City, Mich. 24 pp. $81 / 2^{\prime \prime}$ x 11". 25 s
"See what the boys in the back yard will have" is the invitation to this colorful book of factory-fabricated rustic fences. Photographs, specifications, and uses from a manufacturer who probably shudders at the song, "Don't fence me in."

220. WINDOWS. Selecting Windows. University of III. Small Homes Council, Dept. HH, Urbana, III. $6 \mathrm{pp} .81 / 2^{\prime \prime} \times 11^{\prime \prime}$. 10 \& ea.

What factors decide the choice of windows in a house? SHC says that both function and characteristics of the various types must be considered, and includes a chart rating each kind's suitability for various wall placements.

Double-hung, sliding, casement, awning, jalousie and hopper windows are illustrated, and good and bad points noted. Also included are examples of fixed and movable sash in combination units.
221. HEATING. Electric Heating for Homes Guide. Westinghouse Electric Corp., Dept. HH, 401 Llberty Ave., Pittsburgh 30, Pa. $32 \mathrm{pp} .81 / 2^{\prime \prime} \times 11^{\prime \prime} . \$ 2$, but free to those concerned with design or installation of electric heating systems

The basic fundamentals of electric heat, how to determine heating requirements and to estimate costs. Westinghouse wisely includes a chapter on the necessity for adequate wiring in this step-by-step "how to design for electric heat" booklet, as well as weather data for major cities in all 48 states.
222. VENTILATION. Exhaust Fans and Modern Ventilation. Emerson Electric Mfg. Co., Dept. HH, 8100 W. Florescent, St. Louis 21, Mo. 20 pp. and $8 \mathrm{pp} .81 / 2^{\prime \prime} \times 11^{\prime \prime}$

Everything for moving air but Indian punkahs is shown and described in the two Emerson brochures. Details, specifications dimensions and air-flow charts.
continued on p. 232

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For all types of windows and doors
By using National Weatherstripping on the homes you build, you can give your buyers extra value for their money. That's because National Products make any less expensive to maintain. Yet, the added buy appeal of Narional Weatherstripping costs only a few dollars per house-certainly a worth-while investment in added customer satisfaction, quicker sales, and greater profits.

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ready-mixed colors are shown in your Texolite Decorating Schemes. Many of these same colors are also available in other Texolite paints.

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Isn't this the real answer to your problem of paneled walls?
Marlite Planks and Blocks go up fast . . . give every interior a beautiful finishing touch . . . mean faster job completions. And Marlite's exclusive tongue and groove joint simplifies installation; conceals all fastening.
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Give your dry wall jobs that "luxury look." Plan on Marlite-readily available in new "Companion Colors" styled by Raymond Loewy Associates, plus distinctive wood patterns. See your building materials dealer, refer to Sweet's File, or write Marsh Wall Products, Inc., Dept. 622 Dover, Ohio.

## that's the beauty of Marlite

## PLASTIC-FINISHED WALL AND CEILING PANELING

Marlite Plank and Block Patent Applied For-Made With Genuine Masonite(1) Tempered Duolux(1)


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Here's a space-maker that's adaptable to any building plan. Wherever there's a need for closets, utility space, room division, Veni-Flex Folding Doors meet that need economically. Easy and quick to install, Veni-Flex saves not only on labor and hardware costs . . . it also eliminates expensive overdoor framing and the cost of studding, plastering and painting openings. Available in beautiful natural wood finish or in a choice of 11 decorator colors. For maximum sales appeal plus maximum economy, install Veni-Flex, the door of many uses.


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Exclusive Rol-Trak hardware assures fingertip control... years of trouble-free service ...smooth, dependable operation. A typical top-quality Veni-Flex feature.

Free Folder upon Request

TECHNICAL PUBLICATIONS
Continued from p. 226
223. HARDWARE. Grillcraft Barbecue Units. Grillcraft Co., Dept. HH, 477 E. 7th St., Saint Paul 1, Minn. $31 / 2^{\prime \prime} \times 8^{\prime \prime}$

Basic design for installing an outdoor cooking unit, plus details and dimensions of more elaborate fireplaces.

224. AIR CONDITIONING. Who's Zoo In Air Conditioning. Carrier Corp., Dept. HH, 300 S. Geddes St., Syracuse 1, N. Y. 24 pp. $8^{\prime \prime} \times 8^{\prime \prime}$

Cartoon animals humorously define the advantages and pleasures of air conditioning, which are then translated to human terms. Easy-to-take promotion.
225. HARDWARE. How To Fasten To Masonry. Diamond Expansion Bolt Co., Dept. HH, Garwood, N. J. 8 pp. $31 / 2^{\prime \prime} \times 6^{\prime \prime}$

Complete instructions and diagrams on the use of patented anchors and nails.

226. SLIDING DOORS. 1955 Catalogue. Arcadia Metal Products, Dept. HH, P. O. Box 657 , Arcadia, Calif. $12 \mathrm{pp} .81 / 2^{\prime \prime} \times 11^{\prime \prime}$

Steel-framed sliding doors by a pioneer in the field. Technical specifications and quar-ter-size details are included, and a data chart which lists glass sizes, rough openings and shipping weights of all sliding door frames.
227. AIR CONDITIONING. 50 Air Conditioned Homes You Can Afford. Airtemp Division, Chrysler Corp., Dept. HH, Dayton 1, Ohio. 48 pp. $81 / 2^{\prime \prime} \times 11^{\prime \prime} .25$ ea.

50 plans by Richard Pollman, with mechanical layouts for both heating and cooling with Chrysler equipment.
228. AIR CONDITIONING. Climatic Selection Guides. Airtemp Div., Chrysler Corp., Dept. HH, Dayton 1, Ohio. 6 pp. $31 / 2^{\prime \prime} \times 61 / 2^{\prime \prime}$

Intended for use in selecting room air conditioners for different climate zones and construction methods, these tables are made up for four different dry-bulb, wet-bulb design areas.
continued on p. 238


- Fits in standard $4^{\prime \prime}$ partition
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Mr . Builder: Here is wall paneling in solid Walnut, Cherry, or Butternut that will add distinction and charm to any room.
The cost compares favorably with paint and plaster. Installation is fast and easy. Boards are tongued and grooved, V-joint, sanded one face, $3 / 4$ " thick. Widths are $4^{\prime \prime}$ to $9^{\prime \prime}$; lengths $4^{\prime}$ to $16^{\prime}$. Paneling is very easily installed in a horizontal or vertical pattern. CHESTER B. STEM, INC. 549 Grant Line Road, New Albany, Ind

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229. AIR CONDITIONING. The Automatic Housekeeper. Trion, Inc., Dept. HH, 1000 Island Ave., McKees Rocks, Pa. 4 pp. $81 / 2^{\prime \prime} \times$ 11"

An illustrated explanation of Trion's electronic dust precipitation, what it does, how it works. Specifications.
230. HEATING. Radiant Panel Heating. Kritzer Radiant Coils, Inc., Dept. HH, 2901 Lawrence Ave., Chicago 25, III. $4 \mathrm{pp} .81 / 2^{\prime \prime} \times$ 11"

Finned tubes as a heat source, installed in walls and beneath joists, are the subject of this booklet. Perspective drawings illustrate various uses.
231. WINDOWS. Crestline Removable Windows. The silcrest Co., Dept. HH, Wausau, Wis. $4 \mathrm{pp} .81 / 2^{\prime \prime} \times 11^{\prime \prime}$

Double-hung windows that lift out for painting or cleaning. Details.
232. HARDWARE. Quality Builders Hardware. Quality Hardware Mfg. Co., Dept. HH, 762 E. Slauson, Los Angeles 11, Calif. 34 pp. $8_{1 / 2^{\prime \prime} \times 11^{\prime \prime}}$
Full selection of hardware items, including many of contemporary design. Illustrated and indexed for quick reference.

233. AIR CONDITIONING. Sun Control Products. Kawneer Co., Dept. HH, Niles, Mich. 8 pp. $81 / 2^{\prime \prime} \times 11^{\prime \prime}$
Keeping heat out of a house is better (and cheaper) than removing it later. Kawneer presents their full line of metal sum-control devices, including awnings, canopies, and louvers.

## PRODUCTS AND PUBLICATIONS COUPON

For more information on new products and publications in this June issue check key ummers below and man to: house ${ }_{8}$ home

9 Rockefeller Plaza, New York 20, N.Y.

## NEW <br> PRODUCTS

## TECHNICAL PUBLICATIONS

.
a. Armstrong cements

Tile-Tex Moinar planks
d. Hako Poly-krome til.
e. Matico Confetti tile
f. Kentile Corktone tile
g. Kentie Corktone tile
g. Higgins block flooring
h. Dodge vinyl cork tile
i. Vermont marble tile
i. Duraflex threshold
k. McKinney hinge

1. Snap.On trim
m. Zinktron paint
n. Panelfold doors
o. Luminous ceilings
p. Auer registers
q. Lima diffusers
$\begin{array}{lll}\text { r. } & \text { Eaco sliding doors } \\ \text { s. } & \text { 1.XI }\end{array}$
2. 1.XI kitchen cabinets
3. Styling leadership-Whatever the orientation on a lot, Modern Homes have the look of smartness and quality that only full-time architectural development can achieve. The low, long look, the low-pitched roof with its wide overhang are now Modern trade-marks.

How the best materials help bring you

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2. Exclusive features-Modern Homes' Research and Product Development Department has introduced entirely new sales-sparking features to residential buildingincluding the widely heralded poweroperated windows, acoustical ceilings, Klear-Span steel floor system.

3. Quality emphasis - Modern Homes are designed for quality builders .. fabricated with precision, of the finest materials. To help the builder follow through with this quality emphasis, Modern helps train erection crews, helps plan sites, helps achieve effective color styling.

4. Advertising appeals-In Living for Young Homemakers, Better Homes and Gardens, and Small Homes Guide, Modern Homes advertising is designed to add the powerful sales-extra of prestige-the reputation for excellence that influences discriminating buyers.

5. Open House promotionWith newspaper mats, radio and TV scripts, signs, photographs, displays, and quality literature, Modern Homes helps the franchised builderdealer make Modern's styling, features, and quality pay off in profitable volume sales.

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You realize, of course, that there are savings in volume purchase. You know that many savings are passed on to you. But these savings also permit us to use materials of only the highest quality. The
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"Storm-Sashes" the walls of 5room house for about $\$ 30$. (Aluminum Coated 2 sides)

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\title{
What you should know about Sound Conditioning your homes
}

\section*{New nationally advertised Cushiontone ceilings}
are low cost, easy to install, add sales appeal


QUICK, EASY TO INSTALL. All you do is nail \(l^{\prime \prime} \times 3^{\prime \prime}\) furring to joists, then nail Cushiontone to furring, and the ceiling is completed. No special skill or tools are needed. In one simple installation, Cushiontone gives you sound conditioning, beauty, and a finished ceiling.


FREE PROMOTIONAL MATERIAL FOR YOU. Cushiontone is rapidly becoming a nationally known brand name. So promote it with signs in front of your homes, in every sound-conditioned room, and in local advertising. For free material, see your Armstrong building supply dealer or write Armstrong Cork Company, 4206 Sixth Street, Lancaster, Pennsylvania.

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After slamming a Curtis New Londoner hollow-core flush door 642,934 times with their special slamming machine, the "torturers" got tired-but the door didn't! Banged 72 times per minute with a force of 192 foot-pounds per second-the equivalent of a lifetime of slamming - the New Londoner door failed to show the slightest injury.
What's the reason for this amazing stamina? It's the patented locked-in, all-wood gridlike core that keeps the Curtis New Londoner door hale and hearty through
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Curtis New Londoner doors and all Curtis Woodwork are sold by retail lumber and building-material dealers everywhere. For complete information, write Curtis Companies Service Bureau, Clinton, Iowa.

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Demand for its homes has made National Homes Corporation the largest producer in the United States.
*Since 1948 our production has increased better than 1300 per cent.

Today a house comes off National's production line every 11 minutes on the average -and the trend is up.

\section*{National Homes Widely Accepted...}
... by home buyers throughout the 41 states within our marketing area. Today more than 80,000 American families, living in 3,000 or more communities, own National homes.
. . by banks, insurance companies, savings and loan associations and other lending institutions. More than 600 of these institutionsamong them the largest in the country-have invested in mortgages on National homes across the land.
. . . by building authorities whose standards are highly respected by local code and planning agencies. These include the Building Officials Conference of America, Pacific Coast Building Officials Conference, Southern Building Code Congress, and the New York State Building Code Commission.
. . . by more and more home builders who recognize the significant trend toward building homes the better, modern, industrial way. Over 550 Builder-Dealers already are sharing the success that has resulted from National Homes' leadership in this field.

\section*{What National Homes Offers You}

As a National Homes Builder-Dealer you will have:
A trained organization to assist with land acquisition, site planning, and your entire building program.
A house package that represents two-thirds of the building job. This is delivered to the site on schedule for the most economical use of local labor. There is no need for warehousing or inventory.
A faster completion time that means a more rapid turnover of capital and a higher dollar volume of profit.
Financing by the National Homes Acceptance Corporation of VA or FHA-approved mortgages.
A coordinated program of advertising and sales promotion of our brand-name product on national and local levels.

\section*{What Can You Offer National Homes?}

As a National Homes Builder-Dealer you must have the vision and ability to develop the land on which you build.

You must have sufficient capital to finance the kind of a project you have planned.

You must have the ability to manage these finances and the building operation throughout your program.

Above all, you must have integrity and good standing in your community.

If you feel you have these qualifications and want to grasp this opportunity to make your own success bigger by sharing in the most successful home building operation in the country today, please write to me personally. Nothing is more important to me than the development of our Builder-Dealer organization. James R. Price, President, National Homes Corporation, Lafayette, Indiana.

\section*{Why NATIONAL HOMES Outsell ALL Others}
- Every National home is archi-tect-designed by Charles M. Goodman, AIA, and color-styled by Beatrice West, both foremost authorities in their fields.
- There are 38 basic floor plans -with two to five bedroomsand more than 200 exterior variations to suit every need and desire.
- Prices range from \(\$ 6,000\) to \(\$ 40,000\). Variations in price are due to size, extra features desired by the buyer, and location of the home.
- National homes are produced better, faster, and more econom-ically-which means a lower selling price-by the assembly-line methods of modern U. S. manufacturing.
- They are built of quality materials. No. 1 kiln-dried lumber, for example, is used for all structural framing in National homes.
- Mass purchasing of brandname materials results in important savings that can be passed on to the home buyer in the price and in important advantages which he gets in the quality of his home.
- The quality of National homes is standardized-every home is engineered and manufactured in accordance with exacting factory standards.```


[^0]:    WRITE FOR the new Wedge-Lock Clay Pipe Bulletin, a four-page file-sized brochure with complete, advance information on this new product. Address: The Robinson Clay Product Company, 65 W. State St., Akron 9, Ohio.

[^1]:    Kaiser Aluminum helps build demand for aluminum building products like these through consistent, colorful advertising in national magazines like Saturday Evening Post and Time.

[^2]:    NORGE SALES CORPORATION, SUBSIDIARY OF BORG-WARNER CORPORATION,

[^3]:    + Probable prices throughout Florida. i+ Without closing costs in cash. ** Par transactions for immediate delivery. D. Yates, vice pres., Stockton, Whatley Davin \& Co.; New York, John Halperin, pres., J. Halperin \& Co.; Philadelphia W. A. Clarke, pres., W. A. Clarke Mortgage Co.; San Francisco, Raymond H. Lapin, Bankers Mortgage Co.; Washington, George W. De Franceaux, pres., Frederick W. Berens, Inc.; Portland, Ore., Franklin W. White, pres., Securities, Inc.

[^4]:    Contemporary design made such advances on the home-buying front in Indianapolis last year that it won a place of honor at the home show there in April.
    Not only was this year's modern first-prize winner scheduled to be built at the 1956 show: in addition, last year's modern first-prize winner, refused at the time by the builder segment of the home show organization as "too modern, too advanced," was used as the central attraction of this year's show.

    This year's winning architect: Earl R. Dunlop of Boston, for a two-bedroom home (above, left) which the judges selected for its "intelligent use of the site, its open planning and its judicious segregation of uses. . . ."

[^5]:    HEATING SYSTEM (LEFT) AND PROMOTERS VAN FLEET, HAVERSTICK AND ZECKENDORF

[^6]:    Ralph M. Peters Peoria, Ill.

[^7]:    STYLON CORPORATION Milford, Mass. * Florence, Ala.

[^8]:    Company

[^9]:    * Note: each subscriber's copy, it is estimated, will be read by five or six people.

[^10]:    Nonfarm housing starts soared to 127,000 dwelling units in April, in the usual spring fashion. March starts were 117,000 . The adjusted annual rate of homebuilding based on April private starts, however,

[^11]:    OTHER NEWS on pp. 39, 40, 41, $43,45,47,49,51,54,59,62$, 67, 70, 74. Index on p. 39

[^12]:    MASTIC TILE CORPORATION OF AMERICA Joliet, III. - Long Beach, Calif. Newburgh, N. Y. Manufacturers of: Aristoflex - Confetti - Parquetry - Asphalt Tile - Cork Tile - Plastic Wall Tile

[^13]:    Curvatop is registered and sold in Canada by
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