new products
new tools
new methods
to build better for less
Style Supremacy ...@ $4.50 sq.yd.

Congoleum-Nairn has startled the building world with its brilliant design leadership. Now we present “Tangier,” vinyl-plus linoleum — style and budget news. Here is today’s most popular floor fashion by the yard — 3-DIMENSIONAL inlaid mosaics — at 25% to 40% less cost! Write for a free sample of “Tangier” today. Address Home Builder Service Department, Congoleum-Nairn Inc., 195 Belgrove Drive, Kearny, New Jersey.
SWEEPING THE NATION!

Only 3 months ago NuTone introduced its sensational new line of built-in Intercom-Radios and already they're piling up tremendous Builder, Contractor and Architect acceptance coast-to-coast.

It's because these new NuTone systems are so revolutionary... in design... performance... and especially, COST! They can't be matched anywhere, in their price range.

They're Custom-engineered... in your choice of four AM/FM and AM sets... and three sizes of Remote Speakers.

More prospects become buyers, when you offer them time and step-saving Intercom PLUS the luxury of music throughout the home. Call your NuTone supplier for a demonstration... NOW!
A Speaker for Any Room only $7.50

NOW! . . . Without costly monthly rentals — year in and year out. With a NuTone Built-In Intercom-Radio System you can add Music — PLUS the convenience of Intercom . . . to any room for only $7.50 for each Speaker!
You get more roofing profits with every swing of a Bostitch H4 Stapling Hammer

Why? Because applying asphalt shingles with the Bostitch H4 Stapling Hammer is as much as four times faster than with hammer and nails, giving you time to do more jobs.

It takes only six swings to fasten each strip of shingles with %" galvanized staples. Roofing is faster with the H4 and staple legs spread inside roof deck for maximum holding power. Staging time is cut, too.

More and more builders are saving time and money and earning better profits with Bostitch. See your building supply dealer for a demonstration.

Other Bostitch products help you speed work, increase profit

THE BOSTITCH H5
STAPLING HAMMER
is best for fast, light tacking jobs. It’s the almost “no-fatigue” way to install builder’s paper, foil-type insulation and vapor barriers.

THE BOSTITCH H2B
STAPLING HAMMER
is designed to cut costs on medium tacking or nailing jobs such as insulation, building paper, under-course shakes. Fast one-hand operation—other is free to position work. Pay for itself on a few jobs.

THE BOSTITCH T-5 TACKER
—the standard by which all spring tackers are compared. Operates with easy squeeze of hand. Small nose permits staple location as close as one-sixteenth inch to inside of rabbet. Cuts time on every job. Also made with heavy spring for hard-to-penetrate materials.

Profits are better and faster with

530 BRIGGS DRIVE, EAST GREENWICH, RHODE ISLAND
National-U.S. introduces new and improved baseboard heating 8 ways better! (…and it’s a snap to install!)

NEW FLOATING SUPPORTS free heating element of all hanger and panel contact for truly quiet operation.

NEW SNAP-IN BRACKETS need no screws or fasteners to stay in place.

NEW SNAP-ON END COVERS with rounded edges match panel contour perfectly. Snap-in door provides handy access to valves. They’re easy to install – fit tight.

NEW PRE-PAINTED PANELS do away with need for painting. If custom painting is required, white semi-gloss acts as a prime coat.

NEW BOX FINS give more strength to heating elements… make installation easier, more convenient.

NEW MODULATING DAMPER can be supplied with each panel length to provide separate temperature control for each room.

NEW PRE-CUT PACKAGING lets you select 3, 4, 5 and 6-foot lengths in any combination to eliminate cutting and fitting on the job.

NEW ADJUSTABLE EXTENSIONS let you easily combine unused standard-length panels to cover any wall-to-wall distance.

Get all the details on National-U.S. baseboard panels and new, compact hydronic heating units for oil or gas fuel. See your contractor or National-U.S. representative or write National-U.S. at Crane Co., Box 780, Johnstown, Penna.
Make the heart of your home a selling center!

Continental by Westinghouse steals hearts... gives any kitchen the luxury look that sells homes. But it's more than a status symbol and more than a range. It's a compact food preparation center with all the automatic conveniences dear to the hearts of women. Just behind the retractable platform is the exclusive Pantry Shelf, a real convenience. The Magic Mirror Oven Door both reveals and conceals. Light on... you see in. Light off... neat as a pin. Everything comes out for easy cleaning. And for builders it has practical advantages... It offers the beautiful built-in look in a free standing range... mounts quickly and easily on a base cabinet. Special Westinghouse cabinets in Heirloom Maple and steel are available. Fits under standard 24" wall cabinets in kitchens with a seven-foot soffit. No complicated wiring either... just a single connection. Available in de luxe and standard 30" models. See them yourself and remember... You can be sure... if it's Westinghouse.

Continental by Westinghouse

Westinghouse appliances and Kitchen Cabinets, plus Heating & Air Conditioning, Wiring Devices, Micarta® Counter Top», Apartment Elevators, are all available through one point of contact. See your Westinghouse residential sales manager or write Westinghouse Electric Corporation, Contract Sales Dept., Mansfield, Ohio.
Natural Wood Kitchens

Long-Bell’s "Contractor Line" Natural Wood Birch Kitchens provide builders with an opportunity to add new feminine eye appeal to kitchen decor. These handsome, quality-built Birch veneer cabinets are specifically designed for new construction and renovation jobs where price is an important factor. They’re engineered in 3" modules for fast, simple installation to save on-the-job man hours, smoothly sanded to save final finishing time.

Long-Bell "Contractor Line" Birch Kitchens are the practical solution for cutting new home construction cost without loss of quality or sales appeal. They have the luxury look, the quality feeling, the wanted features that sell on sight. Plan now to include these attractive cabinets in your new building program.

All Long-Bell "Contractor Line" Birch Cabinets, including the corner lazy susan, wall, base, sink, range, oven and utility cabinets are available from stocks at three conveniently located Long-Bell warehouses. Fastest delivery is assured.

For complete information and prices on low-cost Long-Bell "Contractor Line" and Long-Bell Deluxe Natural Wood Kitchens, ask your dealer or write, wire or call your Long-Bell representative.

INTERNATIONAL PAPER
Long-Bell Division

A Quality Name in Forest Products

Kansas City, Missouri • Longview, Washington • Primos, Pennsylvania
Who changed the picture on winter building? **KINGSBERRY!**

And hundreds of Kingsberry Builders are proving it now!

Time was when home builders hibernated in winter like bears, waited till spring thaw to get going again. Most still do—passing up 3 months of profit. But how times have changed for Kingsberry builders!

Right now they are confidently erecting model homes for **winter** sale, in the biggest full home sales spectacular ever launched, breaking November 25 in the Saturday Evening Post. Many of these are still closing sales from Kingsberry's May Sales Promotion!

1. First of all, with Kingsberry, they can erect a weather-tight house in a day with a 7-man crew, finish it within 2 to 3 weeks. They can build, promote and sell through winter. But far more than this is behind their success.

2. They cut on-site labor costs up to 62%—cycle capital at less market risk—sell **ahead** of construction.

3. They can get no-red-tape construction financing direct from Kingsberry.

4. They enjoy color-spread advertising in the Saturday Evening Post . . . and the industry's most liberal co-op advertising plan, including up to $3,000 advance funds for

5. And now they have another power plus—a complete model-home furniture package from decorator furniture to bric-a-brac and books, at an amazing price and 36-month terms. And in addition, a Carport Display to make winter selling easy and comfortable; that, too, at a new low price.

6. In fact, Kingsberry has every answer—and the proof—that you can keep operating profitably, keep your crews together, and be a jump ahead of your spring competition. Why not write today: Jerry Nowak, General Sales Manager, Kingsberry Homes, Fort Payne, Alabama.

At the present time Kingsberry serves builders only in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee.

See this Kingsberry ad on the "Happiest Housewarming Party of the Year," appearing full color, Saturday Evening Post, Nov. 25.
SUPERB NEW STYLING WITH CLASSIC QUALITY

THERMADOR

BILT-IN ELECTRIC OVENS

For pleasurable cooking and proud entertaining—choose a Thermador Bilt-in electric oven, in easy-to-clean modern design. Thermador has so much so new!—easy-to-use automatic oven-timer, Temp-Matic meat thermometer, self-starting 3-spat rotisserie for rotatory-broiling (a Thermador exclusive), re-designed oven interior with all racks and supports removable—added to Thermador's tradition-of-quality features. Single, Bi-level and Side-by-Side combination models for flameless electric cooking. In Canyon Copper, Desert Pink, Turquoise, Daffodil Yellow, Sugar White or lustrous Lifetime Stainless Steel. Color-matching exhaust hoods and 17 models of Bilt-in electric cooking-tops, too. See your Thermador dealer, or write for full-color catalog.

Originator of the Bilt-in Range

THERMADOR Electrical Mfg. Co. Dept. HH
Division of Norris-Thermador Corp.
5119 District Blvd., Los Angeles 22, Calif.

Please send free illustrated literature about Thermador Bilt-in Electric Ranges.

Name:
Address:
Cty: State:

Popular new Lectro-Host, free-standing or Bilt-in, has double ovens above!
GANG-NAIL®

does it better!

GANG-NAIL®
does it cheaper!

GANG-NAIL®
does it stronger!

GANG-NAIL®
does it faster!

GANG-NAIL®
does jobs others CAN'T!

Mr. Builder:

Save up to $200 per house! (Often much more!) Save lots of costly man-hours. Save on waste, too. Every Gang-Nail truss fits truer and tighter. They're precision-built with a precision connector plate, for easier and faster installation.

And your local Gang-Nail Fabricator gives you faster service at lower cost! He has the finest automated equipment. Plus the largest assortment of roof and floor trusses, interior and exterior wall panels of any local component fabricator, VA and FHA approved.

FOR RELIABLE COMPONENT INFORMATION - WRITE OR WIRE US TODAY FOR THE NAME OF YOUR NEAREST GANG-NAIL FABRICATOR

Automated Building Components, Inc.

(formerly Gang-Nail Sales Co., Inc.)

7525 N.W. 37th Ave. Miami, Florida

OCTOBER 1961
If you are a promotional-minded builder, this could be the most important ad you've ever read...it's written by one of the nation's largest home builders

"Lennox changed my mind about manufacturers' merchandising programs...this one really helps to sell homes"

(Here, in the builder's own words, taken from an actual tape recording, are some of the reasons Mr. Albert Mars of Alvin Homes, Cleveland, Ohio, is sold on the new Lennox Merchandising Programs. Alvin Homes has been in business here for 10 years—with a home building volume in excess of 2,000 homes this year.)

Albert Mars, Alvin Homes, Cleveland, Ohio:
"Never in my life (even after 10 years in the appliance industry) have I ever seen a manufacturer with so much promotional material...so many tools that builders can use for selling their homes. Lennox is interested in selling the builder's homes, which automatically sells the Lennox furnace. They have brochures like I've never seen...I mean, that are fabulous. They are the type of people we have to do business with. To top this whole thing off, Lennox has John Cameron Swayze to help builders. Lennox is the only manufacturer that is promotional-minded enough and has the merchandising programs for any builder anywhere. If more manufacturers would use this type of thinking, builders would not be faced with an inventory of unsold homes."

For more information about the Lennox Merchandising Programs, check with your Lennox representative or write Lennox Industries Inc., 325 South 12th Avenue, Marshalltown, Iowa.

John Cameron Swayze, ABC Radio Personality:
"You, too, can use the new builder merchandising program provided by Lennox. It's an exclusive Lennox program that will help you sell your homes. I'm proud to play a part in this program. You will see me in the colorful tract brochures, preprinted flyers, billboards and newspaper ads. There are even cut-outs for use in your model homes to point out your best sales features. In many instances, I have prepared special personalized radio spots announcing a builder's open house. I also broadcast coast-to-coast each weekday evening on the Lennox Weather News (ABC radio network).

"The folks at Lennox have spent thousands of dollars to determine what you, the builder, need to help sell your homes, and to prepare this program. Too generous an attitude? Not at all. It's completely realistic. For when you sell a home, Lennox has also made a sale. The folks at Lennox know that the way to sell their product is to sell your homes!"

Don't be satisfied with less than

LENNOX
HEATS, COOLS, TREATS AND MOVES AIR

LENNOX Industries Inc., est. 1895—Marshalltown, Iowa; Columbus, O.; Syracuse, N.Y.; Decatur, Ga.; Ft. Worth, Tex.; Salt Lake City, Utah; Los Angeles, Calif. LENNOX Industries (Canada) Ltd.—Toronto, Montreal, Calgary, Vancouver, Winnipeg
Georgia-Pacific has a wide variety of materials that speed work time... cut your costs... create satisfied customers that promote your business. Consider what G-P provides...
OFFERS THE COMPLETE REMODELING PACKAGE...
MATERIALS THAT SHRINK WORK... STRETCH PROFIT

1. FACTORY-FINISHED PANELINGS
You install these 4' x 8' panels quickly, easily by nailing or gluing. No messy on-the-job finishing necessary. Customers can choose from a wide variety of beautiful patterns... imported panelings in rare woods and unusual faces... textured panelings in domestic woods... and the famous "Family-Proof" finished hardwoods that resist the roughest wear. There's a price to suit every budget, a pattern to suit every taste. Special sizes may be ordered.

2. SPECIALTY HARDBOARDs
Easily-installed perforated panels with the wainscot right on them are available in the new Garage Liner, ideal for storage walls in any part of the home. Regular perforated panels are also popular for the same purpose. G-P Hardboards are made in a wide choice of surfaces and finishes for cabinets, walls, partitions and underlayment. Attractive factory-finished hardboard panels are available to install without further finishing.

3. SIDINGS
You can order ready-to-install sidings from a wide variety of species and patterns. Consider the new extra-wide reversible redwood Hacienda siding—end and edge glued to form a striking design—smooth on one side, textured on the other. There's also factory-sealed redwood bevel siding that dramatically cuts on-the-job-costs. GPX® overlaid plywood sidings require 30% less paint, defy wear and, like all G-P materials, are easily workable to any design requirement. Texture 1-11 and V-grooved patterns are offered in both overlaid and standard plywood. G-P Ranch Panel in economical exterior-grade plywood is pre-painted in Rural Red, will soon be available in other colors. GPX overlaid plywood sidings, including Texture 1-11 and V-grooved patterns, are available factory-primed.

4. 2.4.1 FLOORING
New 2.4.1 Flooring serves as both subfloor and underlayment. Simplest, most efficient flooring you can use... 1½". 4' x 8' T&G panels can be used over framing 48" o.c., dramatically cutting installation time and costs. Both T&G and conventional edge available. 2.4.1 is an excellent base for Flexible Oak Flooring, new ½" x 9" x 9" floor tiles of high-grade oak, prefinished with a tough catalyzed resin. Special processing provides flexibility to follow normal subfloor contours and dimensional stability. Easy to install.

5. SHEATHING & PLYWOODS
Highest quality fir plywood sheathing is offered for all sheathing, subflooring and roof deck applications, in all standard sizes and 5 thicknesses, bundled for easy handling. G-P Douglas Fir Plywood is available in a wide range of grades and sizes, overlaid and standard... plywood with the vital quality "plus":

JOIN G-P IN A *BOOMING MARKET
Georgia-Pacific encourages the growing demand for adding or remodeling entire rooms with national advertising that tells your customers the advantages of G-P materials. G-P provides leads for you with the new EXPAND-A-HOME remodeling sales promotion at your building materials dealer's.

The annual home improvement market has increased almost 100% in the past 3 years, according to U. S. Government estimates. In 1960, Americans spent $15½ billion on the home improvement market, as compared to about $16 billion in new home construction.
GET YOUR FREE IDEA FOLDERS THAT CREATE CUSTOMERS

Send the coupon for your Free supply of colorful remodeling idea folders. Here are new ideas in detail...to get your prospects thinking about the most popular remodeling areas: Kitchen, Recreation Room and Family Room. Each folder shows how easily you can improve the customer's home. Space for your firm's name to be imprinted.

PLUS:

Handy cost chart in each folder, giving approximate costs of materials for various types of remodeling jobs...a good guide for your customer.

Georgia-Pacific is a member of the Douglas Fir Plywood Association, sponsor of "DAVID BRINKLEY'S JOURNAL" Wednesday evenings, NBC-TV

COUPON

Georgia-Pacific, Dept. HH-1061, Equitable Bldg., Portland, Oregon. Please send me my free supply (20 each) of G-P remodeling idea folders.

Name
Address
City_________ County_________ State_________
A modern plumbing system, fabricated from Streamline copper tube and fittings, is the mark of quality in any home. Such a system costs no more than one made of rustable materials yet has many outstanding advantages. Plumbing contractors like copper's ease of handling and installing. Builders like the space-saving feature of copper drainage (standard 3" stack fits within a 2" x 4" partition . . . "furring out" is eliminated). Everyone likes the durability of Streamline supply and drainage systems. Copper quality costs no more, so why not specify and install Streamline tube and fittings?

Just Released!
New, Complete 66 page Streamline Plumbing and Heating Products Catalog S-361
. . . Write today for your copy.
**WHAT ARE YOUR IN-PLACE**

**COMPARE THEM**

**WITH THE**

**NATIONAL AVERAGE**

*Figures are derived from Means Building Construction Cost Data, 1961. They do not include delivery, overhead, contingencies or profit. Wage rates are figured at $2.75 for a construction laborer and $3.85 for a carpenter.*

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost/Sq Ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot; x 4&quot; Studding</td>
<td></td>
</tr>
<tr>
<td>16&quot; Centers</td>
<td></td>
</tr>
<tr>
<td>Double Top Plate</td>
<td>16</td>
</tr>
<tr>
<td>Single Bottom Plate</td>
<td>.18</td>
</tr>
<tr>
<td>3/8&quot; Gypsum Board</td>
<td>.10</td>
</tr>
<tr>
<td>2&quot; Blanket Insulation, Foil-Clad</td>
<td>.15</td>
</tr>
<tr>
<td>Aluminum Siding</td>
<td>.54</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>.97</strong></td>
</tr>
</tbody>
</table>

Get to know Alcoa® Aluminum Siding better. It's just about the best you can buy.
INSULATION—15¢ + ALCOA SIDING—54¢—TOTAL COST 97¢ PER SQ FT

WALL COSTS?

Alcoa Siding has many other virtues. It comes in a wide range of lasting colors, already applied. Its resistance to heat flow is high, so you may want to consider a smaller heating system. In many climates, you can forget conventional sheathing and nail insulated Alcoa Siding directly to the studs.

Write to Alcoa Building Products, Inc., 1857-K Grant Building, Pittsburgh 19, Pa., for more complete information on in-place wall costs and insulation values with Alcoa Siding.

WALL MAKING
MADE BY ALCOA

Entertainment at Its Best . . . ALCOA PREMIERE with Fred Astaire as Host . . . Tuesday Evenings, ABC-TV

OCTOBER 1961
NEW
Electric Heat
FOR BATHROOMS

Hunter Bathroom Convection Baseboard

Popular, modern baseboard electric heating is now available in an attractive unit specially designed for bathroom installation.

Hunter Bathroom Convection Baseboard combines the safety, cleanliness and comfort of electric heat with functional styling. Polished chrome face-plate and white casing blend with modern bathroom fixtures. A natural for all-electric homes, or as a supplemental bathroom heater, the Hunter Bathroom Convection Baseboard installs easily against wall at floor level. A built-in thermostat, end-mounted for convenience, automatically regulates comfort level. Advanced engineering permits greater metal-to-air ratios that provide faster heat transfer at low operating temperatures. Automatic thermal cut-out insures complete safety.

Unit is 34 1/4 inches long and 6 3/4 inches high. Similar portable models are also available.

Hunter also makes a complete line of electric heating, ventilating and cooling equipment.

MAIL FOR COMPLETE DATA
Hunter Division—Robbins & Myers, Inc.
2410 Frisco Ave., Memphis 14, Tenn.

Please send data on new Hunter Electric Heat bathroom units to:

Name

Company

Address

Hunter TRIO Ceiling Unit

• HEATS
• LIGHTS
• VENTILATES

Low-cost installation covers three requirements for modern bathrooms. Mounted flush in ceiling, the TRIO delivers instant warmth from nichrome heating elements, or electrically reverses its axial flow exhaust fan to ventilate room. Provides overhead illumination from two 60-watt lamps (not included). Also available: Hunter DUO Heater/Ventilator and Hunter Ceiling Heater.
WHY... Remodel with Copper tube???

BECAUSE it can be quickly installed between original floor joists

BECAUSE risers can be installed in original stud spaces

BECAUSE its light weight makes overhead work easier and faster

BECAUSE it can be fitted through small holes in old joists

BECAUSE long lengths can be used with fewer joint connections

BECAUSE only small areas of flooring need be removed to install it

Anaconda Copper Tube is available in all standard wall thicknesses—Types K, L, M and DWV—through your plumbing wholesaler. See him also for Anaconda wrought and cast solder-joint fittings. For complete information, write Anaconda American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.
WEST COAST LUMBER

WEST COAST DOUGLAS FIR
WEST COAST HEMLOCK
WESTERN RED CEDAR
SITKA SPRUCE
WHITE FIR
"We're in our second generation of profitable experience with **UTILITY GRADE WEST COAST LUMBER**" 

Say E. L. Mallory and Thomas E. Mallory  
Portland, Oregon builders

"I started building 20 years ago with No. 3, now called Utility grade West Coast Lumber. I have now turned the buying over to my son, Tom, and it didn't take him very long to learn that Utility grade dimension lumber saves us at least $250.00 on each house. We build in the $10,000 to $30,000 price range and have built homes from California to Alaska. Utility grade helps maintain our reputation for quality and permits us to price our homes competitively," the senior Mallory concludes.

Utility grade is used for all types of framing—joists, studs, plates, rafters and bracing*. Decking of this grade is also a money-maker when used for sub flooring on beams or for roofs*. Ask your retail lumber dealer about Utility grade West Coast Lumber... he's your local source of supply.

* When used in accordance with FHA Minimum Property Standards for One and Two Living Units, FHA Bulletin No. 300.

FREE TECHNICAL FACTS about Utility Grade. Contains span tables.  
Write for your FREE copy today...Room 104  

**WEST COAST LUMBERMEN'S ASSOCIATION**  
1410 S. W. Morrison Street  •  Portland 5, Oregon
Lockwood Hardware's radically different lockset now simplifies and speeds the tricky job of installation on household doors. Works like this: the chassis units, molded of tough Du Pont ZYTEL nylon resins, slide smoothly together — round post into round sleeve, square post into square sleeve—and the self-aligning latch case swivels to the right or left of the central lock assembly to compensate for bevel-edged doors or for improper boring.

Remarkably simple to install, the lockset parts of low-friction ZYTEL provide a lifetime of smooth, quiet operation without lubrication. There's no rust...no corrosion...and the bolts have been tested up to 1,500,000 cycles before showing any perceptible wear.

The Lockwood Hardware Manufacturing Company, of Fitchburg, Massachusetts, offers these locksets in two basic types—a latching unit and a unit with a convenient push-button locking feature. Latch bolts are molded in metallic colors to complement the lockset trim.

As a builder of reputation, you will benefit by looking for the better-made labor-saving building hardware made with ZYTEL. Lockwood and other manufacturers of all types of quality hardware will be glad to answer your questions.

POLYCHEMICALS DEPARTMENT

E. I. du Pont de Nemours & Co. (Inc.), Dept. HH-10, Room 2507Z, Nemours Building, Wilmington 98, Delaware

□ Please send me more information on ZYTEL.
□ Please send me more information on Lockwood Lockset.

Name__________________________

Company______________________ Position_____________________

Street__________________________

City___________________________ Zone________ State___________

In Canada: Du Pont of Canada Limited, P.O. Box 660, Montreal, Que.
now...**PALCO-LOC**...tailor-made lumber in custom lengths to fit builder requirements, exactly.

Our finest Architectural Quality, certified kiln-dried redwood — finger-jointed and electronically glued to produce permanently strong, long pieces — for exterior or interior use. All specified, or any combination of lengths, at no extra cost!

Available in boards or worked patterns...also factory paint-primed if desired. Buy PALCO — standard of comparison since 1869.

THE PACIFIC LUMBER COMPANY

100 Bush Street, San Francisco 4, California
35 East Wacker Drive, Chicago 1, Illinois
2185 Huntington Drive, San Marino 9, California
EXCLUSIVE ONE-PIECE CAB-BODY DESIGN

EXCLUSIVE ONE-PIECE CAB-BODY DESIGN gives Ford Styleside Pickups extra capacity and extra strength. Heavy duty in every way for heavy going all day! And there's carlike riding comfort thanks to Ford's long wheelbase and exclusive Driverized Cab!

THEY'RE HERE!

NEW '62 FORD TRUCKS

Get full-time economy that only starts with Ford's low price!

Meet the trucks that make saving money a full-time business—new Ford Trucks for '62!

In a selection of over 600 models there's a truck that's right for your job, whatever your job . . . trucks that you can buy and operate at lower cost . . . trucks that can save you money mile after mile, load after load, year after year!

They save on price. They save on gas and oil. They save on tires and on maintenance—wherever there's a way to save! The full record of Ford economy, covering three years of independent tests, is detailed in Ford's Certified Economy Reports. See your Ford Dealer now. Check out the facts, work out a deal, and drive out a truck that saves money . . . full time!

FORD TRUCKS COST LESS

SAVE NOW ... SAVE FROM NOW ON!

ECONOMICAL HEAVY DUTY V-8's

ECONOMICAL HEAVY DUTY V-8's with 292-, 302- and 332-cu. in. displacement give you tailored-to-the-job economy at much lower prices than you would expect in trucks with engines of this size. Stress-relieved cylinder heads, aluminum alloy pistons and sodium-cooled exhaust valves are but a few of the heavy-duty features you get with these engines.
ECONOLINE — ALL-ROUND ECONOMY LEADER —
and low price is only the start! Certified tests show this pickup may save $100 on gas, oil, tires and license over your present conventional pickup every 16,000 miles you drive.

AMERICA'S MOST POPULAR VAN — and small wonder! Econoline savings start with a price far under any popular ½-ton conventional panel on the market! And they continue saving every day—certified tests have shown that in 16,000 miles, savings in operating costs compared to the conventional panel you may now own could top $100! Big 4-ft. doors rear and curbside plus 204 cu. ft. of loadspace, and a floor that's flat the full length, mean easy cargo handling.

PROVEN 262-CU. IN. BIG SIX FOR FORD MEDIUMS includes more heavy-duty engine features than any other Six of its size. Never before such long-term durability, reliability, and economy at so low a price.
The most modern advancement in bathrooms since plumbing!

Puritron — electronic miracle keeps bathrooms completely free of odors.
Makes any house easier to sell... any apartment easier to rent.
Needs no outside vents or exhaust fans.

Simply recess into wall for direct wiring. Switch on. Ventilates each bathroom completely for less than $25.

For full information, write Puritron Corporation, 15 Stiles Street, New Haven, Conn.

PURITRON — THE ELECTRONIC MIRACLE
That's the difference between one sheathing material and another. Insulation board is the one that insulates. In fact, insulation board sheathing meets F.H.A. minimum requirements without supplementary wall insulation.

Now the Insulation Board Institute has established a precise rating system (see chart). Soon these ratings will be stamped on every sheet manufactured by our fourteen member firms. Watch for the “IBI Rated” seal.

Got time for three fast facts? (1) Insulation board sheathing is strong—up to five times as strong as horizontal lumber sheathing! (2) Insulation board requires 50% less labor than lumber sheathing—and involves at least 10% less waste. (3) Insulation board weighs less than half as much as gypsum sheathing.

---

HEAT RESISTANCE RATINGS (R)

<table>
<thead>
<tr>
<th>Material</th>
<th>R Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBI RATED INSULATION BOARD SHEATHING (25/32 IN.)</td>
<td>R 2.06</td>
</tr>
<tr>
<td>IBI RATED INSULATION BOARD SHEATHING (1/2 IN.)</td>
<td>R 1.32</td>
</tr>
<tr>
<td>LUMBER (NOM. 1 IN.)</td>
<td>R 0.98</td>
</tr>
<tr>
<td>GYPSUM (1/2 IN.)</td>
<td>R 0.45</td>
</tr>
<tr>
<td>PLYWOOD (5/16 IN.)</td>
<td>R 0.39</td>
</tr>
</tbody>
</table>

Write for the new booklet, “How to Save with Sheathing.”

IBI INSULATION BOARD INSTITUTE
111 West Washington St., Chicago 2, Illinois
GET ON THE BAND WAGON

Get on the fastest-rolling band wagon in homebuilding—central air-conditioning. Why? To sell more houses. Proof?

• Number of centrally air-conditioned homes in the U.S. in 1957: 500,000. In 1960: More than a million. Number of homes centrally air-conditioned in 1961 alone: 250,000.

• In 1960, housing starts fell off 19%; central air-conditioner shipments rose 12%. In first six months of 1961, housing starts fell 2% from 1960; during same period, central air-conditioner shipments rose another 8%.

Sell central air-conditioning and sell more houses. When you do, protect yourself from the "operators" who are out to make a buck without regard to the performance of the installations they sell. How?

Specify only equipment certified under the A.R.I. Program. Backed by the combined reputations of the 59 manufacturers listed on this page, the ARI Seal of Certification assures you and your home buyers of equipment rated to uniform high standards of safety and performance.

To get what you buy—and to deliver what your customer needs—specify ARI Certification. For free explanatory booklet and a directory of certified equipment, write Dept. R-1012.

AIR-CONDITIONING AND REFRIGERATION INSTITUTE
1346 Connecticut Avenue, N.W., Washington, D. C.

Manufacturers participating in this program as of September 1, 1961:
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• Amlico Refrigeration, Inc. • American Furnace Company • American Standard Air Conditioning Division, American Radiator and Standard Sanitary Corporation • American-Standard Industrial Division, American Radiator and Standard Sanitary Corporation • Arvida Air Conditioning Corporation • Armstrong Furnace Company • Bryant Manufacturing Company • Carrier Air Conditioning Company • Cleveland Steel Products Corporation, Muncie Division • Cystal Industries Incorporated • Columbia Specialty Company, Inc.
• Coleman-Evaporator, Inc. • Commercial Refrigeration Company • Day & Night Manufacturing Company • Frig-Air Corporation • Frigidaire Refrigerator Corporation • Gaither & Neilson • General Electric Company • Goshen Mfg. Company, The • Holly UNIT CORPORATION • Holly-General Company, Division of the Siegler Corporation • International Heater Company, The • International Metal Products Division, McGraw-Edison Company • Jannus Air Conditioning and Heating, A Division of Midland-Ross Corporation • Johnson Furnace Company, The • Linn Air Conditioning and Heating Corporation • National Thermo-Matic Corporation • Olen Manufacturing Company, O.A. • Paygo-Comfort, The • Perkins Corporation • Perfection Division, Borg Corporation • Pioneer Industries, Division of A. J. York Co., Inc. • Remfry Air Conditioning Co., Division of Remfry-Treasure Industries, Inc. (Formerly Remfry, The)
• Robin Mfg. Corporation • Split-Oil Division of Perkins Corporation • Southwest Manufacturing Company • Stewart-Warner Corporation • Texas Products Manufacturing Company • Thermo-Matic Manufacturing Company • Thermo-Electronics, Inc. • True Company, The • Tylbo Air Conditioning Division, Borg Corporation • United States Air Conditioning Corporation • Middletown Air Conditioning and Heating Corp., Subsidiary of Nomad Corporation • Westinghouse Electric Corporation • Williams Oil-Matic Heating Company, Division of National Union Electric Corporation • Worthington Corporation • Wright-Weir Manufacturing Company, Inc., Division of Wright Manufacturing Company • York Corporation, Subsidiary of Borg-Warner Corporation • Zink, John, Company.
Your kitchens will be fully equipped
...with Robertshaw-controlled gas built-ins

...and the fully-equipped kitchen helps sell the new house.

The most important room in the house, to Mrs. New-Home-Buyer, is the kitchen. Demand Robertshaw gas range and oven controls on your new built-ins . . . and use their superior features as selling points for your kitchens.

All these superior Robertshaw FLAME SET and FLAME MASTER control features are added selling points for your new homes. Insist on FLAME SET and FLAME MASTER controls for your new built-ins.

For the names of manufacturers using Robertshaw controls as standard equipment, write Robertshaw Thermostat Division, Robertshaw-Fulton Controls Company, Youngwood, Pennsylvania.

For real fast service, use DIRECT DISTANCE DIALING. Dial 412-242-7171.
PRESIDENTIAL HOMES of Pemberton, N. J. manufactures the components for these Dover, Delaware homes by Walter J. Ellis. Shown here, shell components being delivered to the site. Mr. Ellis particularly likes the way Insulite Sheathing strengthens the panels—also provides ideal backing for any siding (brick is used for floor level).

"Panels with Insulite Sheathing...a finish of Insulite Siding

HERE IS QUALITY I CAN SELL!"

SAYS WALTER J. ELLIS, Builder, Dover, Delaware: "Insulite Sheathing provides the extra strength and insulation. Insulite Primed Siding gives the attractive appearance that sells buyers—and the durability that keeps them sold."

Mr. Ellis is one of the leading builders in Dover, Delaware. His current project is Woodbrooke, an attractive development of homes in the $21 to $29 thousand bracket. He is presently building at the rate of 75 homes a year.

USES PREFABRICATED PANELS

Mr. Ellis says, "I'm all for panelized construction—if you start with good components and put them up right. I use panels made by Presidential Homes—and they're delivered right to the site—on time. Presidential fabricates the panels with rugged Insulite Sheathing—which I believe to be an outstanding product."

SIDING IS INSULITE, TOO

Over the insulated shell, Mr. Ellis applies Insulite Primed Siding—the man-made siding that handles and works like wood, and goes up fast and easy. Because Insulite Primed Siding has no structural grain, it has no knots or split ends—will not warp or splinter. Insulite Primed Siding is completely primed at the factory. It takes finish coats easily, is highly resistant to paint blistering.

NOW—A COMPLETE RANGE OF SIZES

As a lap siding, Insulite Primed Siding is available in 16' lengths—8", 10' or 12" wide. It also comes in plain panels for board and batten construction—and in vertical grooved panels with grooves ½" wide and 8" on centers. Panel sizes are 4' x 8', 4' x 9' and 4' x 10'.

build better with INSULITE Building Products

Inslute Division of Minnesota and Ontario Paper Company, Minneapolis, Minnesota
INSULITE SIDING GOES ON. A quick, easy job with Insulite Primed Siding say Mr. Ellis (holding board), and partner, Frank Gentile, Jr. No splits, knots or waste with this siding.

READY FOR OCCUPANCY. Here is the completed Ellis home. Notice how rich, warm look is made even more inviting by deep shadow lines cast by the Insulite Siding. Here is a home built to satisfy!
For Open Wall Shelving, No. 80 Standard (18" to 144" lengths, 1" adjustment). No. 180 Brackets (4" to 20" lengths). Satin anochrome, brass or ebony black finish.


K-V SHELF HARDWARE

easily installed, easily adjusted, lasts a lifetime!

The modern, convenient way to add needed shelving or desirable decorative effects. Handsome and sturdy, remarkably low-cost. Easy to install and adjust, lasts the lifetime of the house. Always keeps shelves straight, strong, sag-free. Available in a range of sizes to meet most specifications. Ask your K-V sales representative about K-V hardware and fixtures — or send for our catalog.

KNAPE & VOGT MANUFACTURING CO.
Grand Rapids, Michigan

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FLINTKOTE monoform® SYSTEM

gives you a free hand in roof design

Whatever your concept of shelter surface... from flat... to curve... to the most advanced geometric design... Flintkote Monoform can do! Here is the most versatile method of roof application ever developed. The Sealzit gun shown above applies special Monoform compounds simultaneously with chopped reinforcing glass fibres, forming a monolithic protective membrane that is resilient, tough, highly weather resistant. Whatever structure you may now have in the design stage, it should have a Monoform roof—and be sure to let the Flintkote Monoform system help free your hand in future roof designs!

The Sealzit gun is manufactured under the following U.S. Patents: 2,787,314; 2,933,125 and 2,813,751. Other U.S. patents pending. Patented in Canada. World-wide patents pending.

THE FLINTKOTE COMPANY
30 ROCKEFELLER PLAZA, NEW YORK 20, N.Y.
or BOX 2218 TERMINAL ANNEX, LOS ANGELES 54, CALIF.
Please send bulletin MS-11 on Monoform System

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I am an □ Architect □ Roofer □ Contractor
□ Builder, Other
Now the amazing lightweight, high-strength advantages of honeycomb sandwich structures are being applied in architecture. More and more architects, designers and decorators are designing glass, metals and wood into honeycomb sandwiches with Hexcel paper or aluminum core. Outside, inside—all around their jobs, honeycomb walls, doors, floors, partitions, tables, counters and lighting diffusers are reducing weight, adding strength, speeding completion. Honeycomb components are delivered to the job ready for economical, fast, easy installation. Investigate the magic of honeycomb sandwich structures. Write for Designers' Data, location of qualified fabricators.

HEXCEL PRODUCTS INC.
Stronger, lightweight materials for industry
Executive Offices: 2332 Fourth St., Berkeley 10, Calif.
Plants: Berkeley, Oakland, El Segundo, Calif.; Havre de Grace, Md.
Sales Offices: Inglewood, Calif.; Fort Worth, Texas; Chicago, Ill.; New York, N.Y.; Havre de Grace, Md.
Watch sales go up when **CERAMAFLEX** goes down

The sales magic of ceramic tile takes on new meaning when you install Ceramaflex resilient ceramic flooring in your new homes. Here's all the built-in beauty, permanence and easy care of conventional ceramic floors with two important plus values: Ceramaflex is quiet and comfortable underfoot. It's the perfect floor for kitchen, bath, entrance hall, family room and utility room. Ceramaflex creates an exciting new focal point for your sales efforts. Try it in your next model. Your ceramic tile contractor or nearby Romany-Spartan distributor will be happy to provide more information and samples of the entire Romany-Spartan line of quality wall and floor tile. United States Ceramic Tile Company, Department HH-17, Canton 2, Ohio.

*United States Ceramic Tile Company*

Decorative possibilities are limited only by the imagination with the complete range of colors available in Romany-Spartan glazed wall tile. The striking effect shown above was achieved by combining Tawny Beige tile with walnut paneling.

Each 9" x 9" Ceramaflex square is made up of 64 1" x 1" ceramic tiles securely bonded in a pre-formed, flexible rubber grid. Installs quickly and easily on, above or below grade. Because it's pre-grouted, Ceramaflex is ready for use the instant it's laid. Over-all thickness 9⁄4".
NATIONAL HOMES WITH EVERYONE

"Senior Citizen" Homes

ADVANCE SHOWINGS SWEEP MARKET AFTER MARKET—In subdivisions across the country, model introductions of the 1962 National Homes and Lafayette Series Homes are piling new sales records on top of heavy spring sales.

BONUS SPACE—BONUS VALUE—The greatest space-per-dollar values ever offered touched off this sales landslide . . . with "optional-use" areas in these 1962 Bonus Space Homes driving home sale after sale to growing families.

SENIOR CITIZENS SOLD—Adding a solid smash to soaring sales records has been the overwhelming acceptance of our new Senior Citizens Homes . . . designed specially for the comfort and convenience of retiring couples. Now you can offer them retirement in their own home towns, among friends and families.

$500 CONSTRUCTION SAVINGS—Newest National technical advances have given builders new profits, by trimming another $500 from construction costs:

1. New Precision Floor System—Cuts installation time to 4½ man-hours, saves a full day!  SAVINGS: $167.50!
2. New Aluminum Perforated Soffit—Slashes installation time 6-10 man-hours, gives superior ventilation and rain/snow entry barrier.  SAVINGS: up to $50!
3. New Dual-Duct Heating System—The greatest technical advance in home heating systems since World War II.  SAVINGS: $250!
4. Single Combination Rear Door—House door and screen/storm door in one. Ends second-door installation cost, cuts insurance claims!

LET NH RESEARCH YOUR DEVELOPMENT—National can pick winners for you . . . with National's field-tested market research . . . the proven sales-maker of all time. You'll build models tailored to meet your local buying trends . . . far ahead of competition. Write now for full details, to the nearest National Manufacturer listed at the right.
ARE DESIGNED IN MIND!

“Bonus Space” Homes

NATIONAL HOMES CORPORATION

divisions:
LAFAYETTE, INDIANA
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TYLER, TEXAS

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Newark, California
AMERICAN HOUSES, INC.
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NATIONAL HOMES CORPORATION • LAFAYETTE, IND.
Vina-Lux FLOORS
add value to your homes... yet cut construction costs

The luxurious look of Vina-Lux vinyl asbestos tile plus its grease resistance and easy-cleaning qualities help increase the appraisal value and sale-ability of your homes. But that's not all...

Vina-Lux actually reduces construction costs because it can be installed quickly and easily on or below grade over concrete slab — today's lowest-cost construction method — or over wood or plywood sub-floors.

Samples of nationally-advertised Vina-Lux, a model home merchandising kit, and idea-packed "Vina-Lux Floor Styling Handbook" are yours free. Write today!

AZROCK FLOOR PRODUCTS DIVISION
Specialists in the manufacture of vinyl asbestos tile and asphalt tile flooring
UVALDE ROCK ASPHALT COMPANY • 522 FROST BANK BLDG. • SAN ANTONIO, TEXAS

Over 50 colors and a style for every builder requirement
Roundup:

**FHA decides not to boost its interest ceiling**

Commissioner Neal Hardy's negative announcement Sept 19 is almost unprecedented. But reports that FHA was about to boost the maximum interest on Sec 203b loans from 5 1/4% to 5 1/2% were circulating so widely that some kind of action was in order lest lenders shy away from loan commitments in the hope of higher yields later (see p 54). Now, you can expect FHA to stand pat on its 5 1/4% ceiling at least until mid-November, Washington-wise analysts figure.

Why all the speculation about rate increase? After the Kennedy Administration sliced the FHA interest lid from 5 1/4% to 5 1/2% in February, discounts in the secondary mortgage market rebounded to their pre-February level in less than four months as the price of money declined generally. But since the FHA rate was cut a second time in late May, to its present 5 1/4%, FHA discounts have remained just about where they were. Hardy dutifully insists that this stability (which started all the talk) provides "good indications" the mortgage market will accept a 5 1/4% rate.

Almost everybody else seems to disagree. VA Administrator J. S. Gleason Jr has just written the House ways & means committee: "...There are many signs that the economy is again headed for a period of capital strain with the possibility that a new cycle of rising interest rates is beginning." Economist Leon T. Kendall of the US Savings & Loan League predicts flatly: "Mortgage rates are going to go up. Time is running out, or has just about run out, for home owners seeking to hit the bottom in mortgage interest rates for this turn of the business cycle."

** Carpets on the mortgage win FHA approval—for rentals**

The housing industry's years of effort to persuade FHA to let carpeting be included in mortgages are finally beginning to produce results. The agency has decided (but not yet announced when these lines were written) to make carpeting and draperies eligible for inclusion in FHA mortgages in individual apartments in all its multi-family housing programs. Up to now, carpeting has been financed only in apartment public spaces (corridors, foyers, etc.). Carpeting remains ineligible for mortgage financing in FHA's one-to-four-family housing programs. The agency has decided (but newly written the House ways & means committee: "...There are many signs that the economy is again headed for a period of capital strain with the possibility that a new cycle of rising interest rates is beginning." Economist Leon T. Kendall of the US Savings & Loan League predicts flatly: "Mortgage rates are going to go up. Time is running out, or has just about run out, for home owners seeking to hit the bottom in mortgage interest rates for this turn of the business cycle."

Are reckless salesmen selling people the wrong houses?

Yes, contends American Home, a leading consumer housing magazine (circulation: 3.7 million). In an article this month, the magazine says: "Many factors put people into houses where they do not belong. Not the least of these is reckless salesmanship, aimed to make any dwelling seem the best house possible for any family." In today's competitive housing market, say the magazine, "every trick of the selling trade is being brought to bear, for many builders have some bad guesses on their hands." Such accusations will stir talk in housing circles. But the prevailing fact still seems to be that salesmanship is one of housing's weakest phases.

**WASHINGTON INSIDE: HHH/Commissioner Weaver has refused an invitation to address the annual convention of the Natl Association of Real Estate Boards next month in Miami Beach. Such a snub of housing's largest trade group is unprecedented, say veteran Washington housing men. Apparently under pressure from Weaver, FHA Commissioner Hardy and URA Commissioner Slayton have also declined to talk. Insiders say Weaver's reason is that realtors have been spearheading opposition to raising HHFA to cabinet rank (which they oppose, incidentally, not because Weaver is a Negro but because they don't want more government in housing). Weaver did speak at the recent Boston convention of the Natl Association of Real Estate Brokers, the Negro realty group. He used the occasion to accuse big NAREB of racial bias: "It is unfortunate that the Natl Association of Real Estate Boards chooses to speak for only one segment of that business." The facts: the 70,000-member realtor NAREB has a predominantly white membership, but each local board has at least one Negro real estate broker. It was the Negro real estate broker (one member of the Brookly
diagram
WILL THE COMING SUPER-BOOM LIFT HOUSING TO 1.5 MILLION STARTS?

Only a few months back, such a proposition would have sounded far-fetched. Housing was wallowing along at a 1.1 to 1.25 million-a-year pace. It was not, for the first time in the postwar years, responding to the stimulus of cheaper mortgage money (and shrinking FHA and VA discounts). And word had got around that since the nation was amidst a temporary dip in the 25-34 age group—suburban housing’s prime customers—it would be the mid-Sixties before housing regained high gear.

But suddenly things are starting to look better. Sales of new homes are picking up faster than many housing prophets forecast. Sales of second-hand homes have bounced back far enough to halt the slump in prices that began about a year and a half ago.

Builders are planning to put up 1.5 million units next year, according to FORTUNE's semi-annual survey of builders' intentions.

Plans, of course, can go awry. But HOUSE & HOME's sister magazine calls this upsurge “attainable in a booming economy such as FORTUNE, and now everyone else, is expecting in 1962.” The big if, as the magazine sees it, is how much rental construction will continue to grow. The US should get between 270,000 and 275,000 new apartment units this year—a quarter of the total. That is 30% more than last year and 20% above the 1959 peak. Apartment construction has more than tripled in the past five years in the face of a stable or declining market for one and two-family homes. Says FORTUNE: “Builders are expecting only a 15 per cent rise next year. Some slowdown is inevitable, for apartment vacancies are rising.

Rental vacancies inched up to 8.1% in the spring quarter of this year, according to the latest Census figures. Census calls this “the same” as the 8.0% vacancy rate in the first quarter. But it's still a notable jump from the 7.6% vacancy rate in the last half of 1960 (and 6.0% in 1958).

You have to look beneath the overall statistics to gauge the probable impact of variations on new rental building. For one thing, 29% of vacant rental units lack some or all plumbing facilities. And most of these were 1) small, 2) cheap (under $50 a month), and 3) “had been vacant longer than rental vacancies with all facilities.” The message is clear: people won’t rent quarters too cheap to be good.

You can see more and more groping for ways to tap the market for very low-priced new homes—the market shell-house builders have been exploiting.

Housing’s hottest market is “a new kind of high-value, low-priced home,” contends Economist Nat Rogg of NAHB. “Perhaps the answer is to develop the idea of work equity.” Rogg figures between 120,000 and 140,000 shell homes will be built this year. Says FORTUNE: “Perhaps the answer is to develop the idea of work equity.” Rogg figures between 120,000 and 140,000 shell homes will be built this year.

Some 85% of new housing goes up in permit-issuing localities, says Census.

Moving in on shells
Prefabbers are scurrying to try to grab part of the market among the $3,000- to $5,000-a-year group—the market already invaded by shell house companies and about to be invaded by FHA’s new heavily subsidized middle income rental program (see p 50).

Inland Homes and the Knox Homes division of National Homes have come out with new models. Crawford is selling shell homes through franchised dealers in 20 cities. Builder Quincy Lee of San Antonio has also gone into the market with a product price from $2,700 to $8,200—depending on how unfinished the unit is.

As Economist Robinson Newcomb pointed out at a recent NAHB meeting, a man who can afford a shell house for $2,500 or $3,000 (with the typical 12%, six-year loan) could afford an $8,000 house if the terms are cut to only 8% and 15 years. Some S&Ls are beginning to make shell house loans.

INNOCENT BUYER LAWS SPREAD

A new law requires sellers of property in Pittsburgh and Philadelphia to warn buyers of any building or fire code violations in the property being sold.

Before a sale, the seller must obtain a certificate listing any violations or saying there are none. Sellers cannot be voided for failure to comply. Backers of the law say it will force property owners to clean up fire and building code violations.

The Pennsylvania law is modeled after a

### HOUSING MARKET:

#### Will the coming super-boom lift housing to 1.5 million starts?

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FHA is trying to help by revising its minimum property standards for Sec 203i homes, the bargain-basement program for loans up to $9,000 for which FHA already lets builders cut down on space and amenities.

### MARKET BRIEFS

#### Statistics: a new view

Census’ building permit statistics now loom as a better index of trends in housing volume than the traditional yardstick, starts. Ever since Census moved over the starts count from the Bureau of Labor Statistics and switched to a new method of projecting the totals (News, July ’60), starts figures (even when seasonally adjusted to an annual rate) have shown a baffling tendency to bounce up and down from month to month. This volatility makes it hard to read trends.

The bureau’s statistics on building permits, on the other hand, are adjusted to take account of variations in the number of working days each month, as well as seasonal variations. They show much more consistent trends. Currently, they show an increase in housing every month since last December, which was the low mark for the past 17 months. Comparative figures:

#### PRIVATE HOUSING UNITS

<table>
<thead>
<tr>
<th>Month</th>
<th>Starts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr '60</td>
<td>1,293</td>
</tr>
<tr>
<td>May '60</td>
<td>1,311</td>
</tr>
<tr>
<td>June '60</td>
<td>1,279</td>
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<tr>
<td>July '60</td>
<td>1,227</td>
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<td>Aug '60</td>
<td>1,217</td>
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<td>Sept '60</td>
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<tr>
<td>Nov '60</td>
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<tr>
<td>Dec '60</td>
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</tr>
<tr>
<td>Aug '61</td>
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</tr>
</tbody>
</table>

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The Pennsylvania law is modeled after a
SEVEN FEDERAL AIDS TO BUILDING IN THE RETIREMENT MARKET

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>PROVISIONS</th>
<th>ELIGIBLE BORROWERS</th>
<th>MAXIMUM TERMS</th>
<th>ACTIVITY TO JULY 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>FHA Sec 202</td>
<td>Direct federal loans for housing for elderly.</td>
<td>Private non-profit corporations; consumer cooperatives; public agencies except public housing</td>
<td>50 years at 3½%; 100% of development cost</td>
<td>$17 million committed; June &amp; July applications at rate of $30 million monthly.</td>
</tr>
<tr>
<td>FHA Sec 203</td>
<td>Insures loans for 1-family homes</td>
<td>Persons over 62; third party may provide down payment and co-sign loan</td>
<td>35 years; 5½%</td>
<td>About 4,000 homes during fiscal 1960-61.</td>
</tr>
<tr>
<td>FHA Sec 221</td>
<td>Insures loans for moderate income families</td>
<td>Occupant buyers; 3% down payment for homes under $15,000.</td>
<td>35 years new; 5½%</td>
<td>No figures available</td>
</tr>
<tr>
<td>FHA Sec 221d3</td>
<td>Insures loans for rental units at below-market rates</td>
<td>Non-profit organizations; cooperatives; public agencies except public housing</td>
<td>40 years; 3½%; 100% of cost</td>
<td>None</td>
</tr>
<tr>
<td>Sec 231</td>
<td>Insures mortgages for rental housing designed for persons over 62</td>
<td>Limited dividend corporation (Return 6% of equity)</td>
<td>90% of cost</td>
<td>Applications: 168, 21,311 units, $223.4 million; insured: 80 projects, 9,211 units, $86 million</td>
</tr>
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<td>FHA Sec 232</td>
<td>Insures loans for new or rehabilitated nursing homes</td>
<td>Non-profit corporations</td>
<td>No fixed term; 5½%; 100% of cost</td>
<td>Commitments: 31 projects, 2,463 beds, $12.3 million; applications: 32, 2,995 beds, $15.6 million</td>
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<td>FNMA special assistance</td>
<td>Sec 203, 221 &amp; Sec 231</td>
<td>Profit making corporation</td>
<td>90% of cost</td>
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<td>Sec 231</td>
<td>Operators of licensed proprietary facilities</td>
<td>20 years; 5½%; 90% of value</td>
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Says UCLA’s Gillies: “The non-profit sector has a very big back-up.”

The biggest of the California’s non-profit operators, controversial George McLain, spiritual heir of the Townsend people in California, has a one-time FHA chief construction examiner working for him. McLain is completing a 557-unit Senior Citizens’ Village in Fresno, is working on another 557-units in Lancaster, and owns land for a larger project in San Diego.

In Philadelphia, President Joseph N. Gordon of the Fidelity Bond & Mortgage Co sparked building of 220-unit York House by the Home for the Jewish Aged. “The religious groups are using consulting service—at least they are hiring architects who know the problems in this field and these architects are coming up with some interesting new ideas and fresh approaches,” says an expert in the California Dept of Social Welfare.

The religious projects, mainly because they have a built-in market, have scored some notable successes. Philadelphia’s York House was occupied almost as soon as it was built late last year. Over 70% of the 350 units are reserved in the Methodist-sponsored Wesley Palms project near San Diego, although the project won't open until next spring. The Baptist-backed Roger Williams Plaza in Denver filled its 73 units after a July 1 opening and has a waiting list. And the plush Sequoias, sponsored by Presbyterians in Woodside, Calif., has sold all but 20 of 228 units since opening in June. Entrance fees range from $22,500 to $32,000, plus $185 a month.

Gibson reports 12,732 existing homes (both occupied and vacant) actively for sale at the end of July, compared to 2,639 new houses sold in seven months.

This offers major confirmation of the proposition that in most communities the need of families who cannot afford a good new home can best be met by buying an existing home.

Detailed checks by Gibson staffers in the North Dade County area revealed some bargains. A typical offering of homes, all less than five years old, showed:

<table>
<thead>
<tr>
<th>Price New</th>
<th>$13,500…</th>
<th>$12,500 and fully furnished</th>
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<td>16,500…</td>
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<td>17,500…</td>
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<td>14,975…</td>
<td>$785 with option to buy at same payments</td>
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Staffers acting as buyers of one foreclosed new home were told, “Only $90 down on a conventional mortgage. Credit? We just run a one-day check. Anyone can qualify.”

Miami has a nine-month’s supply of unsold new houses.

At the end of June, Gibson warned that sales were falling behind completions. “While 12 new houses are sold every day, 16 new homes are built. Every day, four more unoccupied new houses are added to those already waiting for buyers.” But July’s sales spurred 5% to 341, exceeded the 497 completions. “The building recession in Dade County has apparently reached bottom,” says Gibson.

**Federal court gives builders fresh legal tools to fight design piracy**

Up to now, builders have generally been getting away with copying another builder’s house that is selling well. It is not only common practice but also hard to prevent once a model is on display for crowds of buyers.

But two new decisions by federal district judges in Southern California promise tougher times ahead for design pirates. For they apply the doctrine of indirect copying which, in effect, holds that a copyright of reproductions or photography will be prosecuted. Both denied they copied the designs but conceded they might have unintentionally used some of the ideas. But the two judges held that their homes “are similar in appearance to Bob Cortese’s Homes. Any one the look, alike features in photos shown to the court: side-by-side fireplace and planter, similar layout, rooflines, fenestration.”

Arthur S. Katz, copyright law specialist and one of Cortese’s attorneys, notes that copyright protection by statute covers only plans and specifications. “The legal question is whether these resemblances have naturally resulted from a general use of common sources and materials open to both architects or whether one architect used the work of the other as a model, copying from it rather than drawing from common sources,” says Katz.

Designers can enjoy common law copyright protection, too, without copyrighting.

“Courts have held,” Katz adds, “that simple construction of a house does not throw the plan into the public domain. So a builder doesn’t lose common law protection just by building his house with a non-copyright plan.”

Glendora Homes and Bennington-Smith have been ordered to surrender to Cortese all “drawings and all plates, negatives, and other material for making such copies.” Each must also pay a “meaningful sum” to Cortese, who refused to reveal the amount.

“This case,” says Katz, “proves that builders can stop others from copying their plans.”

**LOCAL MARKETS:**

**Are 3,257 Miami homes abandoned?**

Publication of that figure in a new series of monthly real estate reports has stirred disbelief among real estate men and mortgage bankers. Yet the report's backer, John Gibson Business Research Center, insists that it can produce maps and records of each home. A house is considered abandoned if it is "unoccupied, unkempt, and whose owners have removed without making apparent provisions for resale or maintenance of the properties." Reason for the skepticism: the report is being produced by the former staff of the University of Miami's Bureau of Business and Economic Research. The bureau, which the university dropped in an economy move, did a similar report for mortgage bankers, but this figure never appeared in any published data. No one has explained why.

But when the bureau was cut loose, its deputy director, John Gibson, started the monthly real estate survey as an independent business venture in Miami. The bureau's director, Dr. Reinhold P. Wolff, nationally known for his housing market studies, is on leave from his economics professorship.

Research Specialist Uriel Manheim of Housing Securities Inc, New York City, one-time associate of Dr Wolff, rates the new report as "the best done in the field—the only monthly report of its scope in any major city." Highlights from its other findings:

- There are five times as many used homes for sale as new houses sold all year.
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**GAINS:**

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**Houses Reportedly Sells:**

- Miami has a nine-month's supply of unsold new houses.

At the end of June, Gibson warned that sales were falling behind completions. "While 12 new houses are sold every day, 16 new homes are built. Every day, four more unoccupied new houses are added to those already waiting for buyers." But July's sales spurred 5% to 341, exceeded the 497 completions. "The building recession in Dade County has apparently reached bottom," says Gibson.
WHY MARKET COLLAPSED

House & Home Correspondent Fred Sherman, who is real estate editor of the Miami Herald, gives this clear view of Miami's troubles.

The whole pie-in-the-sky system broke down all at once. The man who bought a $10,000 house in 1950 to sell for $15,000 or $16,000 in 1955. Including his slow buildup of equity, he profited perhaps $7,000 and used it for a down payment on a $25,000 house.

But starting about two years ago nobody would buy a tract house of 1950 vintage because it was possible to buy a new house on no more than very favorable terms. So the remaining owners of early 1950 subdivision houses were virtually locked into their purchases.

Additionally, the recession has slowed migration to south Florida so much that Dade County, which had expected to reach 1 million population in 1959, now this mark will not arrive until February 1962.

But it will still take nine months to use the 2,477 unsold homes. "Severe competition will continue with discounting and price cutting a common practice when models fail to sell," the report warns. "The saturation point on common practice when models fail to sell, as every four months in one successful low-price project."

Completed a home in 1961 are holding 408 units. Eleven of these builders hold seven or more homes. One-third of all builders account for 80% of all homes built.

At mid-year Gibson tallied 220 builders who had finished only one house: 78 with two, and 51 with only three homes. Thus 348 of the 464 builders completing a house this year had built 529 of the 2,892 homes completed.

In other words, one-third of the builders accounted for 80% of all homes built. And the 25 biggest builders, or 5.5% of the total, constructed 1,426 houses—54% of the total.

Seattle: Housing is up a whopping 20% to 30% over last year. Rezun; Boeing, the city's major employer, has new aircraft orders and a feeling of prosperity is in the air. Says President Lennox Scott of John L. Scott Co, leading builder of higher-priced houses: "Our sales of houses over $40,000 are at an all-time high in seven years."

Sacramento: An unsold inventory of around 2,000 homes still haunts builders who rushed production too far ahead of sales. Many buyers are sitting on their hands, building for bargains. But Builder Dick Price, among others, is moving houses at a one-a-day clip. Key: value and good location.

Indianapolis: Apartment building is spurtting for the first time in ten years. Garden apartments in the suburbs close to shopping centers are attracting investment (the last multi-family downtown apartment went up a decade ago). One project in the northeast section commands $110 to $125 monthly for two-bedroom units while a second in the northwest rents in the $150 range.

Multi-family units are running 87% ahead of last year, according to Advance Mortgage Corp, and local observers feel new units will surpass 1960's 300 easily. Surprisingly, all apartments started this year are conventionally financed.

The apartment spurt hasn't hurt other newer apartments and FHA says the 5,000 units it insures has less than 2% vacancy.

Older and cheaper apartments near downtown are suffering.

Hardest hit are older apartments and large houses converted to smaller apartments during and after World War 2. Vacancy rates here run between 25% and 50%. Many buildings are for sale, although rents are high and they are even harder to sell than to rent.

Owners say many tenants have moved to new homes in the suburbs, where their $65 and $70 monthly payments are less than their rent. "They aren't finding a place with a ma: either lower rents to draw families living in worse neighborhoods or spend money for improvements to attract new tenants. With no rent money coming in, few have chosen the latter."

New military housing plan avoids red tape

Builders who want to put their eggs in more than one basket are taking a fresh look at a program most have long spurned: military housing.

Thanks to new provisions in the 1961 Housing Act, military housing now offers a broader range of opportunity to a broader range of builders.

Most important change involves FHA Sec 810 under which FHA insures off-base rental housing for service families, civilian employees, and contractors working on defense installations. Through some drastic legislative surgery— the handiwork of Chairman Albert Rains (D. Ala.) of the House's housing subcommittee—the restrictions that have hampered 810 since it was written into law in 1959 have been removed. Now, in contrast to Capehart Act military housing, Sec 810 housing 1) doesn't have to be approved in military construction bills, and 2) doesn't require a Defense Dept guarantee of the mortgage payments, if FHA asks for one. This eliminates time-consuming delays for double processing, clearances between agencies, and formal certification of need by the military. Sec 810 is rental housing. FHA expects most units built under it to be one-family structures.

The keynote of Sec 810 now is flexibility—at a better in some ways, not so good in others. FHA. Under a liberal room-count system whereby a bathroom and carport each count as half a room and a garage as one.

Q. Who will make inspections?
A. FHA. Under special assistance (current price: 99). But builders offering poor value or inferior work will merely advise FHA or the military of FHA's Sec 207 rental program.

Q. Who will determine how many units it will insure.
A. By FHA, military inspections a la Capehart are out. This will remove a major gripe of Capehart builders who have complained that military inspectors and unequipped FHA engineering officers plus whimsical changes in specifications have made military housing a profitless venture.

Q. How does Sec 810 financing compare with Capehart?
A. Sec 810 mortgages carry a 5½% market interest rate which will make the loans more palatable to more lenders than Capehart's and Capeharts are eligible for FNMA purchase under special assistance (current price: 99). But Sec 810 mortgages are 100% of estimated replacement cost while 810 loans are limited to 90% of value.

Q. Will Sec 810 be a boon to big builders only?
A. No. Not necessarily, says FHA. "There's no reason for us to favor a big builder over a smaller one," says an FHA staffer in Washington. At the present time 50% to 75% similar with the military—which should give local builders a leg up on big out-of-town operators, he adds. Builders interested in Sec 810 should start with their local FHA offices. Processing will be similar to Sec 207 rental housing.

Q. Where will the first 810 houses be built?
A. Good guesses are around the Air Force's Cape Canaveral in Florida, at the Army's Redstone Arsenal at Huntsville, Ala.; at Navy installations at New London, Conn, and Lemoore, Calif.

First houses are likely to be for high-salaried civilian scientists who will want and can pay for more expensive quarters than service personnel.

Mobile home manufacturers have moved a step closer to housing developers for a run for the money in military housing.

The Senate appropriations committee recommended that an Air Force request for money to set up trailer courts at nine bases be restored to an Air Force appropriation bill. The trailer funds were deleted by the House.

The Senate committee cut the Air Force request for $1,318,000 to $977,000 and slashed six from $2,000 each to $1,500.

The Senate committee said it would "monitor the Air Force trailer court program to determine its applicability to other services in the future."

Houston: Residential building permits for the first seven months totaled 3,342, up from last year's seven-month total of 3,112. With the pace still picking up, the prospect is for this year to well outstrip 1960. Big gainers are houses in the $14,000 to $24,000 class. Cheaper houses ($9,000 to $14,000) are lagging.

Salt Lake City: Sales have perked up after a slow spring. Says Executive Officer Ken Caphart of the local NAHB chapter: "Nothing is happening." Builder Alan Brockbank is selling well in two subdivisions. Ned Johansen reports that sales of his $40,000 to $50,000 are running three times ahead of last year. But builders offering poor value or inferior locations are finding sales harder to come by.

Omaha: Land developers are laying out more lots than in any year previous, and the outlook is for 1961 starts to surpass last year's 3,157 handily. In the first eight months, starts already reached 2,967.
"Ruberoid's 'Open House Plan' sells homes by selling Quality"

"Prospective home buyers look for extra values before they'll even think of buying," comments Mr. Chodos. "Then, after you show them value, you must back it up with quality construction. That's why the Ruberoid Open House Plan works so well for us.

"The 'Sell-O-Rama' Display spotlights the quality of the building products used in our homes. It presents a convincing sales story in a way that really holds the prospect's attention. In many instances, Ruberoid's 'Sell-O-Rama' was a deciding factor in closing the sale."

Now in its second successful year, the Ruberoid Open House Plan has conclusively proved its value to builders. It has proved that quality building materials are powerful sales features to home buyers—when these materials are pre-sold through national advertising—and then dramatically displayed by the "Sell-O-Rama" at the point-of-sale!

Interest stimulated by "Sell-O-Rama", prospect inspects the Ruberoid shingle roof. He is very much interested in how sound it is, how long it will last.

"Mrs. Prospect" enjoys Dura-Color siding's beautiful colors sealed-in for life under armor-hard plastic. "Mr. Prospect" really appreciates the fact that this siding will never require periodic repainting.

"Ruberoid service is tops" say U.S. Execs, (left to right) Herb Hutt, Vice-President; Bob Winnerman, President; Bernie Chodos, Exec. Vice-President.
Featuring these quality building products from RUBEROID

Salesman Bill Kirch uses “Sell-O-Rama” Display to point out quality features of Ruberoid Dura-Color Siding. Also used in homes and featured on display are Ruberoid Asphalt Shingles, Insulation, and Polymerite Floor Tile.

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Complete Program includes:

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2. Product Displays
3. Magazine Signs
4. Consumer Literature on roofing, siding, floor tile and insulation.
5. Exterior color styling suggestions.

Take advantage of this sales-producing plan. For complete information without obligation, call your local Ruberoid representative or write directly.

RUBEROID

The RUBEROID Co., 733 Third Ave., New York 17, N. Y.
The income limits FHA has just set for the most controversial program in the 1961 housing law will surprise a lot of persons who listened to the stress in Congress about helping families in the $4,000 to $6,000 income group.

The income limits go all the way up to $7,750 (in Chicago), but this is no higher than expected, considering what Congress finally enacted.

The experimental program (ending June 30, 1963) was widely touted as providing rental housing for families who can't afford new housing at today's prices, but details on how the exception Congress finally dropped a proviso from the bill which required that only families excluded from the general housing market could use it (see box).

The law set up Sec 221(d)(3) to insure 3 1/4% loans to co-ops, non-profit and limited dividend corporations, and public agencies but not at private market rates. Families are eligible for special assistance purchase by the Federal Natl Mortgage Association—at subsidized prices.

FHA has set income limits for a family with two or more persons of $6,900 (in 37 of 52 offices) and $6,000 (in 15 offices) and $5,600 (in 9 offices). The test unit cost per room is shown in column one of the table below.) This is FHA's time-honored method of acquiescing to needlessly high construction costs in cities saddled with waste-making building codes, labor featherbedding, or inefficient management.

After all but 19 offices had estimated this cost, FHA estimated rentals by using these assumptions: 3 1/4% rental cost, 40-year level amortization, 40% operating expense ratio; 7% vacancy allowance; and 6% return on investment of a limited dividend corporation. Annual income was estimated at five times the yearly rental (column two in table below).

FHA next estimated median family income in each area from information supplied by Census. The lowest of the two figures was then used as the income limit for a family of four.

Result: in 27 cities with low construction costs the income needed to pass a credit screening will govern eligibility; in 25 cities median income of the area governs.

For high cost cities, FHA has devised a complex formula to prevent 221(d)(3) units that would require upper bracket incomes.

Specifically FHA cuts mortgage limits by the percentage the median income falls below the income level needed to qualify for the yardstick apartment. You bet. Here's how it works out in Providence, for example: the area's median income of $5,700 is 16.9% below the $6,923 needed to rent the sample unit. So the final mortgage limit of $2,000 per room is 16.9% below the $2,386 it would cost to build the sample unit.

C. Franklin Daniels, assistant FHA commissioner for rental housing, says FHA had no alternative but to reduce mortgage amounts accordingly. And the limits arrived at are only for public agencies, co-ops, and non-profit builders. Limited dividend corporations must cut another 10%.

### Income, Mortgage Limits for FHA

<table>
<thead>
<tr>
<th>City</th>
<th>Income Median Per Family</th>
<th>Mortgage Limit 223(d)3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miami</td>
<td>$5,900</td>
<td>$2,250</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>$5,350</td>
<td>$2,250</td>
</tr>
<tr>
<td>St. Louis</td>
<td>$5,600</td>
<td>$2,250</td>
</tr>
<tr>
<td>Milwaukee</td>
<td>$5,900</td>
<td>$2,250</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>$6,900</td>
<td>$2,250</td>
</tr>
</tbody>
</table>

For the 98 cities in the 32 areas that still have the original per room cost per unit: 25 states have the same income limits as the Census Bureau reported in 1959. Thirty-three cities clamped their limits to $7,000. Still, the limits are higher than the ceiling for continued occupancy in public housing for the families of $4,000. B.C. (p. 67). Sen. Mansfield spread the $6,000 spread between the two in New York City: the FHA income of $6,900 is only $220 over the median income the Census Bureau reported in 1959.

Excluded from the general housing market are eligible for special assistance purchase by building public housing exclusively. The loans could be used for rental housing, says FHA had no alternative but to reduce mortgage amounts accordingly. And the limits arrived at are only for public agencies, co-ops, and non-profit builders. Limited dividend corporations must cut another 10%.

### Cabinet rank for housing?

Congress drops it for '61

The Senate was scheduled to act Sept 7 on the Administration-backed bill to create a cabinet-level Department of Housing & Urban Affairs, but Majority Leader Mike Mansfield (D. Mont.) postponed consideration of the measure until Congress reconvenes in January.

The measure was intended to help families earning $4,000 to $6,000 annually, a group which, contended Sen Paul Douglas (D. Ill.), earns incomes "too high for public housing, and too low for them to get decent housing under existing systems of financing," Sen John Sparkman (D. Ala.) let slip the observation that the program "seeks to provide a rental housing program which will replace the public housing program.

The House, meanwhile, required 221(d)(3) occupants to be families "whose incomes make it impossible for them to obtain decent, safe, and sanitary housing in the private market.

But the conference committee to resolve differences between the two versions abruptly dropped this limit. Reported Chairman Albert Ball (D. Ala.) of the House housing subcommittee on the limit: "There was no comparable provision in the Senate bill and none is contained in the conference substitute." Thus the final legislative report on the program curiously omits the kind of Congressional mandate against special assistance purchase by the program that helped persuade Congress to adopt it at all.

Can builders put up suitable housing at this lower cost? Democrats think they can. But he concedes the housing will certainly have to be below the property standards used for the yardstick unit.

This means that in cities where construction costs must be squeezed, families in the so-called middle-income category will get accommodations inferior to public housing.

### Open end—housing style

The 1961 Housing Act does not require income limits on FHA's new subsidized interest rental program—apparently because the management of the new program through Congress involved some masterfully misleading maneuvers.

Here's the untold story:

In presenting the legislation, HHF-Administer Waveler said "occupancy of the projects would be limited to families whose incomes preclude them from standard housing in the private market." He promised "FHA would also establish limits for public housing rentals." But the draft law President Kennedy sent to Capitol Hill was silent on the subject.

The Senate banking committee, reporting the housing bill to the floor for debate, repeated Weaver's explanation and assured the Senate: "This limitation would be accomplished through regulatory requirements which would necessarily differ depending on whether the borrower is providing non-profit rental housing, co-operative housing, or limited profit rental housing."

Democrats explained orally that the bill was intended to help families earning $4,000 to $6,000 annually, a group which, contended Sen Paul Douglas (D. Ill.), earns incomes "too high for public housing, and too low for them to get decent housing under existing systems of financing," Sen John Sparkman (D. Ala.) let slip the observation that the program "seeks to provide a rental housing program which will replace the public housing program.

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much controversy as possible to speed ad-
motion.

2. A House version of the bill appeared stalled in the rules committee, which might have made Senate action futile, anyway.

The big stumbling block in Congress is just what it has been all along: HHFA Admin-
istration director Weaver seems to be a cinch to be come Urban Affairs secretary, but Southern congressmen don't want to see a Negro who is also a strong advocate of racial integration get the job. Administration strategists hoped to keep the bill away from civil rights con-
tention by persuading Southern moderates to support it. But this hope vanished when word got out that Sen John J. Sparkman (D., Ala.) intended to keep the Senate's housing subcommittee, would oppose the measure. Sparkman is normally a loyal Administration supporter; his opposition would have pro-
duced solid Southern votes against the bill.

HOUSING ABROAD:

US will back $10 million for Latin American homes

This is the first time the US has agreed to stand behind housing loans in Latin America—loans which rank among the riskiest of in-
vestments because revolutions, land confiscation, and inflation all threaten profits.

But the new foreign aid program just passed by Congress and signed by President Kennedy gives the US a chance to guarantee up to $10 million for housing in Latin American countries, part of a program to guarantee $100 million of American invest-
ments throughout the world. Considering the hazards, it seems questionable whether mortgage lenders will want to risk the savings of thrifty citizens when they may suffer a 25% loss.

Backers say the amount will provide only a pilot program with relatively few units. But they hope the experience will lead to a bigger program.

Under the law, US citizens, corporations, and partnerships are eligible to apply for a grant from the International Cooperation Administration for guarantees against 1) inability to convert for-
eign currency or credits to US dollars, 2) loss of principal or interest due to devaluation, or exprop-
ation or confiscation of property, and 3) loss due to war, revolution, or insurrec-
tion. A fee is charged, but no amount has been set.

ICA housing officials believe high shipping costs will keep US prefabs and shell-house makers from getting into the program. How-
ever, most Latin American nations insist that native materials and labor be used.

Biggest immediate use may be to woo money—such as retirement funds.

Many of these are now hampered by laws
preventing them from investing outside the US. Example: the AFL-CIO is interested in financing construction of housing for some of their members who are Panamanians. But they have been stymied so far by US rese-

cution to sell land inside the Canal Zone.

Spurred by hope this plan would be ap-
pproved, Congress adopted a new FHA-

tyle law which is the first of its type in Latin America. The ICA would work closely with such insurance programs. And Chile last year set up one which combines in one package all functions of major US housing agencies:

plus mortgage loans. The bank, promoted by ICA and American S&Ls, is more of a spurn

to long-term saving to finance Chilean hous-
ing than it is a government mortgage insurance

program. 

NAHB DIRECTORS:

 Builders push triple-subsidy plan as answer to public housing

The plan raised far fewer hackles on the necks of NAHB directors, at their August meeting in Southport, than anyone had ex-
pected. It was received with little debate, in marked contrast to the bitter wrangling at the May meeting (News, July) where di-
rectors reversed an historic stand and accepted the idea of a Federal National Mortgage Agency to help house the lowest 20% of wage earners. But directors then left unanswered the key question of what kind of public funds should be used. The 1961 Housing Act in June gave the stimulus committee headed by past NAHB President Dick Hughes two recipes. The committee added a third of its own. The three subsidies NAHB is seeking are:

1. Below-market 3 1/2% loans under FHA's new bargain-basement rental program (Sec 221d3).

2. Payments from the $5 million backdoor spending authority Congress gave HHFA for public housing demonstrations.

3. Local tax abatement of $9 a unit per month equal to the average tax subsidy public housing units already get.

The three would be combined this way: units

under the low-interest program would also get local property tax exemption. But tenants would pay even less than this twice-
subsidized rate. In some cases HHFA would require fami-

lies to pay only 20% of income. The differ-
ence between this and the twice-subsidized cost would be paid from the $5 million demonstration fund.

The plan is tailored for the 6 million US families NAHB's Hughes contends are badly housed because they are poor. Most of them have incomes below $3,000 a year, which puts them in the lowest fifth of income dis-

tribution. One out of three is Negro. NAHB would limit occupancy to families in the low-
ed 20% of income in each community. In At-

lanta, for instance, a family of four would require quali-

fied families could earn no more than $2,200. In New York, the cutoff would be $2,945; in Los Angeles, $2,790; in Dallas, $2,540.

"Some people say Sec 221d3 is a subsidy," says Hughes of using the controversial section. "Normally people in low income groups pay more—such as retirement funds. But in this section Congress

is also getting a small subsidy by slight-

damage to their interest rate. The $5 million demonstrates.

That the plan would be a "good buy" for the government and the owner is the NAHB's Hughes describes Weaver's reaction to the NAHB plan as "enthusiastic." But he has not yet given a go-ahead on paying the extra

subsidies from his special demonstration fund.

Hughes says 50 of these units may eventu-

ally be sold, but FHA Commissioner Neal

Hardy has not yet agreed to this.

Cleveland's pilot project is expected to be built by Cleveland's local public housing authori-

ty. This year's Housing Act lets cleared land to be sold at "fair value" without bidding for moderate rental housing. Builder George Fuller hopes he can construct units for $12,000.

Denver's project is still being worked out, says Hughes.

Hughes himself will refinance 100 Sec 608 units in Wichita Falls, Tex., under Sec 221d3. The units (50 one-bedroom, 50 two-bedroom) cost $5,000 a unit, and Hughes plans to spend $2,000 a unit on improvements, in cluding air conditioning and carpeting. When refinanced at the 3 1/2% interest, the units will rent for $34.19, plus maintenance and manage-

ment costs.

HHFA Administrator Weaver calls the NAHB plan "ingenious." Hughes describes Weaver's reaction to the NAHB plan as "enthusiastic." But he has not yet given a go-ahead on paying the extra

subsidies from his special demonstration fund.

Hughes says that the 400 units planned by NAHB could use $1.8 million of this if all are operated at full subsidy for the full term of the loans. But he expects that some units will be sold to individuals (perhaps under condominium at market interest rates) before the 50-year loans expire.
The NEWPORT Door, Frame, and Hardware Package—made by the Truscon Division of Republic Steel—is a complete, new, economy package designed in steel to save building dollars. Only the NEWPORT brings you all these features:

QUICKEST AND LOWEST INSTALLATION COST
- One man can hang the door in seconds—after interior work is completed.
- Door is prefinished with baked-on enamel. Install it as is, or paint the smooth, flush surface to harmonize with room colors.
- Eliminates all mortising, fitting, sanding, and hardware preparation.
- It’s a complete package: door, frame, and handsome, high-quality hardware.

ELIMINATES COSTLY CALL-BACKS...
- It’s maintenance-free, because the NEWPORT is rugged, durable steel—it can’t warp, sag, swell, shrink, twist, or rot.

WHISPER-QUIET OPERATION...
- The NEWPORT’S special acoustical core soaks up sound and insures luxury-silent operation.

The TARTAN Frame for 1½” Interior Doors is another Truscon product designed in steel for dollar appeal. For homemaker appeal—clean, contemporary styling and smooth, easy-to-care-for finish. The TARTAN saves as it serves because . . .

INSTALLATION IS FASTER, EASIER . . .
- It’s a complete profit package: frame, strike, and bumpers.
- No mortising, finishing, sanding, or hardware preparation.
- Install it after drywall.
- It’s a self-aligning, self-adjusting frame—rough frame need not be completely flush and square.

IT’S MAINTENANCE-FREE
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Name

Company

Address

City___ Zone___ State___

October 1961
Interest rates move up

FHA and VA discounts continue their slow rise. More and more loans go to Fanny May

The trend that began in August is making itself felt more widely.

Discounts on FHA and VA mortgages increased ½ point to a point in five cities in House & Home's monthly 17-city survey. Some mortgage men are offering investors higher yields by making servicing concessions—typically, ¼% instead of ½% for four years, which is equal to 1 point discount.

Conventional loan rates are rising, too. A few S&Ls have boosted mortgage interest rates; others do more of their business at the top edge of quoted spreads. Many are boosting yields without raising rates by charging bigger fees.

Some of the interest rate increases have been driven by the fact that, with a slowdown in mortgage buying, the government housing agencies are offering lower yields to investors. For example, Fannie Mae is offering 7½% instead of 7⅞% for a 5-year loan, and on a 15-year loan it will go 90% but only for 25 years. In Miami, an S&L is offering the whole package—but at a higher interest rate and with extra fees tacked on. S&L men say that a loan has to be a prime one to get the maximum terms. Adds New York S&L man Floyd Cramer, new president of the Natl League of Insured Savings Associations (p 74): "The longer term won't bother us much, but most S&Ls will want more than the 10% down payment."

The uptrend of rates may continue but its pace will probably be gentle. "Investors want the yield," sums up President Stanley Earp of Detroit's Citizens Mortgage Corp. But economists point out that while interest rates fell during the recession, they did not fall to the low level of other recent business dips. So they will probably rise less during this recovery. Moreover, investment capital is still ample: consumer purchasing of durable goods, a major factor in credit demand, still lags, and plants haven't been expanding or building up inventories as anticipated. Says Economist Nat Rogg of NAHB: "Capital demand is growing at a slower rate than in previous recoveries."

FHA won't boost its basic interest rate from 5⅞% to 5⅞%—now.

The decision was announced after a top-level meeting of Administration economists and housing men in Washington at midmonth. Such negative pronouncements are rare. But mortgage circles had been buzzing with talk that a boost might be imminent, and the Wall Street Journal fanned this hope with a dope story that FHA was considering a rate increase. Government housing men feared lenders would hold off on commitments in hopes of a higher return.

Invited to the meeting were Lee C. White, assistant special counsel to President Kennedy; FHA Commissioner Neal Hardy; Kermit Gordon, housing expert in the Council of Economic Advisers; Robert C. Turner, assistant budget director; Fanny May President Stanley Baughman; HHFA General Counsel Milton Semer; Philip Brownstein, VA's chief benefits director.

The FHA rate, concedes one government housing official, "is the acid test as to whether this Administration is honest when it says it believes in flexible interest rates"—ie rates that go up as well as down. But indicating current Administration thinking, he adds: "So far, the market doesn't warrant a boost. The recovery from the recession isn't dragging up rates as in the past."

New long-term FHA and S&L loans aren't making much dent in the market.

A few lenders have expressed interest in 35-year FHAs. Washington's Frederick W. Berens is selling a loan to a savings bank at ½ point below its 30-year price (96½), reports Executive Vice President Hector Hollister. It has a future commitment on a subdivision at 96, same price as 30-year futures. Vice President Robert E. Morgan of Los Angeles' Colwell Co. reports nibbles from some investors at prices ranging from par with 30-year loans to a point under. But most investors still refuse to talk about 35-year loans. Builders aren't generating much pressure for them yet either. Many shun them because of the extra discount. Others are shy because they know investors don't want them.

S&Ls aren't rushing into the 30-year market in volume either. A few are making the loans but some will only go to 80% instead of the now permitted 90%. Others will go 90% but only for 25 years. In Miami, an S&L is offering the whole package—but at a higher interest rate and with extra fees tacked on. S&L men say that a loan has to be a prime one to get the maximum terms. Adds New York S&L man Floyd Cramer, new president of the Natl League of Insured Savings Associations (p 74): "The longer term won't bother us much, but most S&Ls will want more than the 10% down payment."

MORTGAGE BRIEFS

Tax break on FNMA stock

Under a 1960 law, mortgage bankers can deduct as a business expense any losses they suffer in reselling the Fanny May stock they have to buy when they sell loans to the agency. The law reversed a 1958 Internal Revenue Service ruling that the loss must be treated as a capital loss—ie, with limited deductibility.

But the law was mumm on what mortgage bankers could do about losses prior to 1960. For many a mortgage banker, the stock purchase—1½% of the amount of the mortgage—represented a sizable loss since the stock then sold for around 50c on $1 (current price: 77 bid). Now, a Tax Court ruling has held that in cases arising before the new law, the mortgage banker can write off the losses in full, too. IRS has 90 days to decide whether it will go along with the decision in all pending cases, or continue to resist it.

Ten Percenters (cont'd)

The state of California has stepped in to help bail out 406 San Francisco area homeowners threatened with the loss of their homes in the wake of the celebrated Ten Percenter crash.

Residents in three subdivisions in Napa, Solano, and Contra Costa counties bought houses under contracts of sale. First trust deeds on the houses were held by two savings & loan associations, Home Mutual and Berkeley, both members of S&L Tycoon Mark Taper's empire. The builder, LeMount Construction Co, which kept title under an installment sale scheme, sold contracts. They wound up in the hands of the Mason Mortgage Co of Washington, D.C. as second trust deeds on the properties. Mason sold the deeds to investors, then went into bankruptcy last year. When the S&Ls and second-trust-deed investors didn't receive their payments, they sued to foreclose.

Gov Edmund Brown, already hip-deep in a $700,000 Fanny May stock scandal (Sept), ordered State S&L Commissioner Preston Silbaugh to find a way to stave off the foreclosures. The S&Ls agreed to cooperate.

Silbaugh's solution: reappraise and refinance the houses, giving the homebuyers title in place of the installment contracts. Since most of the houses have appreciated in value—some $13,500 houses are reportedly worth around $16,800 now, thanks in part to additions like patios and fences—there seems to be enough new equity available to make refinancing easy, says Silbaugh. Holders of second-trust deeds may have to compromise, he says, but he's "fairly certain" they will. Otherwise, he adds, their equity could be wiped out by foreclosure of the first-trust-deed holders. The appraisals are being made by the S&Ls.
FNMA expands 221 purchases

Now the agency will buy FHA insured mortgages on one-to-four-family sales housing for low- and moderate-income families (Sec 221d-2) under its secondary market operations. This is the first timeFNMA has included loans eligible for special assistance in its secondary market purchases.

The mortgages, authorized under this year's Housing Act which liberalized the entire 221 program (News, Aug.), carry a market interest rate of 5 1/4%. FNMA's price for the loans: 1 point under its regular FHA Sec 203(1) % secondary market prices. FNMA also will buy FHA Sec 203i 5 1/4% home mortgages ($9,000 and under, in areas where regular financing is unavailable) at 1 point below Sec 203 prices. FHA has eliminated the extra 1 1/2% service charge permitted on 203i, thus sharply reducing their attractiveness to private lenders (News, Sept.).

For both 221d-2 and 203i mortgages for not over 30 years, immediate purchase prices will range from 96 to 98, depending on the area and amount of downpayment. Prices will be cut 1/2 point for each five-year term beyond 30.

FNMA speeds claims payoffs

In a move that will be welcomed by mortgage lenders, FHA has proposed a new system for faster payment of debentures for defaulted insured loans. Now lenders will:

- Receive 80% of the unpaid balance of a foreclosed mortgage within 30 days after FHA is notified that title to the property has been transferred to the agency.
- Receive the remaining 20% after FHA completes its regular processing of the claim.

Reason for the drastic step: a sharp increase in defaults coupled with a staff shortage has produced a huge backlog of claims. Payments to lenders have been delayed more than a year. Even though the debentures are dated back to the time foreclosure was begun, lenders complained that FHA's sluggish processing was tying up loan capital and depriving them of debentures to pay FHA insurance premiums.

Applying the partial settlement method to the present $115 million backlog will pump some $92 million back into the mortgage lending system right away, says FHA Commissioner Neal J. Hardy. FHA's 20-year debentures currently carry an interest rate of 3 1/2%.

To obtain partial settlement, lenders must fill out a supplementary form (No. 1125) in addition to the regular claim form (No. 1025) notifying the agency of title transfer.

IRS rules on co-op taxes

An advisory ruling by the Internal Revenue Service nibbles away at some of the advantages of co-op ownership.

The buyer of a co-op apartment who sub­leases it cannot depreciate or amortize his investment in his income tax as can be done in other kinds of residential rental property. He may take deductions for interest and property taxes, however. IRS's rationale for the ruling: a co-op apartment owner is a stockholder, doesn't hold title to the property. Depreciation is not allowed on stock.

NEWS continued on p 58

MORTGAGE MARKET QUOTATIONS

(Sale by originating mortgagee who retains servicing.) As reported to House & Home the week ending Sept. 18, 1981


FNMA STOCK

Month’s Month’s
Bid 74'/2 78 75 80'/2
Asked 76'/2 80 77 82'/2

Quotations supplied by C. P. Childs & Co.
"You know what, Howard? I think I'll be a builder when I grow up."

"Yeah. Me, too."

"Heck, it don't take much. Some lumber, a hammer, nails and cast iron pipe."

"Oh, here we go with the cast iron pipe again."

"Well, the builder at this development said if I'm gonna be a builder I should use cast iron pipe because nothin'll ever go wrong with it."

"You know something, Bill? I think you've been brainwashed."

"Oh, you're a little punk, that's what! Did you know that the cast iron pipe that brings water to our home is over 100 years old?"

"Big deal. So is Dad."
In some growth industries, experts say product and services that didn't exist five years ago now account for almost a third of their growth in sales. Yet housing's rush to the stock market seems on the way to creating a similar situation.

Two years ago, before passage of the Real Estate Act of 1960, income tax laws in California allowed developers to attract investment without using real estate investment trusts. And you could count on the fingers on one hand those builders and land developers whose stock was widely enough held to attract SEC registration.

The last 12 months' figures on stock issues registered with the Securities & Exchange Commission show how fast the scene is changing. No less than 17 real estate investment trusts have applied for permission to sell more than $125 million of securities to the public. No less than 18 builders, community planners, and land developers have received SEC to allow SEC to approve securities.

There have been a dozen shell homes issues, ten savings and loan holding company issues, seven mortgage company issues. Latest builder issues include:

- The Lusk Corp (Bob Lusk, president), which began building in 1948 with $10,000 capital and grossed $12 million last year on sales of 1,000 homes (H&H, Jan.), is seeking SEC approval of $10,000 shares of convertible subordinated debentures due 1971, plus 200,000 shares of common stock and five-year warrants to buy 50,000 shares of common. Offering prices are not set yet. The Tucson-based company plans to 1) repay $750,000 of a $1,000,000 loan; 2) pour 50,000 common shares. Offering prices are not set.
- United Improvement & Investing (Jerome F. Katz, chairman) wants approval to sell 2.5 million of 6.5% convertible subordinated debentures due 1976. Proceeds will be used to expand the New York-based company's mortgage origination and servicing and its land development business. The company is also involved in title insurance, insurance, construction management and recreational club operation.
- First Natl Realty & Construction Corp, New York, wants to sell $5 million of 6.5% subordinated debentures due 1976 (with attached ten-year warrants to buy 540,000 common shares —90 per $500 of debentures). The company was formed in March 1966. buildings, and invests in housing and other realty. Robert Grunhit is chairman. Max Steinberg president.
- Shell homes companies are scrambling for public financing largely to cut the cost of financing and to states. Says United States Shell Homes of Jacksonville in its prospectus: "The availability of financing for its credit sales is the single most important factor affecting the volume of its business." ( president Carl W. Knoblock Jr was formerly a stockbroker.) wants to issue 8,000 shares of 5% cumulative convertible preferred, $100 par value. Modern Homes of Valosta (3,892 homes sold last year) is seeking registration of 5.5 million subordinated debentures and 550,000 shares of common. It will use part of the money to build in its wholly owned subsidiary, Modern Homes Finance Co.
- Western Shell Homes, Portland, Ore., has just sold 120,000 shares of common (at $2.50), will set up Western Acceptance Co to finance prefabs and components.

HOUSING'S STOCK PRICES

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<th>COMPANY</th>
<th>July 11</th>
<th>Aug 9</th>
<th>Sep 12</th>
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<td>Builder</td>
<td>Price</td>
<td>Bid</td>
<td>Ask</td>
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HOUSING STOCKS GAIN

The improvement from mid-August to mid-September, was not general. Most of the gain was attributable to S&L holding company stocks. These soared from August's 31.70 to 36.89 last month, a pickup of 16.4% in contrast to August's 0.2% dip. Every S&L stock on House & Home's list rose, reflecting a revival of investor interest now that the Administration's push to boost thrift institution taxes is dead for this year.

Real estate stocks posted a gain of 8.7% — from 11.6 to 12.3 in the index but all other categories went down. Biggest losers were shell home issues. The group index dropped 26.7%— from 18.81 to 13.78. Jim Walter plunged for the second straight month, this time from 39 to 28 bid. US Shell was also off sharply, from 26% to 20% bid. Stock analysts blame rising competition in shell homes and a cut in earnings of smaller concerns and leveled off Walter's profits.

Prebabs fell off 14.3% as a group, from 9.06 to 7.76. In comparison, Dow-Jones industrials gained a mild 7% (from 717.57 to 722.61) as did Dow-Quotations Bureau industrials (from 125.65 to 126.50.) Here are House & Home's averages, combining closely related stocks with bid prices for over-the-counter issues:

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<thead>
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<th>Building</th>
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Innocent buyer laws

continued from p 44

San Francisco ordinance passed last November requiring sellers to certify that property complies with all city codes. Violation can bring up to three months in jail and a $500 fine. Nearby Oakland and Richmond are following the San Francisco lead. Organized builders in Richmond persuaded the city to give houses a physical inspection and then stand behind it, putting the burden of whether a house complies on the seller.

Executive Vice President Bill Leonard of the Greater East Bay Home Builders says such laws are a "troubling stimulant" to build pre-fabbing and modular instead of traditional. The law predicts they will become standard in California. But enforcing such laws is difficult. Nearly one-third of sellers in San Francisco ignore the law, contends Deputy City Attorney Thomas M. O'Connor.

Hodgson Homes merging

Hodgson Homes of Dover, Mass., the nation's oldest name in prefabricating, is aiming to treble its market and get itself out of the real estate business.

Via a stock swap, control of the 70-year-old company has shifted to the Sundik Companies, Hartford building materials' distributors whose president, Leon Sundik, succeeds Kenneth W. Spalding as president. Spalding remains chairman but gives up his major control of the merged concern.

The Sundik Companies showed a profit of $200,000 in their last fiscal year against an $8,000 loss for Hodgson (on sales of $642,000). So the merger may well boost the price of Hodgson stock, bid at 306/share in August. C. J. S. Hodgson stock has run up a $218,000 deficit, leaving it with a sizeable operating loss carry-forward for use against future taxable income.

NEiPS continued on p 63
Santa Monica shows how to foul up land disposition, get builders to quit

Last March, Santa Monica got a wealth of proposals for redeveloping 36 acres of choice land along its Pacific Ocean beach, mostly into high rise apartments. The award was to be made in an open and fair land price, design, economic feasibility and financial responsibility of the bidder. Eleven companies bid for the prize, including most of the biggest names in the construction and design business. Bids ranged from $5.8 million to $9.9 million.

But now the project has, in the words of one contestant, "gone to pot." Reason: instead of picking one redeveloper in June as originally intended, Santa Monica officials asked for second bids and proposals from four entrants.

The other three refused to bid higher for the land, although some said they would change architectural details. No final award has been made as yet. The whole process has most of the nation's major redevelopers up in arms. They want to know:

What has prompted the city to demand second bids from developers?

Renewal Secretary Russell Priebce of Santa Monica offers three official reasons: 1) plan revisions were needed as a result of architectual and economic feasibility reports plus a change in the city's off-street parking ordinance; 2) FHA would not review all 11 proposals as originally planned, and 3) not knowing what it's doing." cries Deane.

As for the land prices, three of the original bidders have permitted wide local discretion, which backfired in some notable instances:

In San Francisco, a stormy competition for the $60 million renewal project included charges that the Honolulu mayor had "starving the slumlords out of business" by reassessing property to reflect sale values. Hilliard estimates that 20,000 of his 104,000 residents to vacate—including 154 welfare recipients paying $5,000 to $6,000 monthly rent. Hilliard, who says he's wanted to end this situation long admitted and deplored by welfare recipients," says Raymond M. Hilliard, who says he's wanted to end this situation long admitted and deplored by welfare recipients," says Raymond M. Hilliard. Hilliard's agency received over $20 million from a state retirement fund in mortgages on the project. Levitt's own bumbling record.) Here's how housing figured in the race:

News

New York election mixes housing, politics

New York Mayor Robert F. Wagner's successful—though mud-splattered—campaign for renomination illuminates how housing is becoming more and more entwined with big city politics. Wagner is already a long-time Democratic primary Sept 7, but he did so by such a big margin that he smashed now-unfriendly political bosses who had put him into office eight years ago. The actionhere is the distinction of running—and winning—against his own bumbling record.) Here's how housing figured in the race:

Echoes arose from the 1954 FHA windfall profit

"My department is most unwillingly the largest subsidizer of slums in our community through the rental allowances we make to welfare recipients," says Raymond M. Hilliard, Cook County's director of public aid. Hilliard estimates that 20,000 of his 104,000 families on relief live in slums. That means a substantial part of the $5.1 million the department pays monthly for rent goes to slumlords.

Hilliard, who says he's wanted to end this situation for years, finally cut off rent checks to slumlords, amid charges that the federal government is "a ground-breaking platform and a large sign bearing his name." Wagner retorted that while he was mayor enough housing units went up in New York City to house all of Boston with Denver thrown in.

But political experts figure one result of Wagner's smashing victory in the housing-dominated primary will be more stem behind subsidized middle-income rental housing in the nation's largest city.
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ARLINGTON PARK, Huntington, West Virginia, features year-round climate control with General Electric Weathertron® heat pumps, plus General Electric Major Appliances, lighting and Full Housepower. Thirty-seven homes were sold on opening weekend, and 80 have now been completed or are under construction.

ROBIN HOOD ESTATES, in Tacoma, Washington, featuring Gold Medallion Homes equipped by General Electric, has outsold all nearby competitors. These homes feature ceiling-cable radiant heat, dramatic Light for Living, Full Housepower and wonderful electric major appliances—all by General Electric.
Does the US owe Wink a rescue?

In Wink, Tex. (pop: 1,863), a passing motorist wouldn't be too surprised if he had to swerve to dodge a rattlesnake sunning himself on the pavement. The main street is so run down, Hollywood might reject it as a ghost town set on the grounds nobody would believe it. Born in long gone oil boom days Wink now withers in lonely decrepitude on the parched West Texas plain.

Wink is so clearly moribund that an enterprising Chamber of Commerce member got the bright idea in 1957 that Wink ought to try to get urban renewal aid. Federal men enthusiastically agreed to give Wink $891,868. Wink might become a model for other dying cities, they said.

Winkites went to work. By 187-5 vote they approved a renewal program covering 75 blocks. But small cities like Wink must pay 25% of the cost of renewal, and the town of Wink is poorer than an undeveloped nation.

Solution: the school district, gerrymandered townspeople to ask themselves the one question federal officials didn't ask:

Why save Wink at all?

Three of the first 11 property owners are planning to leave town. "A lot of people would have moved out a long time ago, only they didn't have any way to get the money to go," says one merchant. Muses the town's newspaper editor: "I'm just afraid we're going to end up with a well-laid-out city but no people."

Why save Wink at all?

The federal cash assured, Renewal Director Donald McBee, 28, has now bought 11 properties and optioned 92 more. But the first flow of cash into the hands of Winkites has caused townspeople to ask themselves the one question federal officials didn't ask:

Why save Wink at all?

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Four more big companies enter remodeling field

This newest rush by successful corporations testifies to what may grow into a management revolution in the home improvement business. The newcomers are just getting their feet wet in remodeling now. But their giant resources, plus those of other concerns already firmly entrenched, could in time provide the kind of competition which could drive the suelude-shoe operators from this market. The new remodelers:

- Boise Cascade Modernizers, a new division of sprawling Boise Cascade Corp (141 lumber yards in seven Western states). Boise Cascade, under General Manager Lowell O'Connor, is doing a complete rehabilitation job on a home in a Denver neighborhood rehabilitation project. The first house will be a showcase with more improvements than a homeowner normally would do. By pricing each improvement, the company hopes to show owners what they can do with an older house.

- Rock Island Lumber Co (32 lumber yards near Rock Island, Ill.) is starting a similar remodeling division.

- Armstrong Cork has bought the Philadelphia and Allentown operation of Herb Richheimer, flamboyant and successful operator who has lately concentrated on teaching others how to turn home modernizing into a coherent business (News, Dec).

- Consolidated Builders, Canada's largest with a $50 million annual volume, is opening a remodeling department. Initially, it will operate near the company's Toronto base.

But the new entrants are warned anew by Executive Director Julian Levi of the South East Chicago Commission that torpid FHA processing can make profits elusive. "Banks and savings & loan associations are able to decide loan application in a week to ten days," he told an S&L clinic in Chicago. "The FHA district office takes four months.

Some proof of Levi's point: it took Boise Cascade five months to get its first home rehabilitation underway. But the company says the experience gained would let it do the next one in two weeks.

PUBLIC HOUSING:

When do low-rent units switch to middle income?

So bad have vacancies become (7.5% of 6685 units) that the St Louis Housing Authority is campaigning to fill up 500 empty units. St Louis was one of 12 authorities criticized by the General Accounting Office for poor rental practices (News, Sept).

The Authority first raised income limits by 16 to 26%. Limits for a family of three or four persons rose from $3,500 to $4,400. For a family of five, they jumped from $3,900 to $4,900.

In calculating income, the Authority lets families deduct union dues, social security taxes, compulsory insurance, travel expenses, some medical costs, and babysitting costs for working mothers. With these deductions, the St Louis Globe-Democrat calculates "it seems reasonable to assume that half of St Louis families make less than $4,900."

Next the Authority sent a booklet advertising its "Best Bargain in Modern Apartments" to 500 St Louis employers. They were asked to tell their workers the Housing Authority now offers apartments to families who could not qualify before.

Instead, Executive Vice President B. C. Vine of the Millers Mutual Insurance Association of Illinois, fired off protesting letters
Civil Rights Commission demands President order ending race bias

This is the top priority item in a list of recommendations making up the strongest menu that anyone has yet suggested the housing industry swallow on racial bias.

How will this plea, the commission's, set up in 1957 to advise President Johnson on civil rights, get tougher about the Presidential order it first urged two years ago?

That plea has been ignored. President Eisenhower did not issue such an order before leaving office in January 1961. President Kennedy promised during his campaign last year that he would sign such an order. He has not done so (News, March) to avoid any stalling of his legislative program in Congress.

Now, the commission, in an open play to force the issue to a head, almost triumphantly harks to the Democratic platform pledge for an executive order. "The need still exists," says the commission bluntly.

The proposed order would crack down on bias by lenders holding 60% of all home loans.

The commission wants the order to apply to the entire range of government agencies concerned with housing and home mortgage credit. Going far beyond just to FHA and VA loans, it would cover:

1. The 4,694 savings and loan associations supervised by the Home Loan Bank Board because they are either federally chartered or members of the Home Loan Bank System. They hold $58.5 billion in non-farm mortgages.
2. All 4,098 savings and loan associations insured by the Federal S&L Insurance Corp.
3. All 4,537 national banks regulated by the Comptroller of the Currency.
4. All 6,174 banks that are members of the Federal Reserve System.
5. All 13,451 commercial and savings banks whose deposits are insured by the Federal Deposit Insurance Corp. They hold $41.8 billion of home mortgages.

Says the commission of these private levels of the housing and home finance industries—from the builders and the lender to the real estate broker and often even the local housing authority.

The commission demands a Presidential order "stating the national objective of equal opportunity in housing and specifically directing all federal agencies concerned with housing and home mortgage credit to shape their policies and practices to make the maximum contribution to this goal."

To backtrack this Presidential directive, the commission urges the government "either by executive or Congressional action, take appropriate measure to require all financial institutions engaged in a mortgage loan business that are supervised by a federal agency to conduct such business on a non-discrimination basis, and to direct all relevant federal agencies to devise reasonable and effective implementing procedures."

FHA, VA, and FNMA would tighten rules for builders and lenders.

The commission demands that FHA and VA "on a nationwide basis" insist that builders and developers halt discriminatory lending practices. This would strike at the practice of some FHA southern offices of letting builders control Negro or white occupancy levels of the housing and home finance industry. FHA, VA, and FNMAC would require lenders to certify they follow non-discrimination policies before they become eligible to sell mortgages to FNMA.

The President is also urged to allow FNMA to buy mortgages on open occupancy housing under its more attractive special assistance provisions.

Result: lenders would be under pressure to make loans they consider unsound.

*Chairman John A. Hannah, president, Michigan State University. John M., chairman; Robert G. Stacey, Southwestern Legal Center; Erwin W. Griswold, dean, Harvard University Law School; Rev. Theodore M. Hesburgh, president, University of Notre Dame; Spottswood W. Robinson III, dean, Howard School of Law; Robert S. Rankin, Duke University, Dep't of Political Science. Doyle E. Carlson, George M. Johnson, and John S. Battle resigned during the past two years.

**AN ALL TOO POPULAR** Idea of a public housing site was the topic suggested to the Civil Rights Commission for this drawing. It was omitted from the final report.
Plumb Perfect!

In less than 10 years, the dependability of SCOTTIE by-pass hardware has made it the favorite of good builders all over the nation. Now — SCOTTIE's gone automatic!

New SCOTAMATIC is a remarkable hanger that dials door height up or down for perfect plumb. Leverage does the work — quickly, accurately at the touch of a finger. No tools necessary. Surprisingly, this significant development (first finger dial adjustment in the industry) does not add one cent to the low SCOTTIE price. Please read the next page for details.

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A Subsidiary of EKCO Products Co.
Same Scottie By-Pass Track Set
At the Same Low Scottie Price
Now, with...

Dial Adjustment

It's plumb perfect! The dependable, smooth-riding Scottie you've known for years now has the simplest hanger adjustment on the market—Scotamatic dial adjustment—at the same low Scottie price you've always paid!

Scotamatic leverage raises and lowers a 75 lb. door at the touch of a finger, without the use of tools. And it's exact! Because it's calibrated for \( \frac{3}{8}\) hi-low travel, you can dial precise door height for perfect plumb, and lock it firmly with one screw. Homeowners can make their own minor adjustments. You save on installation time and eliminate "make-good" call-backs. Send for detailed specifications and prices today!

New Scotamatic Series 2050SM, in standard and fascia styles, for by-passing \( \frac{3}{4}\)" and \( \frac{5}{8}\)" doors up to 75 lbs.; Series 2025SM for 1" and \( \frac{1\frac{1}{4}}{2}\)" doors; Series 2075SM for 1 1/4" doors. Exclusive Scotamatic dial adjustment to \( \frac{3}{4}\)" up or down. Nylon floor guide adjusts to fit any door from \( \frac{3}{4}\)" to 1 1/4" without cutting; won't slip; holds to any surface. Full 1" low-friction nylon wheels run on grease-grooved axles. Heavy aluminum track keeps wheels on rails, yet allows quick door installation or removal.

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Same low Scottie price—pay no more!
Its fume and vapor removal system is built into the range itself!

A tremendous profit opportunity is yours in The Air Conditioned Range. For here is unprecedented sales appeal... deriving from brand new, very important range benefits that your customers will find nowhere else:

**Completely odor-free cooking** — All fumes and vapors are removed within the range-top and oven. Even onions fry in an open skillet with no detectable odor in the room!

**Quietness** — The Air Conditioned Range is several times quieter than conventional ventilators. The power unit is centrifugal, resilient-mounted, and remotely located inside the range base cabinet... does not interfere with even normal conversation.

**Exclusive range cover** — When closed, the lustrous cover beautifully conceals the stainless cooking area, providing extra counter space. At the touch of a button the cover raises to reveal four front elements, and then becomes a splashguard to protect walls and decorations.

**Freedom of kitchen design** — By eliminating overhead ventilating apparatus, The Air Conditioned Range opens up dramatic new design concepts. Wall cabinets can be carried full length directly above the range in a beautiful, sweeping, unbroken line. Or, for an open spacious effect, the range-top can be located in islands or peninsulas... with no overhanging obstructions.

**Lasting beauty** — Classic simplicity gives The Air Conditioned Range-Top and Oven a look of quiet elegance that quality-conscious kitchen and home buyers will be quick to appreciate.

**Installation Ease and Economy**

Single-unit installation with only one mounting and one electrical outlet for both cooking and ventilating saves time and money, and so does the simplified down-and-out ducting.

The Air Conditioned Range is “tomorrow’s concept in cooking”... for profitable sales today! Write for complete brochure and the name of your Jenn-Air Distributor.
borhood, they appear to believe, may predictably cause a decline in property values.

The official views of FHA, VA, FNMA, and the Voluntary Home Mortgage Credit Program. Adds the Commission: "Moreover modern real estate opinion, supported by several studies on the relation of race and property values, tends to cast doubt on the view that the one necessarily affects the other."

HLBB now intends to use examiners to police a new bias ban.

When the Civil Rights Commission started pushing the HLBB on racism in 1944, the Board took the first official stand on race bias since it was set up in 1933. It "opposes discrimination, by financial institutions over which it has supervisory authority." Chairman Joseph P. McMurray of HLBB said the resolution has been sent to all HLBB examiners 'for their guidance.' If discrimination were found by examiners, the Commission says, "supervisory action would be taken to abolish it."

FHA, VA, and FNMA are castigated for paying only lip service to integration.

None of these express official opposition to racial segregation, the Commission says. Yet "none of them has taken effective steps to insure that the benefits they offer are made available without regard to race," says the Commission.

Both FHA and VA say they will refuse to do business with builders who violate state anti-discrimination laws, but this has "not yet actually been applied in any case," says the commission. This policy also leaves builders in states without anti-bias laws free to discriminate, says the commission.

FHA and VA are also accused of selling homes on which they have foreclosed "on a segregated basis. Negro buyers and brokers were rebuffed when they tried to buy FHA-owned homes in Pennsylvania and New Jersey."

The commission notes FHA Commissioner Neal Hardy refuses to move further against segregation without a specific order from the President. "As FHA's "no policy" are now legendar," asserts the commission: "FHA added impetus and strength to the growth of all-white suburbia."

URA should make greater efforts to rehouse minorities, end bias in new projects.

The commission says only 70% of Negroes forced to move by renewal have moved to standard dwellings, compared to 79% for whites. In many cities the bulk of displaced Negroes move to other neighborhoods designated for renewal.

Cleveland suburb bans blockbusting

Last spring Negroes started moving into a southeast Cleveland neighborhood adjoining the suburbs of Shaker Heights and Warrensville Heights. Immediately suburban homeowners started getting repetitious phone calls and mailings urging them to list their homes for sale before the "neighborhood goes all Negro."

Determined to fight the war of nerves, swank Shaker Heights (pop 36,460) has just passed an ordinance making anyone using such blockbusting tactics liable to a $50 fine for the first offense, up to $500 for additional violations. It is now illegal to "incite, arouse, or refer to neighborhood unrest, community tension, racial, religious, or nationality change in any manner, with official views of the purpose for or in connection with soliciting or inducing or promoting the sale or lease of real estate." Warrensville Heights (pop 10,609) is debating a similar law.

"This is intended to stabilize areas so property values don't collapse."

So says Law Director Walter Kelly Jr, of Shaker Heights. He forecasts that the practical effect will be to cause unethical real estate agents to have second thoughts about such scare tactics, and to give homeowners a ready answer to callers. Kelly says complaints have dropped considerably since debate began on the ordinance.

If the beginning of problem solving is frank discussion, Shaker Heights got a big assist from Cleveland's newspapers.

Before the ordinance passed, the Cleveland Press ran a sophisticated series on what blockbusting means to both whites and Negroes in the transitional neighborhood near Shaker Heights. Samples:

• Change began on "Black Sunday" last spring, when carloads of Negroes drove through streets, ringing doorbells, and asking if homes were for sale. "A sort of fever came over the street after that," recalled one owner.

• We got four to six calls a day from real estate men asking if our house was for sale," said another owner.

MATERIALS & PRICES:

Are building costs heading for more inflation?

The latest evidence is disquieting:

Cement prices, whose slow price adjustments make them a key long-term indicator, are going up for the first time in two years. One company has increased aluminum siding prices. And fears that an Oct 1 wage increase in the steel industry will produce higher prices, not only in steel but throughout the economy, led President Kennedy to appeal to presidents of 12 steel companies to hold the price line.

Another straw in the wind: government schemes to end the recession practically assures an inflationary budget deficit for the current fiscal year.

"There is worry, and rightfully so, that we could be in for another round of inflation," says Chairman Melvin H. Baker of National Gypsum Co. "My own view is that prices will rise from 2% to 3%," Col E. H. Boeckh, the construction cost specialist, says low housing volume is dampening the total demand for materials. "To sell, manufacturers have been cutting each other's throats," says Boeckh. So built-in wage increases aren't yet driving material prices up. He doesn't expect major price changes until the first of the year, but his construction cost index (see graph) stands at an all-time high. If housing volume improves (as it seems to be), Boeckh foresees a 4% boost for the level of materials prices.

Cape Cod Seasheer Park to halt builders' march

The new law converting the lower (ie, forthest out) Cape into a National Seashore Park marks the first time a national park has been created in a prime resort-homebuilding area instead of a wilderness. But builders of the Cape Cod park wanted to keep the dunes, marshes, and woodlands on 26,670 acres intact from further development (News, Jan '60).

The park will include 14 miles of shoreline on Cape Cod Bay and the 39-mile Great Beach on the Atlantic Ocean — the beach whose lovely splendor moved Henry Thorpe to observe: "A man may stand there and put all America behind him."

SOURCE: E. H. BOECKH & ASSOC

MATERIALS PRICES dipped 0.3 point in August to 130.2. Suggesting lumber prices dragged the BLS index down (as they have all year). Producers posted price increases in August (from $64 to $68 for 4'x4' AD plywood) but weak sales led them to cancel the boost. The price dip in lumber was offset by gains in prices of gypsum (up 2.7 points on its own index) and plumbing equipment. A year ago the index stood at 131.4.

SOURCE: BLS

CONSTRUCTION COSTS for housing continue to inch upward, rising 0.1 point to 292.3 on the E. H. Boeckh index. Col Boeckh blamed increased labor costs for the entire rise, and predicts no relief in sight for homebuilders. "Labor costs have been cutting each other's throats," says Boeckh. So builders' march prices aren't yet driving material costs up. He doesn't expect major price changes until the first of the year, but his construction cost index (see graph) stands at an all-time high. If housing volume improves (as it seems to be), Boeckh foresees a 4% boost for the level of materials prices. NEWS continued on p 73

SOURCE: BLS

INDEX: 1947-49 = 100

1940 1960 1961
NEW! URETHANE VARNISHES SAVE TIME, CUT COSTS, GIVE TWICE THE WEAR

Kids—and customers—needn’t “baby” floors finished this new way ... with urethane varnishes based on Du Pont HYLENE® organic isocyanates. These remarkable new finishes outlast any conventional varnish 2 and 3 times over, combine high gloss retention with surprisingly easy upkeep! Yet, for the homebuilder, they’re easy and quick to apply (can be formulated to dry in minutes), require no special skills or tools! Result: substantial savings in time and labor.

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Perfect for stairways, doors and partitions as well as floors, new urethane varnishes are available in formulations to meet your exact requirements. You’ll like the profitable difference they can make! The Elastomer Chemicals Dept. of Du Pont produces only the key ingredient, HYLENE; not the floor finishes themselves. For more information, plus list of suppliers, write: E. I. du Pont de Nemours & Co. (Inc.), Elastomer Chemicals Dept. HH-10, Wilmington 98, Del.

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Former NAHB staffer Canavan set to head technical FHA standards

The likeable Richard J. Canavan, 39, will soon return, according to informed sources, after a year and a half absence from Washington to become assistant FHA commissioner for technical standards.

The post is a key spot in housing technology. Local building officials and the nation's four model code groups* look to FHA's technical standards for guidance in deciding whether to accept or reject a new product or construction method. Many manufacturers say FHA approval is essential for successful marketing of a new product.

Canavan worked closely with FHA Commissioner Neal Hardy when both were staff members of the Natl Association of Home Builders. Hardy hand-picked Canavan, who would fill the last top vacancy at FHA, and steered his career on a path of promotion.

Canavan leaves as general manager of Unibuilt Components Co of Omaha, a subsidiary of Decker Enterprises of Omaha and Phoenix. Canavan joined Unibuilt when it was organized as a maker of roof trusses, walls, and kitchen cabinets in May, 1960.

Before that he served six years as assistant director and director of NAHB construction department. His work in studying ways to build more efficiently earned him a national reputation as an authority on home design and construction.

Before joining NAHB, Canavan had been technical director of the Producers Council and district manager for both Insulux Division of Owens-Illinois Glass Co and Ingersoll Steel-Borg Warner Corp. He is an architectural engineering graduate of Iowa State College.

MARRIED: Joseph P. McMurray, 48, chairman of the Federal Home Loan Bank Board, and Mrs Rose-Marie Barker, widow of a Long Island banker, both for the second time, Aug 26 at Garden City, N.Y.

* Building Officials Conference of America, International Conference of Building Officials, Natl Board of Fire Underwriters, Southern Building Code Congress.

Searles gets high paying renewal job

"I usually move on to a new challenge after five years on a job," says Detroit-born, Princeton-trained John R. (for Rumney) Searles. "I've been in Washington ten years.

Searles' new challenge will be directing Syracuse's private Metropolitan Development Association and taking part in an urban-affairs program at Syracuse University at a salary double the $16,790 he got in Washington.

Searles, 49, became executive director of the District of Columbia Redevelopment Land Agency in 1951 just after it had been created as a semi-autonomous agency by Congress. Under Searles' leadership the agency has increased its staff to 90, now has projects covering 631 acres, has cleared and resold 58 acres for $9.9 million.

But Searles found himself saddled with an awkward administration with uncertain lines of authority. As a result great patches of Washington's 549-acre Southwest project sprang up in weeds just blocks from the Capitol. Concerned Congressmen pushed a bill through the House last year to halt all district renewal until the Southwest is rebuilt, but the measure died in the Senate.

The bombed-out look held back renting of Southwest's first show-piece apartment, Jim Scheuer's Capitol Park townhouse. A building like Scheuer's townhouses and Webb & Knapp's Town Center (home of HHFAdministrator Weaver) are filling faster.

"Searles has an awareness of design and community planning that continued on p 74.

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Turn the page for "R"...
S&Ls are paying too much for their deposits now, he contends. There is a tendency to go along willy-nilly, paying whatever competition and other factors dictate. The course of least resistance is to pay more to get depositors' money. Instead of stressing high dividends, says Cramer, S&Ls should put more emphasis on merchandising services. "We must be primarily a service industry rather than just money brokers," he says.

Too few S&Ls make full use of the powers they now have under their charters to offer services to the public. An example of Cramer's thinking is the practice of his own S&L which, in addition to the usual deposit-and-mortgage-loan traffic, offers services ranging from foreign drafts, gift checks, and passbook loans to money orders and safe deposit vaults. "The boys are constantly kicking around ways we can add to the list within our charter," he adds.

S&Ls have remained too oriented to financing suburban houses. So they are not alert enough to the possibilities in financing houses and small apartments in the city, or to remodeling loans. "The trend to the suburbs has slowed down," he says. "A lot of people either prefer to remain in the city or are coming back."

Cramer has just returned from South America where, as a consultant for the International Cooperation Administration, he set up Ecuador's first S&L. This involved not only the S&L itself, but also creating a housing bank (similar to our Home Loan Bank) and writing the enabling legislation. Cramer found he had to add a Latin wrinkle to his project: because of the native fondness for lotteries, a provision was written into the S&L by-laws for a twice-a-year lottery in which every depositor participates.

A New Yorker for 33 years, Cramer still retains a trace of his Chicago Photographers

Famed urban renewal team splits up

Renewal Builder Jim Scheuer (l) has bought out his partner, Roger Stevens (r), in the $12 million Washington Southwest Area B project. Each had a 50% interest in some 1,700 apartments built or under construction there, including the handsome 402-unit Capitol Park Apartments (lars, July). The sale was through stock transfer. Both principals declined to reveal the dollar value.

The Washington split completes separation of the Scheuer-Stevens renewal interests. Scheuer bought Stevens' half of Sacramento's Capitol Mall, a $15 million project, a year ago. Scheuer's Renewal & Development Corp is also redevelopment projects in Marin City, Calif., St. Louis, and New York City. Stevens' career in real estate includes deals in most major cities, such as forming a syndicate to buy the Empire State Building in 1951 and heading a firm leasing more than half of all first-class office space in downtown Seattle. His major renewal interest now is building a hotel and business center at New Haven's 100% downtown "business corner as part of the Church Street project. He has also produced plays (Tea and Sympathies, Peter Pan) on Broadway.

A Sec 220 commitment for $6 million issued to Builder Marvin S. Gilman last month completes his transition from a builder of single-family homes to sponsor of high-rise apartments in urban renewal areas—a field being invaded more and more by one-family builders.

Gilman and his Renewal Planning Associates Inc. got FHA's go-ahead to build 16-story Sutton Place, first high-rise apartment in a decade in downtown Baltimore. The 300-unit building is in the Mount Royal Plaza renewal area.

Lawyer Gilman, now 39, got into homebuilding after World War 2 in Long Island's booming market. In 1954 he started 200 houses, later expanded to the Washington area. In 1956, he helped organize builders into Long Island Neighborhood Renewals Inc. to renovate a 28-family Glen Cove slum (lars, April '56).

Last month, Col Hugh Askew turned 63 and became the first NAHB employee to retire. As head of the association's mortgage department, he was called upon by builders in all parts of the nation to trouble-shoot their FHA problems. He showed builders how to run an FHA district office that his frank (and unofficial) instructions often nettled mortgage officers—but solved the problems.

Col Askew left FHA's ropes as Oklahoma FHA director after World War 2. He pioneered low-cost and cooperative housing in the Southwest so effectively that he was promoted to assistant FHA commissioner in charge of field operations in 1952. He joined NAHB in 1954. He will become a consultant in mortgage finance in Oklahoma.
A "leading light" for sure! The U-ALL is so versatile that one housing takes 67 front and trim variations... including 18 different lenses: flush, louvered, conical, skirted, drop bowl, eye ball, pinhole, directional. It handles any lighting job from dramatic accents to general illumination.

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Turn the page for "O"...
The death of Nathan Straus Jr, at 72, deprives housing of one of its most consistently controversial critics.

It is 19 years now since Straus resigned after 4 1/2 stormy years as the first head of the federal public housing program. But housing remained his pet cause—and Straus' tongue and pen were as sharp as Proust's in capturing the import of his sometimes penetrating, sometimes preposterous views:

- "The US Housing Authority is so good and so efficient that it should solve our housing problem." (1942)
- "One simple idea is the beginning of wisdom in urban redevelopment. When no more than 25 families live on one acre of land, everyone has plenty of room... Yet the lowest density [New York] slum clearance propose is 63 families an acre." (1951)
- "During the postwar years when adequate housing construction might have reduced the shortage. American building enterprise failed." (1952)
- "Every American slum mocks the idea that private enterprise meets the real need for human shelter." (1952)
- "The housing built today, whether for rent or for sale, is beyond the means of two-thirds of the population." (1952)
- "Our present approach [to slum clearance] is crazy. All the recent fuss about Title I, which brought some changes in procedures, makes me think of a fellow who has cancer and they're treating him for dandruff." (1959)
- "It's good business to develop decent, economically sound communities with government aid. That's better than what we're doing now. We're subsidizing slums with relief payments which in turn go to slum landlords." (1959)
- "It's a good business to develop decent, economically sound communities with government aid. That's better than what we're doing now. We're subsidizing slums with relief payments which in turn go to slum landlords." (1959)

Straus grew up under the handicap of being the son of a wealthy man, distinguished in business, philanthropy and public life. His father (and his uncle) owned Macy's department store in New York. When he came of age, Straus took over the family business, and became part owner of Abraham & Straus in Brooklyn. Nathan Jr was born May 27, 1889 in the family mansion on Manhattan's West 55th St. He interrupted his college career at Princeton for 18 months at Heidelburg University, but returned in 1909 to receive from the hands of Princeton's president, Woodrow Wilson, a special degree cum laude. "I was enormously influenced by Wilson at college," Straus recalled later. "Wilson was a born rebel. I put him at the top of the list for the 20th century."

Straus' first job was as a reporter on the old New York Globe, at $14 a week. He had to leave the Globe when his father became ill, and go to work at Macy's. But in 1914 he purchased $15,000 a year, a horridly weekly magazine and edited it for three years before joining the staff of the Washington Times. In 1917 he enlisted in the Navy, which later made him a surfing hero among his shipmates. After World War 1, he returned to the Globe as assistant editor. Soon after his return in 1920, he wrote a paper backed Warren Harding for president and denounced the League of Nations, which Straus favored. Straus, a Democrat, winning a seat in Congress, moved east at 25 and became a New York County district attorney. When no more than 25 families live on one acre of land, everyone has plenty of room... Yet the lowest density [New York] slum clearance propose is 63 families an acre." (1951)

That year, Straus entered politics as a Democrat, winning a seat in the New York State Senate. While speaker of the Senate (until 1926), Straus first became interested in housing legislation. In 1933 he organized a limited dividend corporation and built Hillside Homes in the Bronx on a family tract of about 10 blocks to try out some of his housing theories. Straus called the 1,415-unit project "the largest private, medium-priced housing project in the world."

When President Roosevelt appointed him as the first administrator of the US Housing Authority in 1937, Straus gave up (as the law demanded) directorship of several businesses and $40,000 a year in salary but quit just before he was strapped of $10,000. He did not give up, as Senate committee questioning shortly brought out, ownership of 100% strip of commercially zoned property fronting Hillside Homes, which had been built with a $4.9 million federal loan and $400,000 of equity money. Straus explained to the senators that he had sold the rest of his land to the project at very low prices and that the following private development of adjacent property would encourage private interests to sell land cheaply for public housing. Almost from the day he took office, his official career was rock-strewn. It started with the virtually public opposition of Interior Secretary Harold Ickes, who favored other man named housing administrator so Ickes could exert more control over the Housing Authority. Almost at the same time as the construction of subsidized projects. But Straus got housing built. By the time he resigned in January 1942, some 100,000 families were living in public housing projects. 200,000 slum units had been torn down, and 545 localities had $839 million worth of public housing built or abuilding.

And Straus had brought into the agency some of the men and women who have been Penetrating & preposterous leaders for a generation—Catherine Bauer, Warren Vinton, Leon Keyserling.

Saarinen never popular on Capitol Hill. After 1938, he was unable to wheedle any more money out of Congress, which also kept cutting out the housing's operating budget. When defense housing began going up in 1940, Straus geared public housing to defense needs and used up the last of his money. Meanwhile, a $300 million defense housing appropriation bogged down in Congress because of opposition to Straus. Finally, as he prepared to step down, Straus decided "to sacrifice myself to save the USHA." His letter of resignation to President Roosevelt said "the ownership and operation of slums one of the largest, most profitable industries in America," and added: "this industry has decreed that the public housing program for the low income families of the slums. If this can be done, the housing program now will be considered an emergency when the war is over. Meanwhile, the USHA and the 600 local authorities would be allowed to die."

Straus' resignation presented his prophecy from coming true. Instead, public housing went on to play a big role in wartime construction, which left it a bureaucracy to be reckoned with ever since.

In 1943, Straus plunked down $1,255,000 to buy radio station WMCA in New York City. He was chairman of it when he died in a plane crash on a trip to Long Island in 1952, apparently of a heart ailment. He wrote two books, "The Seven Myths of Housing" (1942) and "Two-Thirds of a Nation—A Housing Program" (1952).

Architect Eero Saarinen dies at 51 after brain surgery

When the doctors operated it was too late. A malignant brain tumor ended the versatile career of Architect Eero Saarinen, 51, on Sept 13, in Ann Arbor, Mich. His daring experiments with form made some of his work controversial—but it all added to his USHA fame.

Although he was influenced greatly by his father, Eliel Saarinen, Finland's top architect, and Ludwig Mies van der Rohe ("less is more"), Saarinen was handicapped to no school, resisted set style and formula. He eschewed the strict functionalism that dominated the international style, frequently drew on antiquity for inspiration. "We must create," he observed, "but we must bring back some of the great awareness that existed in the past, expressed in our own forms and technology."

Architect Eero Saarinen, at 51 after brain surgery, was a shaggy, bespectacled man of medium (5'8") height and an intense smoker (mostly pipes),
Saarinen's casual demeanor masked a dedicated appetite for work. He demanded perfection, sometimes made thousands of drawings of a particular problem until, by exhaustive elimination, he hit on the solution he was after (in sketching elevations for the embassy, he would use up to 170' of tracing paper a night making drawings at home).

Eero (rhymes with arrow) Saarinen (rhymes with far-'n-then) was born in Finland. His father, Eero Saarinen (rhymes with far-'n-then) brought the family to the US in 1923 when Eero was 12. After graduating from Yale (where he was born in Finland. His father Saarinen (rhymes with far-'n-then) made Eero Saarinen & Associates one of the most sought-after architectural firms in the US. Among major monuments to his genius: the General Motors Technical Center at Warren, MI; the TWA Terminal at Idlewild Airport, New York; Dulles International Airport terminal building near Washington; the auditorium and chapel at Massachusetts Institute of Technology; the Jefferson National Expansion Memorial now being built at St Louis. He was also consultant for the Air Force Academy at Denver and collaborated on the Lincoln Center for the Performing Arts in New York.

Saarinen also was noted for his designs (with longtime colleague Charles Eames) of organic furniture, fashioned of molded wood. Best known: the "womb" chair. Saarinen also designed chairs and tables on pedestals in an effort to, as he put it, get away from the "slum of furniture legs" in homes. Saarinen, who became a naturalized citizen in 1940, was divorced from his first wife, Lillian Swann, a sculptor, in 1953. They had two children. The next year he married Aline Bernstein Louchheim, then associate art editor of the New York Times. They have a son, Eames.

DIED: Albert G. Koch, 77, Cincinnati builder (more than 1,000 homes) and real estate man, past president of the Home Builders Association of Greater Cincinnati and an NAHB director, Aug 20, at Cincinnati. Maxwell Smolens, 74, retired vice president of Albert M. Greenfield Co, giant Philadelphia realty concern, and former board member of Bankers Bond & Mortgage Co., Aug 26, at Broomall, Pa.; Charles B. Bennett, 67, noted municipal planning consultant, twice president of the American Society of Planning Officials, former (1941-54) planning director of Los Angeles and framer of the city's first comprehensive zoning code, former Milwaukee planning director, Sept 7, at Los Angeles; Mortgage Banker Howard J. Ludington Sr, 67, president of H. J. Ludington Inc of Rochester, vice president of William L. Pfeiffer Co, New York City mortgage bankers, and former (1958) member of the Voluntary Home Mortgage Credit Program committee, Sept 10, in Rochester.

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For more information about Silaneal and how it will help you build better brick buildings, write to Dow Corning Corporation, Department 5422, Midland, Michigan.

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Letters

Environmental planning

When I received my copy of the July issue of House & Home, I marked the Round Table discussion on land planning for future reading. At long last I have had a chance to read and digest the report. It is certainly a very interesting and thought provoking one, full of excellent ideas and objectives which, for the most part, seem to be desirable.

As always, the real question is how these goals can be implemented and achieved. Clearly, the delineation of the issues, as the Round Table did, is a step in that direction. And equally clearly, it is only a first step.

Despite the fact that I share with you the realization of the immediacy of the problem, I cannot in candor be optimistic relative to the speed with which effective machinery can be developed to deal with it. Discussions, such as that in the July issue of House & Home, should develop support for realistic approaches.

Robert C. Weaver, HIIA Administrator
Washington, D.C.

... Your comments were interesting, worthwhile, and informative. In my observations of city development, I have seen that very little thought is given to environmental planning by the various groups dealing with urban development. . . . I wish to commend you on your approach and hope that you will continue to give thought and study to this matter as there is no doubt that through lack of proper planning and management our urban areas are wasting land.

Felix K. Drainin, landscape architect
Minneapolis Board of Park Commissioners

Housing Act

I would like to congratulate you for the fabulous job on the interpretation of the Housing Act of 1961 [Aug News]. We made it requisite for all our executives to read as it is the first time we have been able to understand fully the Housing Act in layman’s language.

Charles Abrams, president
Richheimer Modernizing Systems Inc
Long Island, N.Y.

Aloha!

I feel like I have been on a trip to Hawaii. Thanks for taking me along [HAH Aug]. My previous impressions of Hawaiian housing were confused.

W. Hamilton Crawford, president
Crawford Corp
Baton Rouge, La.

Success story

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Al. McBride, realtor
Redondo Beach, Calif.
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SOUTHERN PINE
It's dry...pre-shrunk...from the mills of Southern Pine Association.

THE FEDERAL H&HFA says that the requirements for an all purpose, full-length stress-rated grade to use in trusses and light framing is "most nearly approached today in SOUTHERN PINE."

"For trusses, wall units, and joisted floors... even for most of the interior and exterior finish... we use Southern Pine exclusively. That way, we save time and money, and still satisfy the most discriminating of our Miller Home Buyers."

SOUTHERN PINE ASSOCIATION
P. O. BOX 1170, NEW ORLEANS 4, LA.
Please send the following technical bulletins:

- Stress Grade Guide
- Trussed Rafter Data
- How to Specify Quality Southern Pine

NAME
FIRM NAME
CITY

ZONE
STATE

HOUSE & HOME
Newest way to give sales-winning beauty to your homes! For exterior and interior interest, more and more builders are turning to concrete grille block. Available now in hundreds of different patterns, this modern decorative masonry gives a fresh, custom look to accent walls, carport walls, sight and solar screens, and even space dividers. Here’s a simple, low-cost way to excite buyer interest. And concrete’s easy upkeep and long life are additional sales points. Grille block is one more example of how builders can use modern concrete to give homes that vital extra sales attraction.

PORTLAND CEMENT ASSOCIATION

... a national organization to improve and extend the uses of concrete

watch for

Horizon Homes Program
All the selling points for wood in the den can be seen in this picture, taken from an NLMA advertisement in LIFE. It emphasizes wood's universal appeal, both as a basic building material and as a beautiful, useful, and lasting decoration.
Because wood in the den appeals to men

WOOD sells the rooms that sell the house

A den of wood can make the difference between an ordinary home and an irresistible buy. It's masculine, yet appeals to every member of the family. That's why the den is a builder's asset, the clincher for many a sale. To sell the den that sells the house, there's nothing in the world like wood. Its beamed ceiling looks both strong and handsome. Its paneled walls of wood promise privacy. And, in or out of the den, doors, floors, windows, and built-ins of wood add obvious value to your houses, without adding to their cost. Any or all of the uses of wood will help convince your prospects that the homes you build were designed for them to live in.

Does the illustration on your left look familiar? It should, because it appeared as a full-page, full-color NLMA advertisement in LIFE not long ago. Millions of people—your prospects among them—saw it. They will be looking for wood in the dens you show them. For more information on better homes of wood, write:

NATIONAL LUMBER MANUFACTURERS ASSOCIATION
Wood Information Center, 1319 18th St., N.W., Washington 6, D.C.

Built of wood means built to sell
Tomorrow’s window

MODERN!

WABASH

VISTA

DISTINCTIVE VISTARAMA CASEMENT WINDOWS—with exclusive Vistarama removable framed grids. Slimlined elegance combined with a smart decorator touch.

YEARS AHEAD of all other windows—Vistarama leads in design, engineering and construction. Quality craftsmanship combines with “new idea” features to make Wabash Vistarama the wood window line that sells on sight.

The Wabash Vistarama line, with its new dimension in styling, offers you windows to sell for every home, every room. Not shown above are Vistarama Panel Windows . . . versatile units that install in countless groupings; can be used as awnings, hoppers, fixed units or as economy casements. And gracious Vistaview Picture Windows combine with any ventilating unit in charming combinations.

All Wabash Vistarama units are crafted of preservative-treated Ponderosa Pine . . . backed by 75 years of Wabash woodworking skill. Get all the facts on this modern line of quality wood windows—learn how you can fit Wabash Vistarama Windows into your summer and fall starts, and to remodeling projects. Learn how adaptable these units are to a variety of designs. You’ll find prospective home buyers will appreciate the extra quality of Wabash Vistarama Windows.
features...here today!

RAMA WOOD WINDOWS

MODERN VISTARAMA PICTURE-AWNING WINDOW—for a picture view and fresh air, too. Fixed upper sash, ventilating lower sash in a single Vistarama unit.

Typical Vistarama advanced design features:
MORE WEATHER-TIGHT—neoprene weatherstrip, applied to the frame for tighter seal. Retains flexibility at temperature extremes; will not deteriorate.
RIGID CONSTRUCTION—assures permanently square frames. Glued and pinned slot and tenon construction.
WOOD BEAD GLAZING—glass set in glazing compound; anchored with attractive wood stops. Tighter seal; faster and easier to replace.

WHERE TO BUY
Wabash Vistarama Windows are sold through reputable millwork jobbers and lumber dealers in your area. For the name of your nearest jobber or dealer, write WABASH VISTARAMA at the address below.

WABASH SCREEN DOOR COMPANY  1217 Florida Street · Memphis 6, Tennessee

OCTOBER 1961
This extra door opens all this extra living space ... 
and new sales opportunity for you!

it's the New 
Convertible-Garage-Room

by OVERHEAD DOOR CORPORATION

Now as little as $50 extra builds your biggest bargain in space—a garage that converts for living! By matching the “OVERHEAD DOOR” in the front of the garage with another in the back, you create a “Convertible-Garage-Room” with many appealing uses.

Look at the extra sales appeal you add to your homes when you offer this extra space your prospects want and need! The extra space can be play space—a comfortable breezeway extension to a rear patio, an ideal place for children’s games. It can be work space—a bright, well-ventilated shop for work or hobbies. And it can be even handier storage space than the ordinary garage because the extra door opens wider access to the back yard.

Yet a “Convertible-Garage-Room” costs as little as $50 more. Labor and materials saved in the backwall make up most—sometimes all—the cost of the extra door. Also, you get increased evaluation for your homes.

The “Convertible-Garage-Room” idea is a contribution to home selling by Overhead Door Corporation, maker of the original “OVERHEAD DOOR”—the easy-rolling sectional door that opens and closes without argument. It’s the door that’s guaranteed by the reliable factory-trained expert who installs it—your local “OVERHEAD DOOR” distributor. See him soon . . . and see the exciting sales tools he offers you FREE to help you make the most of this sales-promoting idea. Find his name listed under “OVERHEAD DOOR” in the white pages of your phone book. Or write Overhead Door Corporation, Dept. HH-110, Hartford City, Indiana.

Doors front and side can give you a “Convertible-Garage-Room,” too. It’s an ideal application for an attached garage-breezeway, as shown in this floor plan. Cabinets along the walls provide attractive, organized storage space. Notice how the side “OVERHEAD DOOR” opens wide access to the back yard for the lawnmower and bulky equipment.

“Street-side” door of the garage (at rear in this picture) can be closed to provide privacy. With the back wall opened by the extra door, the garage becomes an extension to the patio in the foreground. A variety of glass-paneled, wood-paneled, and flush-panel “OVERHEAD DOORS” is available.

This garage converts three ways. It absorbs the overflow from an expandable teen-age “noise room” at the rear of the house, through a back “OVERHEAD DOOR.” It opens to an adjacent patio through a side door and lets the car in through the front door. The giant fiber-glass insect screen shown on the front door is available from your “OVERHEAD DOOR” distributor.

THE OVERHEAD DOOR

the original upward-acting sectional door, made only by

OVERHEAD DOOR CORPORATION

Gold Bond announces a new weapon against rising construction costs...

spiral core
GYPSUM PARTITION PANELS
Again, from Gold Bond,
a triumph of research and development—
SPIRAL-CORE! This new timesaving,
cost-cutting product will play a big role
in the coming panelization revolution in
home-building construction... with no
reduction in quality.

The backbone of each panel is light-
weight, but sturdy, hardwood spirals. The
exterior surfaces are tough gypsum wall-
board. Bonded together in large 4' x 8'
panels, they go up fast, save space, save
money.

WITH SPIRAL-CORE it takes only a few
hours to erect all the interior, non-bearing
partitions in an average-size house. Older
methods, using wood studs, took up to
two days.

SPIRAL-CORE SAVES SPACE. The panels
are only 2½" thick. Conventional walls,
using 2" x 4" wood studs, are 4½" to 5"
 thick. Saves up to 33 sq. ft. of floor space
in an average-size house — enough space
for an extra closet or lavatory.

STRONG IMPACT RESISTANCE. The force
of a 250-lb. professional football player
smashing against a test installation didn’t
break through or even tear it loose.

LOW RESONANCE. Thump it. Rap it
hard. Sound doesn’t "drum"... the solid
sound of quality bounces back.

WIRING EASILY ROUTED. Ram the wood
spiral core with conduit or cable—it’s
easily pierced. Wiring becomes a simple
matter with these prefabricated wall
panels.

SPIRAL-CORE is another in a long line of
quality developments from National Gyp-
sum Company designed to hold down
building costs. For sample and technical
information, see your Gold Bond® Repre-
sentative, or write to Dept.HH-101.

Present distribution of SPIRAL-CORE is limited
to southeastern and southwestern U.S.A. — in
the economical shipping area of our New Orleans
plant. More extensive distribution to be an-
nounced in the near future.
That’s big business in any builder’s bailiwick. And any manufacturer’s, too. What made it possible?

**The fact that he used and promoted products bearing the Good Housekeeping Guaranty Seal!**

Here’s what Charley Huber of Huber Homes, Inc. in Dayton wrote us:

“In the first two weeks of promotion on our receipt of the Good Housekeeping Citation, we have experienced over one million dollars in new home sales. Our homes now feature products that have earned the Good Housekeeping Guaranty Seal. The Citation has added to our homes an endorsement and prestige impossible to duplicate.”

Other enthusiastic builders write:

“. . . enjoyed a terrific sales response since we opened to the public Sunday. As you know, the homes start at $40,000. On the opening day we sold six homes, two on Monday, and two today.” (Encino Hills—Sherman Oaks, Calif.)

“... an excess of $500,000 worth of homes by following weekend.” (Concord Homes, Inc.—St. Louis)

“In a slow market which presently exists, our sales have been phenomenal.” (Creative Builders—Newton Highlands, Mass.)

As the Good Housekeeping Citation Program expands, so does the file of glowing letters from participants. There’s no other home building program like it. No other home building program . . .

... gives the prospective home purchasers such true assurance that the biggest investment of their lives will be the best.

... gives top-level builders the tremendous sales advantage of credibility to their own claims of quality and value.

... gives manufacturers of building products, equipment and appliances who have earned the Good Housekeeping Consumers’ Guaranty a built-in avenue to mass sales.
As with the Good Housekeeping Guaranty Seal, the Citation is given to no one—the builder who has it earns it! His ethics, standards, finished product are thoroughly appraised by the Good Housekeeping Building Forum. The builder agrees to buy and feature by brand name products that have earned the Good Housekeeping Guaranty Seal. And use them he does! In quantities that would make any manufacturer delighted.

TO MANUFACTURERS... TO BUILDERS... who would like to participate in Good Housekeeping's Citation Program, write or call Calvin Herve, Advertising Director, 959 8th Ave., N. Y. 19.

**DOLLARS IN TWO WEEKS**

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YOUR GREATEST ASSET IS OUR QUALITY PERFORMANCE!

This time it's RCA WHIRLPOOL

"We especially liked these features," says McCall's.

Washes silver, dishes and glassware beautifully without pretreatment. Adds rinse conditioner for spotless drying, too.

Dial-A-Cycle* control mounted at top of door is convenient to use, operates all four cycles. . . NORMAL, SHORT, READY-RINSE* and PLATE WARMER.

"Random-Loading" vinyl-coated racks are easy to load. Front door opens wide and racks glide out and in smoothly.

Filter-Stream* washing action collects solid food particles and automatically flushes them down the drain.

"We tested this large family undercounter dishwasher by loading it time after time with china, plasticware, glassware, silver, pans and utensils soiled with every type of food . . . We found that everything came out of the dishwasher clean, sparkling and dry without scraping or rinsing . . . The READY-RINSE is wonderful for ‘dusting off’ seldom-used dinner service and the PLATE WARMER for heating plates and platters”.

You can bank on it that homemakers will be favorably inclined toward a kitchen with an RCA WHIRLPOOL Imperial model undercounter dishwasher. And since it’s no secret that women are frequently sold or unsold on a home by the kitchen, it stands to reason you have a big sales advantage when your kitchen is the one equipped with McCall's-endorsed RCA WHIRLPOOL dishwasher. For the complete story on all the RCA WHIRLPOOL home appliances available to help you build more sell into your homes, contact our Contracts Sales Division.

New RCA WHIRLPOOL

Imperial model food waste disposer

is also McCall’s endorsed . . . builds still more value into your kitchens. Among the homemaker-wanted features of the RCA WHIRLPOOL disposer endorsed by McCall's are: Automatic reversing action designed to free trapped items instantly. Big 1½-quart capacity batch feed. Handy cover control. Easy to install, it has a built-in dishwasher connection to permit use of common drain.

Model SHD-31

Prospective home buyers by the thousands look to McCall's Magazine for ideas on how to make their dream houses more livable, base many a buying decision on a McCall's recommendation. That's why the McCall's Laboratory and Use Tested Tag on the new RCA WHIRLPOOL Imperial model undercounter dishwasher represents powerful sales help for you.

Here's what the tag says: “We tested this large family undercounter dishwasher by loading it time after time with china, plasticware, glassware, silver, pans and utensils soiled with every type of food . . . We found that everything came out of the dishwasher clean, sparkling and dry without scraping or rinsing . . . The READY-RINSE is wonderful for ‘dusting off’ seldom-used dinner service and the PLATE WARMER for heating plates and platters”.

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McCall's endorsing built-in dishwashers

OCTOBER 1961

Model FU-70B
SOLID WOOD BLOCK CORE
of each panel is laminated
with water-resistant plastic
glue and faced with genuine
wood veneer.

wood folding
partitions
provide walls that "get out of the way"

Wherever a single floor area must serve two or more activity groups, there’s a
place for heavy-duty PELLA WOOD FOLDING PARTITIONS. Besides solving fast-changing
space division problems, these handsome partitions also lend rich interior beauty to
schools, churches, offices, clubs and restaurants. Massive panel dimensions of 10\(\frac{3}{8}\)\(\times\) 1\(\frac{1}{4}\) emphasize the natural grains of 6 genuine wood veneers. Laminated stable core
construction permanently prevents warping. Patented “live-action” hinging maintains panel
alignment. For any opening width and heights up to 20’—1”. Call the PELLA distributor listed in
the classified section of your telephone directory or mail coupon.

PELLA ALSO MAKES QUALITY WOOD FOLDING DOORS,
WOOD SLIDING GLASS DOORS, WOOD CASEMENT
AND MULTI-PURPOSE WINDOWS AND ROLSCREENS

ROLSCREEN COMPANY, Dept. MB-50, Pella, Iowa
Please send details on PELLA WOOD FOLDING PARTITIONS

NAME

FIRM NAME

ADDRESS

CITY & ZONE

STATE

THIS COUPON ANSWERED WITHIN 24 HOURS
Youngstown Kitchens

IN WOOD
The most saleable name in popularly priced

Rugged design—Cabinets are fully framed, with full backs. Top and bottom panels are supported on all four sides. Gussets (each both glued and screwed) and glue blocks are used extensively. Shelves are rabbeted.

All top-grade hardwood construction—the new Youngstown Kitchens Woodline Series is all-wood throughout. No substitute materials are used. All wood is kiln-dried. All plywood is balanced construction. Doors are solid lumber core.

Lustrous Cinnamon-Maple finish—Beautiful, durable finish is applied in six separate steps: first, a toner, then vinyl sealer is applied and oven-dried at 125°; sanding; lacquering; and a final oven-drying to set and harden the rich, deep-tone finish.
Kitchens now brings you kitchens IN WOOD!

Beautiful maple... rich cinnamon finish!
Superb craftsmanship... backed by the famous Youngstown Kitchens name

Look it over. It's the kind of kitchen only a nationally famous manufacturer like Youngstown Kitchens could give you in this price range.

It's all hardwood... crafted and constructed like the finest furniture. Timeless styling. Clean, elegant lines. Deep, durable Cinnamon-Maple finish. True quality features and fixtures throughout.

It's the wonderful new Woodline Series from Youngstown. Put it with all the other advantages Youngstown gives you, and you've got an unbeatable opportunity. A line with name—the most respected name in kitchens. A line that's complete—the only line that gives you wood, plastic-laminate, and all-steel kitchens, plus built-in appliances. A line that has all the kitchen features homeowners want.

Write or call us today for the full story.

Now you get the famous Youngstown Kitchens name on every kind of kitchen ALL-WOOD, ALL-STEEL AND LAMINATE... and built-in appliances, too.
NOW!
KITCHENS OF
EVERY KIND!

All-wood . . . the new Woodline Series—This newest addition to the famous Youngstown line is crafted and constructed like the finest furniture. Finished in smart, go-with-everything Cinnamon-Maple.

All-steel . . . the Diana Series—Complete cabinets and bases built to last a lifetime. Doors and drawers can’t warp, rot, stick, or swell. Sound-deadened construction. Baked-on, enamel finish in Star White or Monterey Beige.


PLUS A FULL LINE OF APPLIANCES

Early American Antique Copper vent hood. Other models: Standard—Brushed Chrome or Coppertone; Deluxe—Stainless Steel or Hammered Copper; Ductless—Brushed Chrome or Coppertone.

Gas or electric built-in ovens available in Coppertone, Brushed Chrome, Pink, Yellow, and Turquoise. Also under-counter oven-range combinations.

Super-thin gas or electric range tops as little as 3” deep, allowing drawer space underneath. Choose from many models in popular sizes. Color selection same as ovens.

Youngstown Food-Waste Disposers with exclusive “Duo-Life” cutting teeth. Safe for sewer or septic tank. Choice of three models.

Youngstown cabinet sinks are available in many styles and sizes with graceful appearance and extra convenience.

Youngstown Kitchens Division, Box HHM-101, Warren, Ohio
Please rush me full data and specifications on the new Youngstown Kitchens Woodline Series. Include information on appliances and the Woodcharm and Diana series, too.

NAME
FIRM
ADDRESS

YOUNGSTOWN KITCHENS DIVISION
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
WARREN, OHIO
No other big industry is developing so many new ways to offer a better product for less money page 104

These new and better ways make it all the more important for you to follow the 23 sound old rules on how to design and detail to build better for less page 108

And they now make it necessary for you to follow eight new rules for better building page 118

To make these rules work, the manufacturers of building products and the inventors of building techniques have come up with new ways to build every part of the house better for less page 133

You'll find the better-for-less news about crawl space on p 134, about flooring on p 136, about partitions on p 139, about exterior panels on p 140, about studs on p 141, about wall skins on p 142, about drywall on p 144, about trusses on p 146, about roofs on p 148, about attic vents on p 150, about ceilings on p 154, about brick on p 156, about 2-story houses on p 158, about bathrooms on p 160, about heating and air conditioning on p 169, about wiring on p 172, about doors on p 174, about windows on p 176.

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COVER

Design: H&H staff. Photo: Phil Shapiro

COMING NEXT MONTH

Ninth annual report on prefabrication
Winning entries in the 1961 Interiors for Better Living Awards program
Portfolio of five distinguished custom houses

Housing

THE

INDUSTRIAL

REVOLUTION

IN

HOUSING

2nd

PROGRESS REPORT

1961

New methods, new products, new tools to build better for less

OCTOBER 1961

Published by TIME Incorporated

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Homebuilding used to be called backward and unprogressive, but now...
No other big industry is developing so many new ways to cut its costs for a better and better product

One reason why change is coming so fast in homebuilding today is that change came so slowly yesterday. Homebuilding was last of the great industries to enter the industrial revolution, so now it is making up for lost time. But a . . .

Second big reason is that homebuilding is the last great stronghold of small business and free competition, with thousands of competing builders, thousands of competing suppliers, and thousands of competing architects and designers all thinking up and trying out new ways to design and build better for less.

So today there is a new and better product, a new and better tool, or a new and better method to do almost everything except roofing. Change is coming faster and faster as more and more manufacturers get into the act and more and more new components and new materials start fighting for a share in this biggest-of-all markets. Change is coming fastest in this year’s sharp competitive squeeze.

Consider, for example, how these changes just since 1958 can change what kind of houses you will plan and what those houses will cost:

New steel and plywood combinations make hardwood floors cheap as slabs (see p 134);
New six-in-one sandwiches cut wall-construction time in half (see p 140);
New bathroom systems permit two better baths for less than most builders pay for one (see p 158);
New adhesives promise brick bearing walls cheap as yesterday’s veneer (see p 156);
New add-on packages make air conditioning a bargain hard-to-beat (see p 169);
New devices make better wiring cost less than poor (see p 173);
New quick-drying plasters cut drywall finishing time two-thirds (see p 144);
New direct-burial cables and methods cut underground wiring costs in half (see p 172);
New trucks and lifts turn the economics of where-to-do-what upside down and double the importance of “building with parts instead of pieces” (see p 122);
New doors cut closet and hallway costs a third (see p 174);

What these changes add up to is this: The three years since 1958 have seen an enormous advance in the industrialization of homebuilding; and any house
built today relying only on yesterday’s products, yesterday’s tools, and yesterday’s methods will be obsolescent before it is built—and it will cost too much.

Builders who know and use all today’s more efficient tools and products and methods are building better houses for less than their 1952 costs, despite the 60% rise in building-trades wages. (Bill Levitt, for example, asks less per square foot for his 1961 homes than he got for his 1948 houses. So does Andy Place—and he throws in double glazing throughout, plus twice as much insulation, plus 100-amp wiring, plus an extra half bath, plus redwood siding, plus a ten-year water heater, plus many other extras.)

But progress has come so fast that . . .

Too few builders know and cash in on all these many new ways to build better for less

Too few architects design for the new products. Too few dealers stock and push them. Too few subcontractors will use them. Too few appraisers recognize them. Too few lenders insist on them. Too few realtors sell them. This can’t go on because . . .

Today nobody but nobody in our industry can afford to pass up these new ways to cut costs and raise values.

New houses cost much more than they need to cost, more than most buyers are ready to pay.

Homebuilding will not boom again until our industry prices its product back into the market by offering much more tempting homes at much more tempting prices.

The housing shortage is over. The necessity is gone. Nearly three million existing homes are vacant, so hardly anybody anywhere needs to buy a new home unless he wants to. Even Miami had 13,461 used homes for sale in June—enough to meet all Miami’s growth needs until 1964! If that is true of America’s fastest-growing metropolis, how much truer must it be where growth is lagging!

Easy money will not bring back our boom; we have had easy money all this year. Easier terms for cheap houses will help only marginal buyers; they mean little or nothing to the ten million families who could afford right now to trade up to much better homes—ten million families whose present equities top $70 billion they could use for down payments, ten million families who now choose to sit tight where they are because we have so far failed to offer them tempting-enough buying appeals at tempting-enough prices.

From city after city, our roving editors bring back the same report: There is nothing wrong with the housing market that better homes at better prices would not cure. Bill Levitt sold out a year ahead when he offered Washington 1,850 sq ft fully equipped, fully air conditioned, fully insulated, and fully landscaped for $17,500. In hard-pressed South Bend, Andy Place is almost outselling all other builders combined by offering top quality in 1,280 sq ft for $10,770 plus lot. Outside Cleveland Bob Schmitt is having his best sales ever
Just when we need them most, manufacturers are giving us the new products, the new tools, the new equipment to build much better for less; the smartest builders, architects, and dealers are showing us much better ways to use them.

How many new homes we build and sell in 1962 and how many new homes we build and sell in 1963 will depend mostly on how fast how many of us adopt and cash in on these new products, new tools, and new methods. They are doubly important to small builders, because small builders get squeezed hardest when sales are slow. And these new factory-made components offer small builders their only chance to get in on the economies of bigness and quantity production.

So this issue of House & Home is dedicated

to the Architects of America
to update them on all the new economies and efficiencies of today's component-assembled house, to help them collaborate more knowingly with the builders and play a bigger part in providing better homes for millions of Americans, to help them serve the great and growing new market for their professional skills and talents in the $16 billion-a-year business of building houses for sale.

to the Builders of America
to help them cut their costs at least $1,000 a house by helping them cash in on the savings today's new tools and new components make possible, to help them take better advantage of the help their dealers and suppliers can offer, to help them squeeze every possible waste out and so put more quality and more sales appeal in, to help them price their product back into the market and so sell many more better homes.

to the Building Suppliers and Dealers of America
to give them a better understanding of the revolution that is fast changing home-building into an assembly-line industry, to give them a clearer picture of their best customers' methods and needs, and so help them sell more of the parts and sub-assemblies their customers need in the sizes they can use most efficiently.

to the Realtors of America
to help them sell more good houses by giving them a better understanding of the values they have to sell and a better appreciation of how much better homes efficient builders can build now than they built in "the good old days."

to the Appraisers and Lenders of America
to help them invest more money where long-term value is best, to help them recognize waste and discourage it, to help them play a more dynamic part in raising the standard of housing by backing the builders who use today's best new methods to build better for less.

to the Homebuyers of America
to help them enjoy a better life by helping them to get better homes to live in at prices more of them will be glad to pay.
With all the new ways to build better
the Fundamental Rules still apply

Three years ago the Research Institute of NAHB joined HOUSE & HOME in spelling out these 23 basic rules for building better homes for less money (H&H, Sept '58). Three-year-old rules are as true now as they were then, but today's new products, new tools and new methods can double the saving they offer.

Here are the rules as we worded them in 1958—with 1961 postscripts in italics to update them:
Sound old rule No. 1:
Build with Parts instead of Pieces

Don't waste field-labor wages making anything you can buy right.
Anything and everything can be made better and cheaper
in a shop than it can be made on the building site; most
things can be made better and cheaper in a factory than
they can be made in a shop. So if you find you can make
your components in the field cheaper than you can buy
them shop-fabricated, don't get smug about your production
economy. Get busy and find out what's wrong with your
buying and who is taking too long a mark-up on your order.

Cost-wise architects and builders all know that hand labor
on the site can seldom compete with machines and jigs and
assembly lines. So buy your trusses; a lumber dealer can
make them so fast on a jig that he can save half his assembly
labor cost out of what he can save buying short lengths from
the mill for the web members. Buy your wall panels: a
lumber dealer can save more than the cost of making them
by buying the lumber precut to short lengths (4' and 7'7")
$20 and $30 mbf cheaper. Buy package fireplaces—they can
save you as much as $350, and no one can tell the difference.
Buy your gable ends, and buy them complete. Buy your
plumbing preassembled in the wet wall. Buy your cabinets
factory-made—even Bill Levitt finds it cheaper and better
than making his own. Buy your windows preglazed. Buy your
doors prehung. Buy your closet fronts complete.

To this we can now add: Buy your foundations (see p
134); buy your brickwork in panels; buy your floors panelized
and prefinished (see p 136); buy your partitions (see p 138);
buy your ducts insulated (see p 169); buy your cornices and
soffits; buy your roof ridges preventilated (see p 150); buy
metal covers for all your outside corner joints; buy your
windows preprimed, prehung, and panelized (see p 176); buy
your paints factory-mixed—and don't let a lazy painter thin
them; buy your utility core preassembled—if you can (see
p 164).

Sound old rule No. 2:
Plan on a 4' Module to fit the Parts you buy

Almost all components can be bought in sizes that will work
with a 4'x8' module, including drywall, all kinds of sheathing,
some kinds of siding (plywood, hardboard, sheet asbestos),
batt insulation, trusses, wall panels, windows, closet fronts,
kitchen cabinets, appliances, acoustical tile. Roll floor covering
is made in even-yard widths, mostly in 12'.

If you want all the savings you can get by building with
parts instead of pieces:

1. Buy all your parts coordinated with the 4' module.
Otherwise you will waste needless dollars buying parts that
won't fit together without costly on-site piecing.

2. Dimension your rooms to fit the same module. Other-
wise you will waste needless dollars because your modular
parts won't fit your rooms. (Most economical room dimen-
sion is 12'.) Only the bathroom needs a different module—
5' one way to fit the tub length, 3''2'' the other way to fit the
width of the fixtures along the wet wall.

3. Make your walls 8' high, with a flat-ceiling height of
8' plus a tolerance. (This means buy the studs for your
panels precut to 7'7''.)

4. Build to much closer tolerances. With tilt-up or panel-
ized walls there is no reason for not trying to match the
3/4"-in-40' tolerance to which prefabricators work.

To this we can now add: The 4' module is more important
than ever, because more components than ever use the 4'
dimension. Even the biggest builders are foolish to think they
can save money with a private module of their own, and
manufacturers will find they have cut themselves out of
tomorrow's volume market if they fail to dimension their
products to fit the module most other manufacturers are using.
Sound old rule No. 3:

**Design to Save Time and you’ll Save Money too**

Every day you cut off the production schedule will save you dollars on supervision, dollars on labor, dollars on financing. From coast to coast the fastest builders seem to get the lowest costs. For example: in South Bend, Andy Place’s schedule is 25 days; in Berea, Ohio, Bob Schmitt’s is 28 days; in Dallas, Fox & Jacobs’ is 18 days; in Savannah, Clayton Powell’s is 14 days.

*To this we can now add:* Today’s new tools and new methods can cut from four to ten days off these cost-saving schedules.

Sound old rule No. 4:

**Plan Bigger if you want to build Cheaper**

The smaller the house, the more it costs per sq ft. Says Rudard Jones, director of the Small Homes Council: “Making the house smaller takes value out of the product faster than it can take dollars out of the price. All your costs come down as the floor area goes up.”

Doubling the size of a small house from 24’x28’ to 32’x40’ adds only 42% to the perimeter, only 42% to the foundations, only 41% to the gutter, probably less than 40% to the interior partitions, less than 50% to the heating plant, less than 50% to the plumbing cost for a second bath.

Furthermore, doubling the size of the house makes it much easier to save money by sizing the rooms to fit the components you buy. A 12’x12’ room is almost sure to cost less than a room 9’8”x11’4”.

*To this we can only add:* Too many too-small houses have already been built.
Sound old rule No. 5:

Don't use Muscle Power when you can use Horse Power

Just because houses are assembled out in the open instead of being assembled in an assembly plant is no good reason for doing things by hand that could be done ten times easier with power equipment.

Too many subs still do things the hard way for fear of cutting their costs would cut their bill and so cut their profits. But don't let them waste their time and your money. Insist they buy and use all the best new power equipment. If necessary, buy the tools yourself and lend them to your subs until they learn to want them. That's what Bill Levitt did for some of his subs, and it saved him thousands of dollars.

Anything and everything from grading the site and digging the trenches to smoothing concrete and driving nails can be done cheaper and better with modern tools. So...

Grade your site with a bulldozer.
Dig your foundations with a posthole auger, a trencher, and a backhoe.
Move your materials with a high-lift shovel, a forklift, and a two-story hoist.
Tamp your soil base with a power compactor.
Mix your concrete in a power mixer and finish it with a power trowel.
Cut your materials with a radial saw, a panel saw, a circular hand saw, and a router.
Drive fasteners with a stapler, a stud driver, a power screwdriver, and a power nailer.
Spray your paint with a paint spray.
Finish woodwork with a floor sander and a hand sander.
Carry your power to the job with a portable generator.

To this we can now add: Today's new and better tools can cut more costs more than ever. See page 128.

Sound old rule No. 6:

Let the Dealer earn his Mark-up by the money he saves on Handling

A good retail dealer can afford much better materials-handling equipment than most builders, so have him deliver your panels along the foundation, your trusses atop the walls, your flooring, your drywall, your appliances, and your plumbing fixtures inside the house, your roof on the roof, your bricks and blocks and grade beams where the masons will use them.

To this we can now add: Today's better lifts and carriers give a whole new answer to "who should make what, and how big, and where." Their wider use is now the No. 1 requirement to speed the industrialization of homebuilding. See page 122.

Sound old rule No. 7:

Don't waste Studs—they cost you $5 each

Says Professor Albert George Dietz of MIT: "Practically all small houses built today use too many studs. You can't say they are overengineered, because they aren't engineered at all. They are just overbuilt."

Reports the Small Homes Council: "Our time and motion studies show that by the time it is installed a 65¢ stud costs close to $5; and the less studs you use the less it will cost you to erect your drywall, insulation, sheathing, and siding, and the less nail heads you will have to spackle.

So, 1) space your studs 24″ oc. There is no excuse for any local code that requires studs 16″ oc for one-story houses; 2) don't waste cripples over windows, They are worse than useless; 3) buy windows sized to fit your stud spacing; 4) put only one stud between multiple windows; 5) group your windows.

To this we can now add: Don't use green lumber. See page 127.
Sound old rule No. 8:
Assemble your walls in Fewer Layers

A few builders still put up their walls in as many as 16 separate site operations for 16 separate layers (including the paint). You can save many field labor dollars by designing your walls to combine or eliminate half the layers and so get a finished wall in six operations instead of 16. For example: combine your vapor barrier with your drywall; or your vapor barrier with your insulation. Combine your sheathing and insulation, or your sheathing and your siding. Don't waste building paper over solid sheathing or under panel siding. Don't waste diagonal bracing under sheathing or under plywood or hardboard siding. Use drywall instead of wet plaster—it's better as well as cheaper if it is applied right.

To this we can now add: You can save even more by buying your wall panels complete and prefinished. See page 140.

Sound old rule No. 9:
Frame your roof with Long Trusses

They save Builder Nels Severin $650 a house, Builder Andy Place $800, Builder Bob Schmitt $1500, as follows:
$300 for getting the house under cover the first day. "This lets me schedule my crews rain or shine, offer steady employment, and so get better men."
$200 on faster laying and finishing of the hardwood floor.
$150 on thinner partitions and easier erection.
$300 plus on plumbing, heating and wiring "because the planning freedom under the truss permits a more economical mechanical layout."
$50 on a simple slab because of no interior bearing walls.
$100 on materials handling "because I can unload the trucks inside the house before I partition off the garage."

To this we can now add: You can buy better trusses cheaper almost everywhere (see p 146); and unless you use trusses you can't take advantage of all the factory-made non-bearing panels for interior partitions (see p 138).

Sound old rule No. 10:
Engineer to use less and better Nails

It takes close to 65,000 ordinary wire nails to hold a small house together. The nails are cheap—perhaps $100 a house—but carpenter labor to drive them is expensive.
So use only threaded nails. They can be shorter and thinner and still hold better. The smaller the nails the faster you can drive them (you can drive three nails a second in a nailing machine), and with smaller nails you can use a smaller nailing machine. Thinner nails are less likely to split the wood, and shorter nails are much less likely to pop. (This is especially important for drywall and for roof sheathing, where a popped nail can damage the weather coating above and start a leak.) You can fasten flooring four times as effectively with 2 1/2" X 0.113 hardened high-carbon steel helically-threaded nails than with the commonly used 2 1/2" light cut nail. For maximum economy, engineered nailing requires more different nails of more different types than builders usually use. These better nails cost more per pound but less per nail.

To this we can only add: amen and reprint on page 216 the nailing schedule prepared by Architect Leonard Haeger, former research director of HUD and NAHB.
Sound old rule No.11:

Plan to use Glue wherever you can

A good, glued joint can be the strongest, most lasting, most rigid connection you can make, and it is often cheaper than weaker joints.

Most architects and builders are so accustomed to using nails that they are slow to realize how much better many parts can be held together with glue. Modern chemistry has developed an adhesive for almost every need.

To this we can now add: There are new and better adhesives for many more uses. Glue drywall to the studs—but on your trusses save time and money with metal plates instead of glue-nailed plywood gussets.

Sound old rule No.12:

Use Brick where it will Show

Homebuyers like brick houses. In many parts of the country, especially the South, it is hard to sell anything else. No trade association has done more to develop new ways to use its material more economically than the brick industry through the Structural Clay Products Research Foundation. It has developed thicker bricks for thinner bearing walls, thinner bricks for brick veneer, bigger bricks for economy in laying-up, bricks with hand grips for faster bricklaying, brick veneer wall-panels for looks and reinforced brick wall panels for structure.

To this we can now add: You can now build a brick bearing wall for less than the cost of yesterday’s brick veneer. See page 156.

Sound old rule No.13:

Plan for less Waste in Painting

Painting most houses takes more on-site manhours than any other trade except carpentry, and carpenter manhours are being cut so fast by more efficient methods that painting may soon be homebuilding’s No.1 labor cost.

Most of these painting manhours are wasted doing work on the job that should be done in the factory, or doing work with a brush that could be done better in one-tenth the time with a spray.

Building is the only big industry left that still applies paint with a brush (and a too narrow brush at that). Every other big industry applies paint by spraying or dipping at a small fraction of what brush-painting costs.

Instead of bargaining with the painters whether to pay them $3.70 an hour or $3.80 an hour to waste most of their time, builders should be working out a brand new deal to pay painters much higher wages to get the painting done much faster with today’s best new materials and equipment.

Spray painting is no job for the do-it-yourself amateurs who now apply 60% of the paint used in this country, so union painters are not always averse to spray painting in return for premium pay.

To this we can now add: Don’t paint anything if you can buy it painted. If you can’t buy it painted, buy it primed. If you can’t buy it primed, insist on one of the new 15-year paints for all outdoor jobs, and on the new one-coat finishes for all interiors. See page 130.
Sound old rule No. 14:  
Plan your house for Air Conditioning

Almost everybody wants air conditioning, and air conditioning offers builders their one best way to dramatize how much better houses they can build today than yesterday. But the whole house must be planned for air conditioning if the cost is to be kept low enough for everyone to afford it. It makes no sense to install four tons of cooling if correct design could cut the cooling load to two tons. Insulation makers say a properly designed, properly insulated 1,200 sq ft house can be heated and cooled anywhere in the US for $128 a year.

Good planning for air conditioning begins with planning a house that will be easy to keep cool with or without air conditioning. For this there are eight basic rules to follow.

To the basics we listed then we can only add: “Put your kitchen fan in a big hood to pick up the range and oven heat right at the source, and be sure the fan is powerful enough to meet FHA’s new and better standards. The fans in too many kitchens and baths are so feeble they can hardly spin their own blades, let alone their job.”

On page 213 you will find reprinted the sound advice we gave three years ago to cut the cost of cooling. For news of new ways to cut cooling costs see page 170.

Sound old rule No. 15:  
Don’t kid yourself Basements are Cheap

Says Builder Bob Schmitt of Berea: “Any builder who thinks basements are cheap just doesn’t know his indirect costs. I can add good space on grade for less money per square foot than I could add a basement.”

Says Builder Andy Place: “Adding a basement costs me as much as adding year-round air conditioning with full insulation, plus an extra bath, plus a family room, plus a dishwasher, plus a clothes washer, plus a garbage disposer, plus 400 sq ft of better storage space in the attic!”

Builders who know their costs say:
The best way to cut basement costs is just to cut out the basement. There is no other way to cut your costs $2,000 to $3,000 per house without cutting any real value out of your product. The only time a basement makes sense is in a hillside house, where most of it is above ground (in which case it isn’t really a basement).

To this we can only add: Don’t kid yourself that homeowners won’t buy unless you offer a basement. Nobody but nobody wastes money on basements in the South or West. In New Jersey the best selling builder (Levitt) never offers basements; in Ohio the best selling builder (Huber) never offers basements; in Massachusetts the best selling builder (Campanelli) says hardly anybody buys his basement model; in Missouri the best selling builder (Fischer & Frichtel) says only one buyer in four is willing to pay for a basement; and in Indiana, Builder Andy Place offered homeowners their choice and only one buyer in 19 took the basement model.

And don’t kid yourself the high basements that are now so popular offer you a cheaper way to build a two-story house. Says Builder John Fischer of St Louis: “The most economical place to build any house is on top of the ground, not down in a hole.”

Sound old rule No. 16:  
Don’t do Anything on a Ladder your men could do on the Ground

For example: preassemble your gable ends and hoist them into place. Prepaint your siding all but the last coat before you put it on the wall. Prepaint your shakes to 16” nailing strips before lifting them to the roof. And give your men a platform to stand on when they work on the ceiling.

To this we can now add: As housing industrializes there is less and less excuse for working on ladders. For example you should: Paint your ceiling with a long handled roller, paint your gable ends and gutters and soffits on the ground or in the shop, tape your drywall joints with long handled taping tools, assemble your walls in jigs, lay brick from a movable platform.
Sound old rule No.17:
Design your houses to look Big

Every builder should let his architect follow these five simple rules to give more curb appeal to his houses by making them look longer and therefore bigger and more-for-the-money:

**Emphasize your horizontal lines**
Emphasize your roof line with a big overhang of at least 2' and don't interrupt your roof line with little jogs. Emphasize your window head line by lining up the heads of all your doors and windows. Emphasize your middle line by running a moulding or belt course right around the house at sill level, or perhaps by using a different material, like brick veneer, below the sill line.

**Don't design a banana split**
Don't use different materials in such a way that they split the front of your house into two or three smaller units. That just makes the house look smaller.

**Extend your horizontals beyond the end of the house**
1. Always extend your roof overhang at least 2' beyond each end of the house. A house 40' long with a 44' roof will look a good deal bigger from the curb than a house that really is 44' long if the 44' house has only a 44' roof—but the extra 4' of roof will cost less than a fifth as much as adding 4' to the house itself.
2. Use fencing to extend the middle line at least 4' and preferably all the way to the property line on both sides.

**Make your windows look horizontal**
Combine your windows into longer units with panels between; better still, combine your windows in horizontal units so no panel is needed.

Sound old rule No.18:
Don't waste your Outdoor Space

Cheapest space anyone can add to a house is outdoor space for outdoor living. It is as salable as it is cheap, for outdoor living is what most families move to the country to enjoy. With floor-to-ceiling windows, it can double the seeming space of small rooms indoors. And all it costs is a little money for paving, a little money for planting, a little money for fences, a little money for attractive outdoor lighting, and a little more thought.

Too many builders pass up this bargain in outdoor living and offer only the ten-times-as-expensive indoor living. Too many new houses make little more provision for outdoor living than a city apartment. Some houses don't even have a door opening directly to the lawn. They have a front door to the front walk, a side door to the garage, and a back door to the service yard to put out garbage or hang out the wash—but no door through which people can walk out to enjoy their land.

**To this we can now add:** Today's inflated land costs and development costs make it doubly important not to waste the land you buy. Some houses wisely planned on lots 24'x80' offer more enjoyment of the out-of-doors than most houses built on lots 60'x120'.

Sound old rule No.19:
Put better Storage in the space you now Waste

Today your best prospects are families in their middle thirties who have been on a buying spree for ten years. Two out of three new houses are sold to second-time buyers—people dissatisfied with where they have been living. And more homeowners are dissatisfied with the inadequate storage in their present homes than with any other fault.

To give buyers the storage they want and need you don't have to plan their garage as a two-car attic and you don't have to dig them a $3,000 basement. You can provide most of the storage they need in space that you now waste.
Sound old rule No. 20:

Plan your house to fit your Site

A house that is right for a 100' lot seldom makes sense for a 50' lot; a house that is right for a flat lot may be all wrong for a hillside lot or even a gently sloping lot; a house that is right for the north side of the street is probably wrong for the south side.

That's why plan-book houses often cost more to build than houses suited to the site by a local architect.

Plan a Hillside House for a Hillside Site

That is one place where a basement makes sense, for it gives you a two-story house with both stories at ground level, either front or back. A hillside house is never cheap, but a hillside basement gives you prime space instead of a dark hole in the ground; it costs less than a below-grade basement on a level site; it often costs less than grading the lot for a one-level house.

Furthermore, the less you disturb a hillside grade the less trouble your buyer will have later with slides and erosion.

Plan One-Story Houses if you Have Enough Land

You can't beat the one-story house for convenience and livability, and you can't beat it for construction economy. Except in the tradition-bound Northeast, few of the fine country houses custom-built on flat ground since 1940 have had more than one floor. A level lot 100' wide is big enough for almost any one-story house.

Never build a detached house smaller than 1,200 sq ft on more than one level.

A story-and-a-half house (ie, a Cape Cod) is the most expensive of all to build, the Small Homes Council found (H&H, Mar '58).

Build Two Stories if Your Lot Is Too Narrow

If you want to put 1,500 sq ft on a 60' lot or 1,800 sq ft on a 70' lot, the two-story house may be your best bet. What you save on buying less land may pay what it costs you extra to double-deck your construction.

But don't build two stories because you think they are cheaper; even for conventional construction the Small Homes Council found they cost more than any other layout except the story-and-a-half.

When builders like Bill Levitt find their two-story cost is less per square foot it is not because adding a second floor is the cheapest way to add space; it is because any added space always costs less than basic space.

One good way to build a two-story house is to use an above-ground basement for the lower level, as in Carl Koch's Techbilt house.

Sound old rule No. 21:

Don't spend Good Money on anything less than a Good Kitchen

A bad kitchen costs just as much money as a good one. The woman who buys your house may not understand electronics or thermodynamics, but unless she is a very green bride she will know at a glance whether she will like the kitchen you offer her—whether it will be a pleasant place to work in and an easy place to work in, and whether it is conveniently located so she can answer the door, watch the children, and enjoy her guests. "The kitchen sells the house" is a truism.

There are 15 good ways to make a good kitchen better without making it cost more, and nine good ways to make it cost less and still be just as good.

Don't build splits unless . . .

1. Your subs will absorb their higher cost for you, or
2. Unless your buyers will pay more to get less.

A split costs an efficient production builder more per square foot than any other floor plan, because no one has been able to devise an efficient way to build one. On a flat site they combine in one package every that is wasteful in basement construction, crawl space construction, and two-story construction. They defy the economies of panelization, fill-up, and one-big-room finishing. With few exceptions they are nailed together one stud, one joist, and one rafter at a time with interior bearing walls.

Plan Rowhouses for High-Price Lots

Never try to squeeze more than six detached houses onto an acre. Six houses to an acre cuts your lot size to about 50' x 100', which is already too small to justify wasting space between houses on side yards too narrow to be any good.

Two-story row houses 25' and 30' wide with one or two fenced patios per house can be planned to offer as much real enjoyment of the land 13 to the acre as detached houses six to the acre—especially if you reserve some of the land you save for neighborhood play areas big enough for games. (H&H, Oct '57)

Says Ross McKeever of the Urban Land Institute: "At the same density you can get more privacy with rowhouses on 30' lots than you can with little boxes set directly in the middle of 60' lots."

To this we can now add: These 24 ways are still good, so you will find them reprinted on page 215. They were worked out for House & Home in collaboration with Glenn H. Beyer, director of Cornell's Housing Research Center and head of the Cornell Kitchen Study.
Sound old rule No. 22:
Get your Wiring out of the Ceiling—and use less and heavier Circuits

Don't let your electrician waste his time and your money. Many builders could get adequate wiring (100-amp entry or better) for little more than they now pay for inadequate wiring (60-amp).

Don't let your electrician bid a flat price per outlet. Find an electrician who will work with you to detail a more economical wiring method and share his savings on this more efficient system with you.

There are 20 good ways to cut the cost of adequate wiring, worked out for HOUSE & HOME in collaboration with Charles P. Bobe, chairman of the Research & Educational Committee of the National Electric Contractors Association.

(Three most important are briefly in the headline above. They are all reprinted on page 205.)

To this we can now add: 1) Get your indoor wiring out of the wall (see p 173); 2) Get your outside wiring underground (see p 172); 3) Install circuit breakers instead of fuse boxes. They cost $5 to $10 more, but a careful count by a major southern utility showed they cut service calls 90%;
4) Prewire for plenty of telephone outlets. Pre wiring costs so much less that many Bell companies will do it free.

Sound old rule No. 23:
Buy your Plumbing prefabricated—and keep it Above the Floor

More builders and more architects get stuck on their plumbing and bathroom costs than on anything else they pay for.

Bathroom costs vary more from place to place and from builder to builder in the same place than any other costs. Builders who are both smart and lucky can add a second tiled 5'x8' bath for less than $450 complete, including $150 for the raw space. Most builders have to pay twice as much.

This is not necessarily the plumber's fault.

One reason plumbing costs vary so much is that so many communities still have archaic plumbing codes. If your city has a bad plumbing code it would pay your local builders' association to challenge its wasteful requirements in excess of the up-to-date requirements of the National Plumbing Code.

Another reason plumbing costs vary so widely is that some states permit restrictive local licensing practices to stifle competition among plumbers. Builder Dick Hughes pays $300 less in Texas than he pays in Oklahoma for identical plumbing in identical houses, because Texas has state licensing for plumbers and Oklahoma does not. But...

Biggest reason plumbing costs vary so widely is that few builders are ex-plumbers and few builders know enough about plumbing to work with their plumbers to get better plumbing for less money. There are 25 ways builders and plumbers can help each other cut costs. (Most important are the two rules in the headline above.)

To this we can now add: Most of these 25 ways are still good, so you will find them reprinted on page 208. But how much longer they will stay good is a question, for the bathroom is heading into the biggest and most exciting revolution since the toilet came indoors. For a preview, see page 166.

Now let's consider what new rules must be added to the old to profit by new products, new tools, new methods, new ideas.
New rule No. 1:

Don’t be afraid to show joints ... in your ceiling

... in your interior wall panels

... in your exterior wall panels

... or in your roof
Let your panelized houses look panelized

Not so long ago architects and builders were spending millions of dollars each year for moldings to make monolithic plaster look panelized.

Today, contrariwise, architects and builders are spending millions of dollars a year (at least $50 million and perhaps $100 million) to hide the joints between drywall panels and so make drywall look like monolithic plaster!

This $50 to $100 millions is nothing compared to what it would cost to hide all the joints in tomorrow’s component-built houses. And no amount of money will solve the prefabricated roof problem as long as we think the joints will have to be hidden.

All this is nonsense. There is no good reason why a panelized house should look like anything else. Any good architect has to know how to make visible joints an attractive design feature.

For small-scale items the joints are always the most attractive feature. In fact, the visible joints are the No. 1 reason homebuyers like the looks of small-pane windows, brick and masonry walls, ceramic tiles, shingles, clapboards, and board-and-batten siding. And you can often improve the appearance of sheet materials like plywood by grooving them to look as if they had more joints than they really do.

On any larger-scale items modular joints have long been recognized as equally pleasing. The visible joints are one big reason so many people like beamed ceilings and half-timbered houses.

The pictures on these two pages should remind you of many ways to make panelized houses look better by dramatizing instead of hiding the joints.
New rule No. 2: Don’t build from the outside in—

Don’t insert your components into fixed openings, they may or may not fit; position your components before you close them in. For example:

Don’t wall in your kitchen before you hang the wall cabinets and set the appliances. It’s a lot quicker and easier to dimension the kitchen to fit the cabinets and erect the end wall after they are all in place.

Set your bathtub before you close in the end of the bathroom. Don’t try to wrestle a 400-lb tub 60”x16”x32” through a narrow doorway.

Finish your plumbing before you frame it in (most economical framing is a thin non-bearing partition on either side of the pipes).

Finish installing and connecting up your furnace and your water heater before you wall them in. There is no better way to waste time than trying to install a furnace in a finished 2’x3’ closet.

Don’t position your studs before you insert your windows in
try to build from the inside out

c conventional construction; that way you may pay more to shim the window into place than you paid for the window. You can save all that shimming time if you set your windows in one, two, three order—first the stud on one side, then the window, then the stud on the other side.

Install your disappearing stair (or stairs) to the attic and finish your overhead ducts before you drywall the ceiling.

Don't close in your house until everything has been carried in. Last wall Bob Schmitt erects is the wall between the house and garage. That way he can truck his parts right indoors and unload them under the roof.

No auto maker would dream of putting the head on the engine before he fitted the pistons in the block. And trailer makers, those most industrialized and therefore most efficient of homebuilders, say they save hundreds of dollars by always building from the inside out.
New rule No. 3

Rethink everything to get all the big savings
the revolution in materials handling offers you

This revolution is the biggest build-better-for-less news of all, because . . .

1. It makes it easy to handle much heavier units, so you can plan to build with much bigger and heavier prefabricated components like those shown in the pictures alongside.

2. It makes materials handling the only construction cost that (like earthmoving and roadbuilding) should be lower today than in 1929.

3. It changes the answers to "Who should do what, and where?" It lessens the need for costly on-site fabrication and increases the chance for shop fabrication, where almost everything can be made better and cheaper.

4. It changes the answers on when to do what at the site. For example, instead of putting in your driveways last (as many builders do) you can now save money by putting them in first. Instead of closing the house in first (as most builders do) you can now cut your costs by not closing it in until you have to (see p 121).

5. It changes the answers on builder-dealer relations. Not so long ago many builders were finding they could cut their costs by "buying direct" and short-cutting the dealer. But now many of these same builders are finding they can cut their costs more by teaming up with a dealer who has volume enough to afford the most efficient specialized equipment to deliver everything just where it is needed—drywall inside the house, siding along the sides, trusses on the walls, roofing on the roof, etc.

Says Clarence Thompson: "We dealers must earn our mark-up by performing a service for the builder cheaper than he could do it himself." The revolution now under way in materials handling makes this much easier.
These on-site material carriers can cope with rough terrain.

Rubber-tired loader is heavy enough to handle big unitized bundles.

Fork lift on tractor carries masonry pallets.

Bulldozer moves heavy stack of drywall.

Loader hook lifts trusses, puts them on the house.

Loader bucket puts shingles on the roof.
The revolution is well under way, but much more remains to be done

Five years ago a HOUSE & HOME Round Table cosponsored by the Lumber Dealers' Research Council reported unhappily:

“Only one lumber dealer in ten is equipped to handle unit loads; only one box car in eight has the wide doors needed for unit loads; only one producer in a hundred is equipped to package and ship unit loads; only one builder in a thousand is equipped to receive unit loads.

“So from raw materials to finished erection the costs of materials handling (most of it inefficient) add up to one-fourth of the total construction cost of housing.”

“That HOUSE & HOME Round Table was the real starting point for today’s revolution in materials handling,” says Clarence Thompson, long chairman of the Lumber Dealers’ Research Council. “It made our whole industry recognize the need for a new kind of teamwork between manufacturer, carrier, equipment maker, dealer, and builder, all working together to cut the cost of materials handling. Before that we lumber dealers were working almost single-handed on the problem.”

Here is where things stand today:

1. Almost all of the 3,000 lumber dealers who cater primarily to the new-house market and supply 90% of this year’s new houses are mechanized. There are few areas left where a builder cannot find a dealer equipped to save him money by delivering everything at lower cost just where his workmen will need it.

2. Practically all bulky housing products can now be ordered in standard units palletized or unitized for mechanical handling—including lumber, asphalt shingles, glass block, face brick, plaster, lime, hardboard, gypsum wallboard and sheathing, cement, insulation sheathing, floor tile, acoustical tile, plaster base, and asbestos shingles.

3. Truck and materials-handling equipment makers now offer specialized units to meet almost every homebuilding need. For some significant new items see the pictures.

4. More than 50% of all lumber is unitized; an NLRDA survey found that at least 492 lumber mills will strap their shipments for mechanized handling. Of these, 376 said they make no extra charge for strapping in standard units, because they save enough on mechanized carloading to offset their strapping cost. Most of the others will swallow their $0.50 to $3 charge rather than lose a good customer. “With a 15,500-lb fork-lift, dealers can unload unitized lumber from wide-door box cars for 30¢/mbf compared with 51.65 or more to unload loose lumber one piece at a time,” says James Wright of NLRDA.

5. Lumber dealers and lumber manufacturers have agreed on a standard unit lor unitized shipments—48” wide by a nominal 30” high (or six McCracken packets 24” wide by nominal 7” high). These units make it easy to load as much as 48,000 bd ft (say 120,000 lb) in a 50’ box car—much more than the average for loose-loaded cars.

6. The railroads have responded by adding 20,000 more box cars with doors 12’ or wider for forklift unloading (a 21% increase while the total number of box cars was falling 6%) and by cutting their freight rates twice on lumber shipped in heavily loaded cars. First was a 1958 cut of more than 50% on that portion of the load in excess of 40,000 lb; later came a 1961 cut on the West Coast (still pending elsewhere) of 7¢/cwt on 70,000 lb-plus carloads (which works out to more than 5¢/mbf on that portion of the load in excess of 70,000 lb).

7. More unitized lumber is being shipped on flat cars, and NLRDA studies show that flat cars loaded with the new Type 6-B floating-load method can be unloaded for at little at 5.4¢/mbf. For long hauls these shipments should be protected with water-proof paper. This costs from 75¢ to $2.30/mbf, but the cover can pay off if the lumber is to be stored in the open.
These carriers cut handling costs for the dealer—and the builder

Says NRLDA’s James Wright: “Since 1958 carriers that move material from the yard to the job site have undergone more radical changes than any of the dealer’s other equipment.”

The reason: today’s components and lumber packages are far too bulky to be handled by a truckdriver and a helper. So manufacturers have pioneered a new type of vehicle—the self-unloading carrier. It cuts the lumber dealer’s cost because it takes only one man—the driver—to unload it, and because it unloads in a fraction of the time and at a fraction of the cost of hand unloading. And it helps the builder because it can handle a more efficiently packaged load, can deliver it to the best spot (in some cases, right on the roof or inside the house), and never takes any of the builder’s high-priced labor to help unload it.

Says Wright: “Our survey shows that one third of the retail dealers plan to increase the mechanization of their materials handling in the coming two years. And most of the gain will be in self-unloading vehicles.”
TIME STUDY MAN lists what each man does and how long it takes, so later analysis can show where time is being wasted and raise productivity.

New rule
No. 4:

Restudy what your men do, to help them waste less of the time you pay for

Half the manhours you pay for on most jobs are wasted because the job was not planned right, so the right tools were not handy at the right place at the right time, or the right materials were not delivered to the handiest spots or materials were not stacked in the right order for erection, or you bought cheap materials that took too long to fit, or your workmen had to come back twice to finish a job they could have done on one trip.

Even “America’s most efficient builder”, Bob Schmitt of Berea, hopes to cut his labor costs another $2,000 per house as a result of the time-&-motion studies now being completed on his operation by industrial efficiency engineers from the Stanley Works. Already this study has suggested ways to cut his foundation manhours from 170 to 105 by eliminating idle time and wasted motion.

Builder Eddie Carr of Washington, past president of NAHB, cut his bricklaying costs $150 a house by adopting the “SCR masonry process” worked out after careful time-&-motion studies by the Structural Clay Products Research Foundation to help bricklayers do better work for less. A midwestern builder cut his labor costs per thousand bricks from $81 to $43.50 by adopting this same process, cut them another $7.50 to $36 by buying his bricks in convenient, easy-to-spot 100-brick packages.

The SCR process, with its precision corner-posts, its precision guide lines, its working level scaffold, and its hand-level brick supply takes eight manhours to get set, but once ready it makes it easy for bricklayers to lay a thousand bricks a day. See page 156.

One good way to cut your labor waste is to make sure you are using just the right number of men in each crew. Reports Jim Lendrum: “By studying men on the job, we found that two men—a carpenter and a helper—can lay a floor faster than three. We found that three men—two carpenters and a helper—can put up wall panels or trusses more economically than four men—because four men don’t make two teams; they make one inefficient three-men-and-a-helper team. We found that wherever you can use two teams on a job, five men, not four, is the magic number.”

No house was ever built that could not have been built better for less if the work had been better planned and the work better scheduled.
New rule No. 5:

Don't waste any 10¢-a-minute time on green lumber to save 3¢ a stud

This is the most penny-wise, pound-foolish chisel a builder can commit.

Green lumber was all very well back in the days of wet plaster, when the framing lumber was bound to swell and then shrink as tons of water dried out the gypsum. But now that all production builders build with drywall and all smart builders build with panels, green lumber is an anachronism you cannot afford.

Green studs cost about 65¢; dry studs cost less than 3¢ more. So if a green stud makes a carpenter or a drywall finisher or anybody else waste even 20 seconds, the green stud becomes more expensive than a dry stud. And don't forget that the in-place cost of a 65¢ stud averages nearly $5 (according to the Small Homes Council), so it is much more profitable to save dollars on framing labor than to save pennies on framing lumber.

Green lumber is the No. 1 cause of nail popping, the No. 1 cause of plaster cracks. Green lumber can make paint blister and glue fail. Bent members of green lumber are difficult in conventional one-stud-at-a-time construction because they waste carpenter time. They are just plain impossible in panel construction. What can a carpenter do to align a twisted stud in one panel with a straight stud in the next panel?

And dry lumber framing is much stronger. Says a Forest Products Laboratory Publication:

"Panels made by nailing green lumber to a frame and allowed to season one month before being tested were found to be about half as rigid as similar panels made of seasoned lumber and tested immediately; tests have shown that a box nailed in green condition, dried in storage 45 days, and tested at 10% moisture content may have only one-fourth the strength as when made of dry lumber."

The dryer the climate, the more important it is to build with dry lumber, because the drier the climate the more shrinking you are bound to get from green lumber.

Not much green lumber is shipped into the Middle West, because the added cost of shipping tons of water in green lumber by rail makes green lumber cost almost as much as dry. The Department of Agriculture says drying lumber to 19% cuts the shipping weight of Douglas fir from 2,900 lb mbf green to 2,200 lb dry; western hemlock from 3,400 lb green to 1,900 lb dry; southern pine from 3,800 lb green to 2,600 lb dry. But where rail freight costs are no problem, builders are wasting millions of manhours a year on green lumber bought from local mills, brought in by coastal barges (as in California) or brought by boat (as on the East Coast).

All big lumber mills would prefer to sell dry lumber if builders would pay the extra cost of drying—roughly $6 or $7 mbf for studs, roughly $12 for bigger members largely offset by lower freight costs for shipping less water. The Southern Pine Association permits its grade mark only on dry lumber.

Lumber is second only to coal as a source of freight revenue for the railroads; it provides 19% of the total for some carriers (like Southern Pacific). Nobody ships dry lumber by water (where it might get soaked)—so if the railroads want to get more lumber shipped across the country or along the coast by rail instead of by boat or barge, they might be smart to join the lumber producers in promoting the economy of building with dry lumber.

OCTOBER 1961
New rule No. 6

Give your men the latest tools so they will waste less of your time. For example:

To move earth . . .
... insist on machines that let one operator do the work of many. This 15-yd pan scrapes, loads, transports, dumps, and levels in one continuous operation, saves you four machines and operators, and changeover time.

To dig trenches . . .
... use a power ditcher. It can cut trenches for pipes and wires at 800' an hour. It can dig foundations five-houses-an-hour, whereas a laborer with a shovel can't dig one in a day. Machine also has backfill blade.

To pave your streets . . .
... use a slip-form machine to pour the road and both curbs in one pass. It can lay 1,000' of 25'-wide road a day—twice as much as a conventional paver—and do it with a crew only half as big.

To build beyond power lines . . .
... use a portable generator. It can pay for itself in four or five houses by letting you use all your labor-saving tools. Cost: about $800 for a 5,000-watt unit—big enough to run several tools.

To keep in touch with your men . . .
... use a radio-telephone hookup. For Florida Builder Charlie Cheezem this lets one superintendent cover 60 houses. It cuts costly schedule delays, and speeds up jobsite decisions.

To finish concrete . . .
... insist on a power trowel. It works up to 20% faster than a hand trowel, can do a better job in two passes than a hand finisher does in three. And it quickly knocks down hard spots a hand trowel can't touch.

To fasten plates to slabs . . .
... use a stud driver. It's almost 30 times as fast as drilling and bolting, so cuts labor cost from 40c to less than 5c. Stud and cartridge cost 14c more, so the overall saving is 20c.
To spike framing timbers...

... use a pneumatic hammer. It drives spikes from 20d to 60d three times as fast as a carpenter with a hammer or sledge, leaves the operator far less tired and there are no bent spikes to pull out.

To nail sheathing...

... use a continuous-feed nailer. It can triple the speed of nailing sheathing, lets one man do the roof of an average-sized house in half an hour. It can be operated by unskilled labor, drives nails up to 16d.

To staple lath or backerboard...

... use a pneumatic stapling gun. It drives up to 200 staples a minute—four or five times faster than the best hammer man. Staples come up to 2" long, can also be used to nail decking and sheathing.

To work at ceiling height...

... put your men on stilts. They save at least an hour a day moving horses and planks from room to room, get rid of time-consuming obstructions, let your men work more comfortably and faster.

To hold up ceiling board...

... use a spider jack that lifts gypsum board (up to 4'x12') from shoulder to ceiling level, slides it in place, holds it firm for nailing. This jack lets one man do a job usually done by two or three.

To drive screws...

... use a spiral ratchet screwdriver. It's the least appreciated tool in the tool box. It makes six turns to a hand screwdriver's one, is much less tiring, lets a man drive twenty times as many screws in a working day.

To trim counter tops...

... use a laminate trimmer. Because it is designed for this single job, it adjusts for different cuts quicker, gets into corners that a router can't reach, can cut your finishing time 50%.

To finish drywall...

... insist on taping and spackling tools. This taper lays and beds tape three times as fast as a man with a hand knife—and does a better job. Spacklers for joints and nail holes save just as much time.

To keep track of costs...

... take advantage of automatic data processing or machine accounting systems. They can do in an hour what takes an accountant a week, and they can give you cost figures you can never get with manual systems.

To finish grade...

... use a specialized tractor attachment like this combination rake. It breaks up and levels earth in one pass, can do a better job in half an hour than two men with rakes could do in two days.

To move your trees...

... use a special rig like this front-end tree transplanting bucket. It digs the new hole, digs up the tree, moves and replants it. You can move three trees an hour, cut moving costs to $10 a tree.
New rule No. 7:

Don't plan, build, finance, or sell any new house that will need to be repainted in less than 10 years

The paint makers say that since World War II they have made more progress and learned more new ways to make better paints than in all previous history.

But the paint makers have been so sales-happy in the high markup repainting market (mostly do-it-yourself) that they have spent hardly a dollar to tell the new-house industry anything about their new products and how to use them. And the painters (too many of whom live by using inefficient tools to apply short-lived finishes) have had no good reason to spread the word of paints that will cut the repaint market in half.

So architects and builders go on complaining that bad paint is their No. 1 headache, because not one architect or builder in 100 knows how to get a better job with the new paints. Lenders go on financing houses whose No. 1 maintenance cost will be paint, because not one lender in 100 knows enough to insist on paint that will almost outlast the mortgage. And realtors go on saying as little as possible about paint, because not one realtor in 100 knows that freedom from repainting could be a most effective talking point for buying a new house.

This is without doubt the worst failure of communications in all the history of housing. It is so bad that last year all the architects, builders, lumber dealers, and manufacturers at the HOUSE & HOME Round Table on the Use of Wood in Tomorrow's House were unanimous that bad paint is the No. 1 threat to the future of wood.
Here are the most important facts you need to know:

You can buy many components with new long-lasting finishes

Specifically . . . 1. You can buy aluminum siding with a colored factory finish guaranteed to last 30 years (see p 142).
2. You can buy asbestos-cement siding with a factory finish guaranteed to last 15 years (see p 142).
3. You can buy wood siding with a factory finish guaranteed to last 15 years (see p 142).
4. You can buy doors and windows with a factory finish guaranteed to last 15 years (see p 174).

You can use new paints guaranteed to last at least ten years and probably 15 years. The news about paints is too big and too long to detail here. It involves a whole new chemistry of paint, with new plastic mediums instead of oil and new titanium pigments instead of lead. There are acrylic paints, latex paints, alkyd paints, epoxy paints, urethane paints, polyester paints, vinyl paints. All are better for some purpose than any of the old paints.

Most cost more than old-fashioned paints. All of them are worth more.

Here is what each new type of paint is best for:

FOR EXTERIOR WOOD SURFACES, use the new acrylic paints. They offer service life up to 15 years when used on new wood and you don't have to wait for dry weather to apply them, because they "breathe" and let moisture out of the wood without blistering. (The first acrylics called for oil-base primers that had all the drawbacks of oil-base paints. New formulations use acrylic primers.)

FOR A NATURAL FINISH, use a penetrating preservative stain. It will weather well.

FOR INTERIOR WALLS, use new one-coat solid or new low-odor multi-color spray paints. They are made of butadiene styrene or vinyl toluene resins or latexes or alkyds. Latex paints offer easier clean-up; the resins and alkyds give more durable finishes.

FOR CONCRETE AND BLOCK WALLS, use new polyester or epoxy paints that leave a surface that looks like tile. They are not cheap, but they will give you a clean, lasting, sanitary finish for much less than you could get such a fine appearance any other way. Or for general concrete painting, use breathing polyvinyl acetate paints.

FOR FLOORS, use new urethane varnishes or plastic lacquers. Both go down fast and dry fast, so you can build up a thick film quickly. And they wear like iron.

FOR METAL SURFACES, use an epoxy paint. Its ability to bond with metal is almost unique. Two-component epoxies contain little or no solvent and form a solider coat, but their pot life is so short (two days) that they must be batch mixed. One-component epoxies are solvent-thinned, so they have a longer pot life.

You can apply your paints with new spray guns for very much less than the old pumps. Labor is the most expensive thing you have to pay for and using high-production painting tools is one of the best ways to cut job hours.

ALL THE NEW PAINTS CAN AND SHOULD BE APPLIED BY SPRAY GUN WHEREVER POSSIBLE. One man with a spray gun can paint the outside of any one-story house in half a day. Bill Levitt painted the whole inside of one 6½-room Levittown, N.J. house in 45 minutes. Some of the new paints—the high-viscosity paints for airless spraying, for example—can only be sprayed on. "These are the best paints sold," says Andy Place. "When you specify them you know your painter can't waste time with a brush."

DO ALL THE PAINTING YOU CAN IN THE SHOP. You can use bigger and better equipment in a spray booth and do it with high production. You can use high-pressure airless or hot-spray guns, or flow-, roller-, or dip-coaters. Florida Builder Charlie Cheezem shop primes all his finish lumber—soffits, fascia, jambs, gable ends, trim—and saves $20 a house.

AT THE JOB SITE, USE THE NEW COMPACT AIRLESS SPRAY GUNS. You can now get models small enough to be portable but efficient enough to make big savings. Airless spray cuts overspray, reduces clean-up, limits the need for masking, and lays down a heavier paint film in one pass. Or, if wind causes too much overspray, use pressure rollers like Phoenix Builder John Long. They are not as efficient as sprays but they are many times more efficient than brushes.
New rule No. 8: Build your houses complete—and good

Almost anything and everything homebuyers add after they move in will cost them twice as much as it would have cost the builder to include during construction; and so will everything, without exception, that they have to replace because the original product was not good enough or big enough.

So the one best way to offer a better value for less cost to the buyer is to include in the house everything the buyer seems sure to need. That means, for example and specifically:

Include air conditioning: "Wherever summers are hot, any house built without air conditioning will soon be obsolescent almost everywhere," says FHA Commissioner Hardy. Adding central cooling to a good forced-air heating system should add less than $500 to the first cost of a merchant-built 1,500 sq ft house, thereby adding say $30 to the down payment and $3 a month to the carrying charge. It might well cost the homebuyer $1,000 to add later, payable $200 cash and $30 a month on high-cost consumer credit.

Include adequate wiring: Homebuyers must often spend $100 the first year for additional wiring that would have cost the builder less than $10 while the house was being built, according to a survey by Detroit Edison.

Include all the appliances: Rangetop, oven, disposer, dishwasher, exhaust fan, refrigerator, freezer, appliance center, and laundry. They cost one-tenth as much to install during construction, they can be financed under the package mortgage for less than $150 down and $5 a month, and they cut the cost of selling the house. Builders can buy them for 30% less than consumers (unless the consumers are rich enough to pay cash)—and FHA requires no more income to buy a $15,000 house with all the appliances included than FHA requires to buy a stripped-down version of the same house without any appliances at all!

"Nobody expects to put his old radio and his old turning signal in his new car," says Harvey Kayne, builder of Maryland City, "and nobody should have to move his old appliances to his new house. This is the best chance he will ever have to get a bargain in new appliances with 30 years to pay for them."

Include wall-to-wall carpet, curtains, and drapes: Within the first year they cost most homebuyers up to five times as much as the down payment, and worry over what they will cost is one of the biggest reasons 19 out of every 20 model-house lookers decide not to buy. FHA will not finance them for fear of the retail furniture dealers' lobby; but most savings and loans (who provide almost as much mortgage money each year as all other lenders combined) are glad to finance them as part of the house. Smart builders often make a deal with their local rug and drapery dealers to get these essentials 30% off; and wall-to-wall carpets cost much less if the house is planned so the room will fit the standard widths in which carpets are made—9', 12', or 15'.

Also . . .

Include adequate insulation (which will always pay for itself), screens (often a scandalous racket for suede-shoe operators), lavatories big enough to wash your face in (they cost only $6 more than what most builders buy), long-lipped reverse-trap toilets (less than $10 more), locks with a safety catch to keep burglars out ($1 more), long-warranty water heaters ($10 more, but $200 cheaper over ten years), etc, etc.

FHA requires less income rather than more to buy homes built and equipped with quality, low-maintenance products that will make the house cost less to live in.
Now let's look at the better-for-less news in each part of a good house

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The better-for-less news about floors and foundations is:

Crawl space can now cost less than slabs, because...

You can now buy all your components for crawl-space floors and foundations pre-fabricated, whereas slabs must still be poured in place.

So smart builders are finding ways to cut their crawl-space costs 25% below 1958 (nearly $500 for a 1,500 sq ft house), whereas slab costs are still the same.

**For crawl space foundations,** you can buy precast prestressed concrete grade-beams 4"x24" as long as your house. Builder Andy Place pays the local concrete plant $1.65 per linear foot for them.

Or you can buy steel bar-joists for your foundations and put them together like an erector set. The NAHB Research Institute is working on the costs and details of such a quick and easy system, enclosed in an insulated asbestos-cement skirt. (For details of these alternatives see opposite.)

**For the under floor structure** you can buy house-width junior steel beams. Andy Place pays 40¢ a linear foot for them installed, including wood nailers and clips and says the steel costs less than any other material that would work as well. Space them 4" o.c and support them at two intermediate points.

**For the floor** you can buy your choice of at least four panel systems—all new, all good, all using plywood or plyplank, all cheaper than conventional floors (see p 136 for details of each system). In one of them the panels do double duty as both structure and subfloor; in two of them the panels do double duty as subfloor and finish floor.

With these component systems you can now finish both your foundations and your floor in a single day, instead of weeks. And your crawl-space construction will offer several by-product savings and advantages, including:

1. Some small savings on your plumbing.
2. Some small savings on your wiring (because of shorter home runs under the floor than through the ceiling and easier passage under doors).
3. A sizeable installation saving on heating by using the crawl space as a plenum.
4. Perhaps a sizeable saving on grading if the house sits on a slope (this may also permit some usable under-floor storage space).

In most places buyers prefer crawl-space houses because they think their floors are easier underfoot; but don't build crawl-space if you are worried about water conditions. Some crawl-space houses sit over damp and stagnant lakes; on those sites a well built slab would be dryer.

Here are ten good rules for better crawl space

1. Get a soil analysis and engineer your foundations. On most soils this will let you space your piers farther apart or get by with four shallow corner pads 2'x3' and one intermediate pad 2'x3'. Without the engineering FHA will require piers 8' o.c.
2. Set your house low by supporting your floor joists on steel hangers, so the tops of the joists will be flush with the top of the grade beam. There is no reason why a crawl-space house should stick up out of the ground any higher than a slab.
3. Scoop out shallow depressions for the pads that will support your interior piers.
4. Cover the ground with a 4-mil polyethylene vapor barrier. This comes in widths up to 20'. Just overlap the sheets 6" where they meet.
5. Pour the pads for your piers on top of the vapor barrier. That way you won't have to waste time cutting and fitting around the piers. Use a stiff concrete mix.
6. Use solid 8"x8"x16" concrete block for the piers and push them into the pads. Use a house-width jig to make sure the tops are all the same height as the joist hangers.
7. Provide outside light and air. Daylight costs less than electricity. Use vents that can be screened in summer and closed in winter from the outside. Put them near the corners for better cross ventilation.
8. Nail or glue rigid installation to the foundation before you set your floor joists. It will never be so easy later.
9. Provide outside access. Don't mess up your floor framing for a little trap door. Where grade allows it, a 2" concrete slab of excess ready-mix will provide extra bulk storage under the house at minimum cost.
10. Heat your crawl space. Close the vents in winter and leave heating lines uninsulated. This will help give you a warm floor and a dry crawl space. Some builders use the crawl space as a plenum and save up to $50 on their ductwork.

If you still build slabs, you will find 17 good ways to get better slabs for less in our September '58 issue. They are still as true as ever.
You can use prestressed concrete grade beams

They'll give you all the advantages of off-site fabrication: stable costs, good quality control, and a weatherproof job. And they'll speed up your site work. Andy Place, whose grade beam is pictured here, sets his foundations in a morning, has everything ready for his flooring system (next page) in one day. Total cost: less than a slab by 34¢/sq ft.

Place's biggest gain is in his winter building. He now invests less than $100 a house (in site-skimming and piers) to be ready to build houses in midwinter, compared to over $800 per house for a slab, (or as much as $1,200 for that same slab if it has to be poured and cured under a heated tent).

Or you can assemble steel bar-joists like an erector set

This system, being developed by the NAHB Research Institute, substitutes steel bar girders for the traditional masonry foundation. Steel posts are set in pier footings, and the steel girders hang on them much as side-rails hang on a bed headboard (see detail, right). An insulated asbestos-cement skirt encloses the crawl space. A single row of piers (down the middle) gives sufficient center support for a 32'-long girder.

The Research Institute estimates the new system will cost as follows: footings, skirt, and insulation, 12¢/sq ft; steel framing, 40¢/sq ft—a total of 52¢/sq ft in place.

Any flooring system can be laid over the new foundation—conventional joists 16" oc, or one of the new single-layer systems shown on the next two pages.
These four floor systems have in common less layers, less parts, less time, less cost

They may cost more for materials, but they save twice as much on on-site labor. Each system has its own advantages. Which costs least will vary from place to place—depending on availability, shipping costs, or local competition.

All four systems: 1) form the deck fast with big sheets; 2) use thicker or reinforced material to permit wider spans; 3) use heavier joists spaced farther apart, and 4) let the house be set lower to the ground. (But if you use joist hangers or foundation pockets to get this low look, be sure your joists are made of steel or plywood box beams. Dimension lumber will shrink, while the foundation walls will not, and the result will be bad gaps between the flooring and the joists all around the perimeter of the house.)

Three of these floor systems were engineered for the housing industry by the Douglas Fir Plywood Association, the fourth by a big lumber company.

You can buy prefinished oak veneer on 1 1/8" plywood 4' x 8'

Andy Place uses a version of 2-4-1 flooring in the method shown below. It gives him these advantages:

A single layer system that combines flooring, subfloor, and enough structural strength to span 4' between beams.

A whole floor system made of these five components: steel beams (which cause no shrinkage problems), wood sleepers, clips to hold the sleepers, steel beam hangers, and the plywood.

A fast system that a four-man crew can complete before lunch.

A low-cost system which, combined with Place's precast grade beam (p 135), gives a foundation-to-floor cost of $1.10/sq ft for oak flooring, or—if fir plywood and asphalt tile flooring are used—a cost of 82¢/sq ft, 3¢ cheaper than his slab-and-asphalt cost.

(Place spent years perfecting his slab, has worked on this system only a few months. "We should be able to squeeze still more water out of it," he says.)

The 1 1/8" oak plywood is available in 4'x4' sheets at 55¢/sq ft, and the fir plywood in full 4'x8' sheets at 27¢/sq ft. Both have 1&g edges (see drawing at left) to eliminate the worst feature of the original 2-4-1 floor system: the blocking needed every 4' between beams.

Place's floor uses 1 1/8"x5" I-beams that weigh 4.4 lb. They are dipped in asphalt to waterproof them, and also to eliminate any squeaking between the beam and the 2x4 sleepers on top. The steel beam hangers are also dipped in asphalt. They are then hooked over the top of the grade beam. Any discrepancy in height is taken up by a compressible fiber-glass sealer strip (drawing, right).

Another cost saver: the crawl space is used as a heating plenum, needs only stub ducts (drawing, lower left) to assure even distribution. This system gives a warm floor and works as well for cooling as for heating.
Or you can use 3/8" plywood reinforced with stringers

The stringers are stapled to the under side of a 4'x8' sheet (photo, right) 16" oc. The 2x4 stringers rest on ledgers nailed to the side of the floor girders, while the plywood is lapped over the girder (drawing, below). One end stringer projects beyond the panel to serve as blocking. (This stringer is missing in the photo above, since the panel end will rest on the center girder at right.)

Basically, Insta-floor is like 2-4-1: both use full 4'x8' sheets of subfloor, supported by girders 4' oc; both are self-blocking, and both were developed by DFPA. The big difference lies in materials cost: an Insta-floor panel made with 3/8" plywood may cost 10¢/sq ft less than a 2-4-1 fir panel.

FHA permits 3/8" plywood subfloor under strip flooring, otherwise requires 3/4" plywood.

Insta-floor goes in as fast as 2-4-1. Builder George Osborne, Chehalis, Wash. staged a demonstration, laid 1,700 sq ft of subflooring with a four-man crew in just ten minutes. In his regular operations, Osborne finds Insta-floor up to 17¢/sq ft cheaper than conventional floor.

Or you can buy hardwood flooring laminated to long plyplanks

This gives you the look of strip flooring in a single-layer floor system. And it also gives you the big pieces (12' wide and up to 20' long) you need to get the floor down fast.

Like 2-4-1 and Insta-floor, this flooring is heavy enough to allow floor beams to be widely spaced: 76" thick flooring is approved for beam spacing up to 36"; 1 5/16' flooring for beams 4' oc (although tests have shown it adequate for up to 6' oc).

Planks retail for about 42¢/sq ft, depending on the locality. Cost of installation is 4¢ to 5¢/sq ft, and one man can lay about 800 sq ft a day.

Planks have t&g edges, and are blind-nailed in the same way as conventional strip flooring. They can be applied with nails alone, but the best practice is to put adhesive on the floor beams before nailing. This gives an absolutely rigid floor structure, and is assurance against squeaking floors.

Joints are broken over beams, and usually staggered about one-quarter the length of the plank. But since standard lengths are 8', 12', 16' and 20', it is possible to layout the house so that all joints will fall under partitions.

Or you can buy long double-duty stressed-skin panels

These panels act both as a subfloor and as their own structural support (the 24' panel shown at right has two clear spans of about 11'). And in multi-level houses the bottom skin makes a smooth finish ceiling.

The panels are big, so they go down fast. With the panel at right, you would need just ten pieces for a 1,000-sq-ft house. Framing members on the male end serve as splices to the adjacent panel (see drawing, left).

And because they go down fast, they are inexpensive in place. A typical panel will cost 65¢/sq ft to buy, but can be installed for as little as 50¢/sq ft.

They are strong. Because they make a continuous structure across the center girder, they are about 20% stronger than 12' butting panels would be.

The panels give you a low-looking house because joists can be much thinner (those in the panel shown here are 2x4s and you can keep the floor near the grade line without making beam pockets in your foundation.

If you want an oak flooring surface on the panels, or on the Insta-floor system, the cheapest way to get it is with one of the several new flexible 3/8" thick floorings that can be laid with adhesives like resilient flooring.
The first better for less news about interior walls is:

New factory-made partitions like these can save you as much as $500 a house

Three years ago there were no factory-made interior partitions you could buy cheap enough to compete with local jig-made panels—or site-framed tilt-up partitions.

Today at least a half dozen manufacturers, including some of the very biggest, have developed prefab panel systems that can save you money because they cut out so much on-site labor. All these systems can cost you less in place than site-assembled walls faced with the same materials.

These new panels fall into two classes:

1. **Low-cost panels faced on both sides with gypsum or unfinished hardboard.** These cost as little as 19¢/sq ft in carload lots. They require joint taping and spackling, battening, or one of the new one-day, hard-finish, wall-and-joint coatings (see p 142). And they have to be painted or papered.

2. **High-cost panels prefinished on both sides.** They cost up to $1-and-more per square foot but cut total costs because they eliminate site finishing. Joints are treated as decorative elements (see p 118). Some of the surfaces are very handsome but the choice of materials, colors, and textures is still limited.

The unfinished systems eliminate most of the nails from vertical joints (which cuts spackling time and reduces nail popping). The prefinished systems hide the nails at floor and ceiling with prefinished mouldings so there is almost no touching-up of fastenings or joints.

Most of the new systems work only as interior curtain walls—and must be used in houses with clear-span roofs (see p 146) or in two-story houses framed without interior bearing walls (see p 158). And they all meet these requirements for easy erection.

1. They fasten to the floor and ceiling simply. They slip over runners, or they nail to the floor and ceiling through built-in top and bottom splines.

2. They join edge-to-edge quickly. They have t&g joints or slip over simple metal or wood splines.

3. They form corners wherever needed with minimum cutting, fitting, finishing, or extra parts.

4. They fit any length of wall. Most are easy to cut and their simple splines (if any) can be inserted at a site-cut seam. One system (see pictures at right) has an adjustable joint and a prefinished spline.

5. They take a door anywhere along the wall. They all work with 6'8" or 8'0" ceiling-high doors. Some systems include doors; all will work with prehung doors with split jambs or with the new snap-in metal door frames of the right thickness (see p 174).

6. They resist the passage of sound. All the new systems are at least as good acoustically as ½" drywall on studs, and some are far better.

7. They adjust to variations in floor-to-ceiling height. All have a tolerance of at least ½" top or bottom to adjust to the unevenness that exists in almost all houses (due to uneven truss camber, uneven slab, or unevenly set crawl-space piers).
Here is how a prefinished partition system goes together

**PARTITION PANEL** sits on floor runner, is nailed directly to ceiling through top rail. Wide joints between panels accentuate panelized look.

**SPLINE** fits into recessed edge. It has same surface as panels, is ripped from 4'-wide sheet, can be as wide as desired to stretch out wall.

**CORNER STRIP** is nailed over exposed edge of panel to finish off outside corner. Prefinished base covers nails at bottom of partition.

Here are assembly details taken from unfinished partition systems

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**1X3 RUNNER FASTENED TO FINISH CEILING**

**1X3 FASTENED TO WALL**

**HEADER PANEL** (CUT TO LENGTH)

**2X3 SPLINES**

**TYPICAL PANEL**

**TYPICAL CEILING DETAIL**

**PANEL**

**SPLIT JAMB**

**CEILING RUNNER**

**BASE SHOE**

**TOLERANCE FOR UNEVEN HEIGHT**

**TYPICAL DOOR-JAMB DETAIL**

**FLOOR PLATE ASSEMBLY**

**TYPICAL DOOR DETAIL**

**TYPICAL INTERSECTION DETAIL**

**TYPICAL CORNER DETAIL**

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**TYPICAL PARTITION ASSEMBLY**

**2X3 RUNNER FASTENED TO FLOOR**

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OCTOBER 1961
The better-for-less news about exterior walls is:

New panels promise any builder some saving and promise some builders a lot of saving.

Three years ago no manufacturer made skin-to-skin exterior panels. Today two very big companies are test marketing them (H&H, Oct '60 and Apr '61) and half a dozen more are getting set to follow.

All these systems will offer far more than today's shopbuilt panels, which include just studs and sheathing. The new panels are a one-piece substitute for siding, sheathing, framing, insulation, vapor barrier, and interior wall—the six structural layers of a conventionally built wall.

Both of the systems on hand use 4'x8' stressed-skin panels. Both have ways of hanging doors and windows that get rid of job-site fitting. Both are easy to cut on the site to fill off-modular spaces. And both need only joint treatment and paint to be completely finished.

Some of the upcoming systems won't even need to be site-finished—exterior and interior faces will come prefinished, or have the finish built in. And one future panel system may eliminate the foundation wall: NAHB Research Institute is testing a long stressed-skin panel (really a big box beam) that will rest directly on piers.

These new panels should permit a substantial cut in the direct cost of exterior walls. Here's how:

1. Crews can be small. Two men can easily handle the 4' panels (they weigh about 80 lbs), can complete the exterior wall of an average house in a morning.
2. Houses go up faster, so one supervisor—the highest paid man on the job—can oversee more houses.
3. There are fewer parts, and less site labor per part; so there will be less chance for costly mistakes. Even if your crew put all the exterior walls up backwards it would cost only about $50 to turn them around.
4. Material quotations are low enough—from 65¢ to 75¢/sq ft—so that their in-place costs can be lower than the in-place costs of conventional walls (which run from about 80¢ to over $1/sq ft). Quantity-production costs (no system is in volume production yet) should be 15¢ to 20¢/sq ft lower.

And the panels will save on indirect labor and overhead. Faster building means cheaper financing and insurance, and simpler inventory cuts office work.
The better-for-less news about stud framing is:

1. This new batt can just be stuffed between studs to cut wall insulation labor cost 75%

Friction alone will hold it in place for good, without any need of kraft or foil backing or any need of nailing. The long fibres are so resilient that even in a ceiling the batt sticks so well that hitting the joists with a hammer once a minute for weeks did not budge it.

Material cost is the same as kraft-backed insulation, but installation cost is minimum. With friction-fit batts, one man needed only 32 minutes to insulate all the walls of a 950 sq ft house.

2. This plywood box-beam over your openings can save the cost of a double 2x6 header

Three years ago the best and cheapest way to save the cost of individual headers over windows and the cost of jack studs to support them was to top all the bearing wall studs with a continuous double 2x6 header, which FHA approved to span any opening up to 5'6" in one-story houses. For a 40' bearing wall this costs $3 more for lumber, but it saves twice as much on labor by eliminating framing over openings. Only trouble was the 2x6 header itself was a tricky thing to build on top of the studs, thereby wasting much of the carpenter labor it saved.

So now the Small Homes Council has come up with an even better idea: Just glue-nail your regular plywood sheathing to the framing members over the opening to form a box beam. Then all you need is the easy double 2x4 plate all around, with no extra lumber cost at all and no extra labor cost.

3. This steel-and-wood header can save $12 in garage door framing

It is made of two 14-gauge steel sections (see detail) combined with 2x4s, and it will carry the roof load of a 28' truss house over a 16' garage door opening. NAHB Research Institute, which developed the header, estimates its cost at $27—$6 less than a pair of 2x12s with a ¾" steel flitch-plate, and $15 less than a 12" steel junior I-beam.

4. This insulation blanket can deaden upstairs footfalls for only 2¢/sq ft

Best way to muffle impact noise from above is wall-to-wall carpet, but this is the second best way and it costs very little. Just lay the blanket across the joists and nail the floor panels over it.

5. This little metal clip can save the cost of nailer studs at your corners

Clips replace backing studs in corners and at wall intersections, and they replace backer blocking above partition plates. They cost 4¢ to 5¢ each, so at recommended spacings (16" oc for walls, 8" oc for ceilings) they cost less to buy than studs. And since they are fastened with a single nail and require no cutting or fitting, they cost less to install than wood blocking. The maker says they can save $10 to $15 a house.
The better-for-less news about prefinished materials is:

**You can now eliminate the high cost of site-finishing on virtually every surface of the house**

And you have a big choice of prefinished materials with which which to do it.

All these new materials cost less in place than the same items site-finished. Some of them cost less to buy than more conventional materials they replace. Some of them save construction costs by combining structural and decorative functions. Almost all of them will save money for the homebuyer in lower maintenance costs, and thus may qualify the house for a bigger mortgage under FHA. And, last but not least, many of them help make a more handsome house.

On the exterior, for example, the new all-redwood plywoods combine most of these virtues. They are water-repellent treated so they can be allowed to weather without further treatment. With $\frac{3}{4}$" thick sheets, sheathing can be omitted over studs 16" oc; with $\frac{1}{2}$" thick sheet, sheathing can be omitted over studs 24" oc. Redwood is rot and termite resistant so it will last a long time. And as many a California house testifies, redwood is handsome.

Aluminum is another example. You can use prefinished aluminum everywhere on the exterior—siding, soffits, fascia, trim, rain-carrying systems, roof, doors, and windows. And most aluminum products now come in long-lasting acrylic and vinyl finishes, the newest of which is polyvinyl fluoride (only in white at the moment) that the manufacturer guarantees for 30 years. And foam-, fiberglass-, or fiberboard-backed aluminum clapboards can be applied right on the studs.

Or you can clothe the whole house in asbestos cement—sheet and clapboard siding, fascias, soffits, trim, and roof—with new plastic finishes that will keep the colors fresh for years.

Other prefinished exterior products that offer more than one prefinish advantage include new prefinished fir plywood siding (only in rural red to start) that actually costs less than unfinished A-face exterior plywood.

Or you can save as much as $70 a thousand sq ft on installed cost by using preprimed siding—cedar, redwood, hardboard, or fiberboard. All of these are back-and-edge sealed and water-repellent treated and have a long-lasting neutral face prime. (Incidentally, under these sidings, you will usually need sheathing and you can now buy stronger, better insulation board than ever before. The new board eliminates the need for corner bracing, holds nails better, and is rated according to the new thermal rating system developed by the Insulation Board Institute.)
PRINTED HARDBOARD is one of many low-cost, prefinished materials with a wood-grain look.

PREFINISHED PLYWOOD has rough-sawn rustic look, is used here with battens to panelize the wall.

ALUMINUM CLAPBOARD needs no sheathing with foam, fiberboard, or fiberglass backing, says FHA.

And of course there are those old established prefinished materials—stone, brick, concrete, and tile. Brick and block can now be laid with new fast mortars, facing stone comes in new precut, clip-fastened ashlar patterns, and tile comes in large sheet-backed pieces for faster installation.

Inside the house, the range of prefinished wall surfaces is almost unlimited.

You can get prefinished wood (or wood-looking) paneling in vinyl-surfaced gypsumboard, in printed-grain hardboards, and in printed-grain plywoods that cost less than earlier prefinished plywood. Better, but more expensive, are today's improved prefinished plywood, today's super-satined plywood, and today's plastic-faced architectural plywoods.

You can get fabric faces to give a softer texture in low-cost vinyl-surfaced gypsumboard.

You can get bright colored and patterned finishes in melamine-coated hardboard and in high- and low-density plastic laminates. All of the major laminate makers now have a lightweight, lower-priced sheet just for use on vertical surfaces. They also have new fireproof types for counter and table top that may be exposed to cigarette burns, etc.

You can get translucent sheets of fiberglass-reinforced polyester and acrylic with a wide range of decorative embeddings for use as dividers and screens.

You can get embossed and perforated hardboards in new decorative patterns.

You can get ceramic tile in bright new colors that match or harmonize with kitchen-appliance and bathroom-fixture colors and come in self-edging and self-cornering shapes.

You can get styrene plastic panels that go up in big seamless sheets to cover wet-area walls.

Inside the house, ceilings have become new decorative elements as producers bring out more and more perforated, fissured, and patterned acoustical and nonacoustical tile. Many of these have washable vinyl faces that will withstand years of wear. And many of them come in large sizes that speed installation. (See p 154.)

Also new are big sheet ceilings with vinyl acoustical faces that also act as insulation, modular ceilings that combine light and noise control, and many different types of plastic luminous ceilings. (See p 155.)

On the floor, prefinishing has been standard for years—in hardwood, resilient tile and sheet, and ceramic tile. But now you can also get prefinished, hardwood-surfaced, one-layer structural flooring. (See p 136.)
The better-for-less news about drywall is:

You can finish and paint drywall the same day it is hung on the studs

Just when everybody thought the plasterers were washed up and wet plaster dead as the dodo . . .

The plasterers are coming back strong with a new way to finish drywall with a single thin coat of quick-drying hard-surface plaster. The sponsors say this process is six times as fast as spackling the nail dimples, taping the joints, and feathering the edges. So it can knock at least two days out of the fastest construction schedule. Three plasterers can finish the drywall as fast as three carpenters, working just ahead of them can nail it to the studs; and the painters can follow three hours later.

This new method started, not with the big gypsum manufacturers, but with small plastering contractors alarmed to see their business dying as drywall took over. Almost simultaneously a half dozen plasterers scattered from Tampa to St Louis and from Lebanon to Long Beach came up with the same big idea and began applying it on their own jobs. Each developed his own slightly different formula. Most of them require expensive high strength gypsum, most of them use a synthetic resin binder, some of them reinforce their plaster with spun roving; all of them use so little water that the plaster is dry enough to paint almost at once. Some of the sponsors recommend taping the drywall joints with reinforced plastic tape as a precaution. (This is a quick job, for the tape will be hidden by the plaster.) Some further recommend filling the crack behind the tape with the same strong plaster. On the other hand, some say their plaster is so strong no taping at all is needed. Some recommend a 3/16" coat; others say the thinner the better, because a thin coat is more flexible and less likely to crack, so they recommend 1/16". At least one plaster can be sprayed on. Most of them take either a smooth or a sand finish.

As of September 20, FHA had “accepted” four of the new plasters and expected to accept more as fast as their test data are complete. Some installations have stood up for a year with less cracking than would have been expected with either wet
sprayed on . . .

finished rough or smooth . . .

plaster or conventionally finished drywall. The compressive strength is from two to five times the strength of ordinary plaster, depending on whether and how much lime is put in the mix. The surface is so hard that you cannot scratch it with a quarter; the silver wears away first. The hardcoat plasters stick better to backerboard than to drywall, because of the greater porosity and the rougher paper used. This may raise a jurisdictional row between the carpenters (who now erect drywall) and the lathers (who now erect backer-board)—a jurisdictional row that could end up with the builders deciding to stick to taping just to keep out of labor trouble.

Up to now, time is the only saving the new method assures, partly because none of the new hard plasters is volume-priced, partly because high-strength gypsum is more expensive—$44 a ton vs $18. Good plasterers average about 200 sq ft an hour, so the labor cost at $4 an hour is about 2¢/sq ft.

Glue nailing your dry wall can cut 2,500 nails from your walls and ceiling

FHA and the Gypsum Association have now approved glue nailing gypsumboard. This is probably a new way to build better, because there are less nails to pop and the continuous bond should be stronger.

It is not so sure to be a new way to build cheaper, because running an inch of glue up the studs (glue cost: about $5 a house) takes about as much time as driving more nails and finishing them with a spackling machine.

*Chart at right shows how many nails are saved.*
The better-for-less news about trusses is:

**Plates, jigs and presses like these**

**make better trusses cheaper everywhere**

Trusses offer such big savings (see *p 112*) that no builder who knows his costs would dream of framing his roof any other way.

Three years ago there was still some excuse for old-style joists-and-rafters, because 1) in some areas nobody sold trusses, 2) in most areas trusses were over-priced because there was so little competition, and 3) most 1958 trusses were glue-nailed, and you could never be sure they had been made right. So three years ago less than 100,000 houses were truss-framed.

But now:

1. You can buy trusses from a nearby fabricator almost anywhere and everywhere.
2. You can buy trusses 25% cheaper, partly because competition is getting hot and partly because . . .
3. Most 1961 trusses are made with metal plates and many plates are stamped out to do double duty as both nails and gussets. Metal plate trusses take as little as four man-minutes to fabricate; they can be made in a jiffy anywhere and any time, whereas glue-nailed trusses must be made under controlled temperature and humidity conditions and must set overnight under pressure.

So this year 450,000 houses will be truss-framed—300,000 with metal plates, 150,000 with glue-nailed plywood gussets. (Glue-nailed trusses are just as good if made right, but usually cost more and can’t be mass-produced.)

Next big saving on trusses will come from standardization, which will let everyone use the same lumber lengths and cuts for the six or eight most commonly used span-and-pitch combinations—24′, 28′, 30′, and 32′ spans (inside measurement), 3-in-12 and 4-in-12 pitches. The shift to metal plates makes this all the more important, because metal plates call for precise cutting and fitting, whereas plywood gussets work just as well with square cuts.

With standardization, wood members could be precut by the millions close to the lumbermills. This would make it possible to use inexpensive shorts and to save at least 6% on freight by shipping no waste. Even without standardization, one precutter in Oregon says he is saving truss makers in the Middle West 30¢ to $1.75 a truss.

Except in the worst snow-load areas, all trusses up to 28′ can be made with 2x4s and still provide limited attic storage over drywall ceilings. Longer spans with storage need some 2x6 members. (Metal plates may need heavier framing than plywood gussets, which are bigger and thereby reduce the unsupported lengths.)
Here are the best ways to frame the eaves

1. Keep your roof line low by mitring either the top of the bottom chord or the bottom of the top chord. Otherwise your truss will lift your roof 4″ or 6″ higher than necessary. Almost all metal-plate trusses are made this way. Many plywood gusset trusses are not.

2. Use a preassembled lookout to add a wide overhang. It saves the extra cost of long top chords and keeps trusses short and easy to handle. Except on low-pitched roofs (2-in-12 or less) this is the cheapest and easiest way to finish eaves.

3. Keep the roof line simple. Plan your porches, passage and garage entrances, and entries so they all fit under one big roof without sheds or extensions. Then support truss ends on beams and posts as shown in the detail above.

Here is the best way to truss an L-shaped house

1. Plan one bearing wall in your L-shaped houses. Then you can frame them economically with trusses. Most L-shaped plans lend themselves readily to an interior wall where the two wings meet. Most often it will run side to side across the L. (see top drawing).

2. If you cannot get a bearing wall where you want it, span the narrower wing with a steel beam above the ceiling line and support a bob-tail truss on a joist hanger. A glue-nailed plywood box beam might be cheaper, if carefully engineered for the job.

3. Cover the main roof with full sheets of plywood—but leave out any sheets that will be covered by the saddle trusses. No matter what the pitch of the roof, you can frame it with 2×4 trusses, each 4′ shorter than the next, set 2′ oc on the main roof.
The better-for-less news about roofs is still in the making

Never before has there been such experimentation in materials—rigid plastics, elastomeric plastics, glass laminates, wood laminates, lightweight concrete, tile, steel, copper, terne, aluminum, synthetic fabrics, foamed glass aggregates.

Never before has there been such experimentation in methods—lay-up, spray-up, precast, cast-in-place, laminated, molded, air-lifted, jack-lifted, or what have you.

Never before has there been such experimentation in form—barrel vaults, folded plates, domes, hyperbolic paraboloids, A-frames, Y-frames, delta-frames, flattops, bubbles.

Never before have so many architects, builders, and suppliers been seeking new ways to cure what's wrong with today's roof—too heavy, too impermanent, too many pieces, too small pieces, too many potential leaks. Roofs should be light to permit lighter walls, heavy to resist gales. They should be one big piece to keep out rain, many little pieces to expand and contract with changing heat and cold. They should be dark to absorb the sun's heat in winter, white to reflect it in summer.

So far nobody has come up with a new way to build better roofs for less money than you can build with better shingles (which last much longer but cost no more to install than lighter grades, so their only extra cost is for the better material).

No one can ever solve the roof problem without first solving the design problem of making the joints between bigger pieces look good instead of bad. Once that design problem is solved, the most hopeful material is Hypalon, factory-applied to plywood sheathing. This plastic is not damaged by sunlight or sun heat, costs only $5 per sq ft for the material and almost nothing to apply in the factory. This is the material used three years ago in the NAHB Research house outside Washington. It was very cheap and very practical, but nobody liked its looks.

So right now there are only two new ways to cut the cost of a better roof:

1. Use plyclips to save the cost of edge blocking. This is the cheapest way to span 24" between trusses with 3/8" plywood. Without either plyclips or blocking FHA requires either 1/2" plywood or 16" truss spacing.

2. Fasten your sheathing with a power nailer, 50 nails a minute, four roofs a day. (This is much faster than anyone can lay the plywood ready for nailing, so divorce the two operations. Don't let the man with the nailer waste your time waiting for something to nail.)
The better-for-less news about cooler attics is:

You can now buy continuous vents for ridge and soffits by the yard

The combination will ventilate the attic so much better than the little gable vents, roof vents, and eave vents most builders use that they can cut the heat load of an air conditioned house at least 13%.

Says Big Georgia Builder Fred Fett: “We use a perforated prefinished aluminum soffit system and a ridge vent in all our building. It gives us a breeze in the attic that gets rid of all moisture—we had been plagued by delamination of the plywood deck. We find it much easier to build our gable ends without installing louvers—and much easier to roof without square roof vents. The soffit vent system costs only 5¢ a foot more than ordinary plywood in place and painted, but it has far more buyer appeal; it is easier for us to work with, and it eliminates future maintenance.”
Here are six good reasons for ridge vents

1. **Ridge vent does a better ventilating job**, partly because it puts the outlet at the very highest point, so no heat can be trapped above it; partly because it ventilates the whole length of the attic uniformly; partly because it provides much more net ventilating area (NVA)—50% more than FHA requires. For example: a 36' ridge vent gives 684 sq in NVA, 10% more than a pair of 8'-long gable-end louvers (which are a lot bigger than the louvers most builder install).

   Because it provides much better ventilation it keeps the attic much cooler. Tests show that inside and outside temperatures under a ridge vent do not differ more than 10°F, even on a sunny summer day.

2. **Ridge vent lets in less rain or snow.** This was not true when ridge vents first came on the market, so some of the builders who tried them first gave them up. To correct this failing, the manufacturer studied his product in a wind tunnel, learned how to redesign the strip with extra flanges that set up enough turbulence to deflect wind-driven rain or snow up over the peak instead of into the louver.

3. **Ridge vent costs less to buy.** If you can't buy it locally, you can order it by mail for about $3 a foot, or about $21 for enough vent for a 36' roof, including end plugs and joint fittings. This is at least $4 less than you would have to pay for a pair of 8' gable-end louvers that would not do as good a job.

4. **Ridge vent is easier to install.** It takes the place of the roofing ridge: you just stop the sheathing 7/8" short of the ridge and nail the vent on top. It needs no flashing, special framing, or complex cutting in (as gable-end louvers and roof vents do).

5. **Ridge vent look better.** In fact, you can hardly see it, as the picture (opposite) shows, whereas the half-a-dozen square roof louvers or two 8'-wide gable-end louvers needed to provide equal ventilation are hard to fit into a handsome house.

6. **Ridge vent is the only vent that looks right on a hip roof:** It is the only way to avoid the broken roof line you get with a gable-end louver in a hip roof (see photo right).

Here are four good reasons for continuous soffit vents

1. The soffit vent comes complete. You don't have to assemble soffit material, install vents, screen over the openings.

2. It comes in big sizes, including rolls up to 50' long and sheets up to 4' wide.

3. It saves site finishing. It comes prepainted or preprimed in aluminum, laminated fiberboard, hardboard, and asbestos cement board.

4. It costs less. Most systems need no outlookers; they just slide or snap into factory-made channels, so they minimize on-site labor.
The better-for-less news about ceilings is:

**Two men in less than one hour can install a lightweight acoustical insulating ceiling**

Most ceilings today weigh much too much, require too many trusses or joists to hold them up, and need too many on-site operations to finish them and make them functional, so they cost much too much. For example:

Half-inch drywall ceilings for a 32'x40' house weigh 1.5 tons. They cost even a big builder at least $64 for the gypsumboard, at least $51.20 for labor to install and finish, and at least $64 to paint (unless he can spray). They perform almost no function except to hide the joists or trusses, so he must figure at least another $12.80 if he wants a foil vapor barrier, at least another $38.40 for 2" insulation, making $230.40 in all—plus another $200 if he wants to add the cheapest acoustical treatment.

This Fall a new kind of ceiling is coming on the market—a two-mil vinyl skin laminated to 2" of glass fiber insulation. It comes plain or in a wide variety of patterns, in sheets 4' wide and any usable length. It spans 4' without sagging, can be installed by just slipping it into T-bars. It weighs only 5 oz/sq ft, or 15 lb for a 4'x12' panel, so two men could easily hang the whole ceiling for a 32'x40' house on the T-bars in less than an hour. It is washable and easily removable and does quadruple duty as ceiling, thermal insulation, vapor barrier, and acoustical treatment. Introductory price to big builders is 17c/sq ft for the ceiling material and T-bars. This works out to a material cost of $217.60 for the 32'x40' house.

First user is Builder Don Huber of Dayton, who is using it in the kitchen, utility room, family room, and baths of his model houses this fall. He would use it in the living and bedrooms too if he were sure homebuyers would like the looks of the visible support bars. He expects a bonus saving of $50 on the cost of a dropped ceiling around his recessed kitchen lights.

**CEILING PANEL 4'x20' weights only 25 lb.**
And here are four more product developments you should know about:

1. You can use big planks instead of small tile to apply acoustical ceilings faster

   This acoustical plank costs 20¢/sq ft, or no more than acoustical tile of the same quality, and it offers three savings:

   1. It cuts layout time—you don’t have to set up guide lines or start your layout in the middle of the room.

   2. It eliminates the uneven joints that often develop with tile (an error that gets cumulatively worse in bigger rooms).

   3. It cuts application time in half. In a test run, two men installed the new plank in a 12' x 24' room in an hour—half the time it took them to install regular 12" x 12" tile.

   Each plank is 16" wide, 10' or 12' long, 7/8" thick, with t&g joints on the long edges. So, since most rooms in the house have one dimension 12' or less, a single length of plank stretches from wall-to-wall. Where planks can run at right angles to the trusses, they can be stapled right to the bottom chords; where planks must run parallel to trusses (2" oc), furring strips will be needed.

   Planks are finished with white washable flame-resistant paint and can be ordered perforated or fissured. And like tile, they can be glued to a gypsum ceiling.

2. You can pick from many roof decks that combine ceiling, sheathing, insulation

   And three-in-one roof decking saves up to 50¢/sq ft compared to the installed cost of wood sheathing, insulation batts, gypsumboard, and paint.

   New deckings come with finished acoustical undersides, smooth painted, or finished with a printed wood grain. Fiberboard decking 3" thick, 2' wide, and up to 16' long can span rafters 4" oc, so you can save money by using heavier rafters spaced further apart. Decking has a built in vapor barrier, a rubber gasket at the joint, and meets FHA nail-holding requirements for direct application of asphalt shingles.

3. You have a wider choice in prefinished predecorated ceiling materials

   Inexpensive (15¢/sq ft) fiberboard tile come regular perforated, random perforated, pinhole perforated, fissured, printed, prepainted, or vinyl covered. They now also come in many sizes: 12"x12", 16"x16", 12"x24", 16"x32" and 24"x24", 24"x48".

   And fire-resistant tile for residential use are now available at a slight premium (5¢/sq ft). One maker has just announced a chemically treated fiberboard tile with a 0-25 flame-spread rating and another manufacturer has made mineral tile that does not require installation by a ceiling contractor—it has a self-leveling t&g edge, can be stapled or glued by standard methods.

4. You can combine luminous and opaque acoustical ceilings cheaper than ever

   Now you can buy a complete acoustical luminous ceiling that uses inexpensive aluminum T-form channels on a 2' module to hold either acoustical panels or acrylic light panels.

   And you can buy a wide variety of flat, corrugated, colored, and patterned plastic sheets and rolls to fit a carpentered system.

   Or you can buy perforated plastic that serves for both lighting and noise control.
The better-for-less news about brick is:

Soon you can build bearing walls of brick for less than yesterday's cost for veneer

The big news about brick is a new high-bond mortar developed by Dow after five years of research for the Structural Clay Products Foundation.

The new mortar, announced last November but still under final field tests, is five times as strong as ordinary mortar, so . . .

1. With the new mortar a single course of 4" brick will "be an entirely adequate load-bearing wall in both one-story and two-story houses, saving all the cost of the masonry back-up or wood studs required for structure behind a 4" thickness of brick laid with ordinary mortar," according to SCPRF Director Robert B. Taylor. The new high-bond mortar will make a structural brick wall out of what is now just a decorative brick veneer.

2. With the new mortar, brick walls can take hurricane winds without reinforcing. (Tested on a 5' span, a 4" brick wall withstood a uniform horizontal force of 250 lb per sq ft, vs 50 lb with standard mortar.)

3. With the new mortar, brick panels can be tilted, lifted, and moved long distance without mortar failure. So bricks can be laid in panels in the shop where the weather is always good, and they can be laid in a horizontal jig to make the bricklayer's work fast and easy.

As soon as field tests and accelerated weather tests are completed, the Structural Clay Products Institute and the Bricklayers' Union will jointly seek code approval.

Until the new mortar gets code approval

Right now the best ways to save money on brick are:

Use 6" bricks in bearing wall . . . use 4" brick in reinforced panels . . . or nail on thin bricks for veneer
For on site brick laying, follow the SCPI process:

**CORNER POLE**, center, carries the line holder which lets you set your course guides quickly and accurately. Towers, rear, are part of one adjustable scaffold system.

**ADJUSTABLE SCAFFOLD** lets mason work at most comfortable height for each course.

This makes it easy for brick layers to lay 1,000 bricks a day.

For insulation behind a wall one brick thick:

You can glue on foamed plastic... and plaster or drywall it... or you may find it cheaper to fur.

OCTOBER 1961
The better-for-less news about two-story houses is:

You don’t need interior bearing walls to support the second floor of the house

All you need is an 8” steel I-beam down the center of the house, supported by a 4x4 buried in each end wall and one or two intermediate 4x4s or lally columns buried in a partition or hidden in a closet.

The I-beam would weigh 15 lb/ft, span up to 15’, cost about $1.50/ft or about $60 for a 40’ house. It would save more than that by permitting the use of non-bearing partitions, and save many times that much by permitting on the ground floor of a two-story house all the big economies that truss framing permits on the floor next to the roof (see page 112).

This money-saving idea comes from Architect Leonard Haeger, former research
Here is how it would work for Huber

Here is how it would work for Levitt

Here is how it would work for Midwest’s Lexington

director of HHFA and NAHB, later construction vice president for big Builder Bill Levitt. Says he:

“Into this I-beam you could frame 2x8s 16” oc, notched to fit the beam and supported at their perimeter end either by a platform or by a notch in a balloon-frame two-story stud. Or you could use 8” bar joists 4’ oc. Their open web would make it easy to run mechanical services through the floor, but they would cost a little more than wood and their wide spacing would create a real ceiling-support problem unless the house were designed to take advantage of the new light-weight ceiling that span 4’ without intermediate support.” (See page 154).

Wood joists and steel bar joists would both span 14’, so this floor framing system would work for any house up to 40’ long and 28’ wide—which is a big house (2,240 sq ft). Both would provide a flat ceiling underneath, so the architect would have almost complete planning freedom, except that somewhere near the center of a 28’-long house or somewhere near the points of trisection of a 40’ house he would need a partition or a closet to hide the interior post or posts.

Above the beams and joists you could lay any of the cost-cutting panelized floors described on page 136.

Adds Haeger: “I have tried this system out on the plans of dozens of houses now being built by the builders for whom I am consultant, and I have found that with minor variations it is easy to work on every plan and saves money on every plan. I have talked the idea over with my former associates in the Levitt organization and also with my big Ohio client, Charles Huber, and they all think the idea is practical and promises big savings.”
The immediate better-for-less news about plumbing and bathrooms is:

You now have 12 good new ways to cut costs

1. New wall-hung home toilets

Since 1958 every major maker has brought out a tank-type wall-hung model for residential use. All smart homebuyers prefer them because they make the bathroom floor so much easier to clean; all smart builders would probably buy them, except that most of them still cost twice as much as most builders pay for toilets. Wall-hungs let you keep your plumbing above the floor. Says Bob Schmitt: "This can save you $150 on a two-bath house."

2. New low-cost mounting for wall-hungs

Plumbing Expert Carl Boester just predrills a 2’ length of 1/4” plywood to take mounting bolts and waste pipe. Then he glue-nails (or bolts) it to the stud faces so it is flush with the 5/8” drywall (so later it can serve as the tile base). Cost: less than $1, vs $30 to $35 for the kind of chair used in commercial building.

3. New rear-discharge toilet

This is by far the cheapest fixture you can use with above-the-floor plumbing. It is priced wholesale only $10 higher than the cheapest toilet builders buy. Incidentally, it makes the bathroom floor almost as easy to clean as a wall-hung, because there is no floor behind it.

4. New cheaper copper drainage pipe

This DWV pipe is now accepted by most codes. This should save you money three ways: First, it is cheaper—a foot of 3” DWV costs $1.08 vs $2.27 for type L and $2.64 for type K. Second, it weighs less—1.67 lb vs 3.33 lb and 4 lb—so it needs less manpower. Third, it solders faster: 3/4 minutes for a typical 3” joint—almost twice as fast as the heavier type.

5. New water-supply manifolds

You can now buy them completely prefabricated and ready to install (instead of having to solder together a row of reducing tees). The manifold serves as a main for 1/2” flexible risers that can be strung through walls or under floors as easily as 1x. The system eliminates all fittings between supply and fixture. Only four valves (main shutoff, cold manifold, two on water heater) are needed, so gate valves rather than globe valves can be used. Incidental advantage: since there’s only one fixture on each riser, there can be no pressure drop between fixtures. The manifolds you can buy are intended for use in hydronic heating systems, but there is no reason for not using them for better plumbing too.

6. New pre-trimmed, pre-fluxed fittings

They cost 6% more than regular copper and bronze—7.7¢ vs 7.3¢ for a 1/2” 90° elbow. But they save so much time that they pay for their extra cost 50 times over: it takes a plumber a 10¢ minute for each end to clean the inside of a fitting—20¢ for a 1/2” elbow. And these new fittings make a better joint because they are positively clean, positively tinned, and guarantee a strong 100% solder-filled joint.

7. New forming tool eliminates tees

This tee-former can convert straight tubing into tees wherever tees are needed. With it Bob Schmitt makes $24 worth of tees for $6.

Henry M. Baur
8. **New swage eliminates couplings**

It can convert the end of 3/16" to 3/8" tubing into a female joint, so two tubes can be joined with a single soldering. A 3/8" swage costs only 75¢.

9. **New neoprene closet seal**

It connects any toilet discharge horn—flush or extended—to any kind of waste line—cast iron, copper, plastic—without wax, lead, or solder. It is more sanitary; it can’t leak gas or water; it keeps its seal even under heavy vibration. It costs three times as much as the material for a cast-iron flange with lead, oakum, and wax seal, but it can be fitted in one-fifth the time, so it saves $1 to $2 a toilet.

10. **New joint system for cast-iron pipe**

With this new neoprene gasket you can join two lengths of cast-iron drain pipe in less than 30 seconds, vs 15 to 30 minutes to lead a joint. A 4" gasket costs $1.25 (vs 75¢ for lead and oakum) but at a nominal 10¢ a minute for labor, installation only costs 5¢ vs up to $3 for lead. Like the closet gasket, it lets a house settle without opening a joint.

11. **New “dope” to seal threaded fittings**

New plastic tape replaces dope and string at the few screw joints you still need—at appliances, water heaters, boilers, etc. It goes on as easy as Scotch tape, is chemically inert, is proof against water, oil, chemicals, gases, and temperatures to 500°F.

12. **New sink rim to save the time-waste shown above**

All sinks fitted with this device can be set in a counter and fastened down from the top—there’s no need to reach around or under to get at undercounter clamps. First you attach the rim to the sink; then you nail retainers around the opening; then you just drop the sink in place and a spring clamp locks automatically. The whole job is done by the plumber; no second trade is involved.
The next better-for-less news about plumbing is:

**FHA is ready to OK plastic drainage like this inside the house**

This can be big news, because plastic drain pipe costs less and goes in easier—and the drainage lines account for 76% of the piping cost inside an average house.

Specifically, FHA is ready to issue a Use and Materials Bulletin accepting for coast-to-coast use the ABS waste-line system developed by Builder John Long in Phoenix. The bulletin will be released as soon as the FHA legal staff can freeze the wording of a five-year builder's warranty FHA will require (like the five-year builder's warranty FHA now requires on water heaters and soil poisoning). "We're satisfied with the material," explains Chief Architect Connor, "We just want the warranty to be sure we get a good installation."

This means FHA will accept one plastic or another for every plumbing use except hot and cold water supply lines inside the house. Bulletin UM 31 earlier this year approved flexible polyethylene up to 2" for the house service lines outside the foundation and Bulletin UM 26 last year approved styrene rubber for the line to the sewer outside the house (for which FHA has also accepted bituminous pipe for years.)

Perhaps this FHA acceptance of plastics will speed code acceptance too.
Plastic drainage inside the house can save money four ways:

First—the pipe is cheaper: 100' of 1½" ABS costs $34 vs $53 for DWV copper. And in 4" pipe the difference is even greater—$134 vs $222.

Second—drainage fittings are cheaper: An ABS 4" sanitary tee costs the plumber about $4.16 vs $7.50 for copper; an ABS 2" elbow costs him 76¢ vs 96¢ for copper; an ABS 3" combination tee-wye costs only $2.93 vs $5.84 for the same fitting in copper. (But 1½" or smaller fittings cost much more in plastic than they do in copper, see below.)

Fittings costs can be reduced much further with solvent-welded saddle fittings that make a tee out of straight pipe by just cutting a hole under the saddle. They cost only one-third as much as tees and eliminate two joints, pipe cutting, and solvent welding the ends of the tee. (See upper photo.)

Third—the pipe is easier to cut and quicker to join: A 3" DWV soldered joint takes an experienced plumber 3½ minutes with a special wrap-around torch and a powder flux. A plumber's helper can solvent-weld an ABS joint in less than a minute. (See lower photo.)

Fourth—handling costs less: One man can easily carry and place a complete plumbing tree.

Plastic drainage outside the house is now competitive with bituminous

Styrene not only saves money compared with expensive types of pipe that are heavy and hard to handle, slow to join, and difficult to cut, but styrene is also directly competitive with bituminous pipe and fittings. For example:

Styrene fittings are cheaper: $2.10 for a 4" quarter bend vs $2.45 for bituminous; $1.27 for an eighth-bend vs $1.45; 29¢ vs 31¢ for a straight coupling, and $2.10 vs $3.19 for a 45° wye.

But styrene pipe costs more: 52¢/ft vs 49¢ for bituminous.

Labor is about the same. Both are easy to cut. The bituminous pipe is joined by tapping the tapered end of the pipe into the fitting. The styrene is joined by solvent welding, which takes about 30 seconds. The styrene joint is easier to make on cut lengths since it does not have to be re-tapered. And the joint does not depend as much on good installation techniques to guarantee root resistance.

Styrene weighs less: 1.2 lb/ft for 4" styrene vs 3 lb for bituminous.

Plastic water supply lines outside the house can save money five ways:

First—the pipe is cheaper: 100' of ¾" polyethylene costs $8 (or $12 for heavier 125 psi pipe where the local water pressure requires it) vs $55 for type K copper (which is required for buried lines). At this low price you can well afford a larger supply line. A polyethylene 1" line costs $12 (or $20 for 125-psi) vs $1.45; 29¢ vs 31¢ for a straight coupling, and $2.10 vs $3.19 for a 45° wye.

Second—fewer fittings and joints are needed: Polyethylene pipe comes in rolls up to 3,500' long—rigid copper in lengths up to 20', and flexible copper in 60' rolls. So with plastic you need only one joint at the main and one at the house—but none in between.

Third—joints are easier to make:

Polyethylene can be joined best and fastest by thermal welding. A joint takes only 30 seconds.

Fourth—obstructions in the trench cause no problem: Polyethylene is flexible, can be dropped in the trench and bent around roots, rocks, or whatever. This can also be done with flexible copper—but ¾" flexible type K is stiff and takes time to bend to shape.

Fifth—the pipe is lighter: 100' of ¾" (75-psi) polyethylene weighs about 8 lb vs 64 lb for type K copper. The same amount or 125-psi polyethylene weighs only 15 lb. So one man can easily carry a 500' reel of polyethylene—or move or shift a long length in a trench.

But copper is still best for inside water lines

And it probably will be for a long time to come.

First—it has better resistance to high and low temperatures than any plastic pipe that is now competively priced.

Second—copper fittings are much cheaper for ¾", ½", and ¼" sizes. A ¾" 90° elbow costs 18¢ in copper vs 34¢ in ABS, or 26¢ in high-density polyethylene. A ½" copper tee costs 12¢ vs 30¢ for ABS and 26¢ for polyethylene.

Third—by using a manifold and ¾" tube, installation costs in copper can be kept at a minimum. And although the tube is more expensive—18¢ for ¾" tube vs 8¢ for ½" heavy-duty polyethylene—the 10¢ difference would not save a great deal of money in the average house where plumbing is compact and lines are short. And the difference would be even less between copper and the more expensive plastics—ABS, PVC, polypropylene, nylon, etc.

So far no plastic pipe has proven as good or as cheap as copper for water lines inside the house because 1) inside lines must stand both heat and pressure, 2) the only plastics that have stood up under boiling water are rigid, so they need too many fittings, 3) small size plastic fittings are expensive.
The next better-for-less news about plumbing and bathrooms is: Corval

In some places you can get bathrooms like this

This is nothing new in Europe. The Russians precast crude bathrooms in concrete, truck them 20 miles to the site, lift them as high as six stories with huge cranes, and drop them into place. The Swedes have been doing the same thing and doing it much better for years.

It is not really new in this country either. Right after the war Borg-Warner brought out a mechanical core that could have saved homebuyers millions of dollars if more plumbers had been ready to accept it.

At least three manufacturers now make three-dimensional mechanical cores—one for vacation houses, the other two as parts of a manufactured-home package. Says one home manufacturer: “If we were sure of selling at least one core a day, we could set up a production line to produce them cheap—complete with finished bathroom, major kitchen wall, heating plant, water heater, and wiring panel. And we could deliver them to builders for far less than they now pay to install mechanical equipment at the site.”

At today’s volume, the 3,000-lb core shown above sells to the builder for $1,257 FOB. The manufacturer estimates it saves most of his customers at least $116 on
... delivered in complete packages like this

plumbing, $96 on heating, $76 on kitchen cabinets and at least $20 on wiring—a total of over $300, not counting the savings of factory-assembled walls, floor, and ceiling.

The vacation-house core (shown at right) contains a small kitchen and bath. Various models are offered to builders priced from $825 depending on size and equipment.

These cores are just a beginning. Says Builder Andy Place: "What we really need is a complete mechanical core 10' wide, 14' to 18' long, with two bathrooms and a kitchen wall. It should be less than 8' high so it can fit under the structure of the house. It should have the waste lines above the floor, should use wall-hung toilets, and should use a manifold for both hot and cold water. To get flexibility, it should have a door unit that would be interchangeable with at least one other element—perhaps a linen closet or a window. Then you could shift the doors or windows to adapt a single core to different floor plans."

Biggest news is that at least one very big manufacturer is well along on the development of a complete mechanical core 9'x36' including two baths and a kitchen, all ready to drop in place and wrap the house around.

VACATION HOUSE CORE includes bathroom fixtures on one side of wet wall, kitchen appliances on the other side, water heater under sink, sells to builders prewired, preplumbed and prefinished for $920.
The next better-for-less news about bathrooms is:

**Competition from reinforced plastic fixtures will soon force a lot of revolutionary changes**

Reinforced plastics may soon make the biggest news of all—not because plastic fixtures would be cheaper or better, but because plastic fixtures are so easy to integrate into much bigger floor-to-ceiling components.

Before plastics can challenge traditional materials for a big share of the fixture market, the plastic manufacturers must solve two big problems:

1. The problem of getting a surface as scratch-proof and stainproof as porcelain enamel. No present finish meets this standard and the Navy had enough trouble with scratching to discontinue temporarily its experiments with plastic fixtures.

2. The problem of quality control for a product whose fabrication requires so little capital investment that thousands of small local shops will probably rush in to make it as soon as the finish problem is solved.

These are real problems, but they are not insoluble. The big material suppliers can probably find ways to police the quality performance of their small fabricator customers, and the industrial-finish manufacturers are confident that within a year they can develop a good enough surface. Says one of the biggest: “A few years ago people were questioning aluminum siding because its finish would not last. We stopped that criticism with a new finish we could guarantee to last 15 years, and now there is a still newer finish for aluminum guaranteed for 30 years. Some plastics like nylon are harder to scratch than steel, much harder to scratch than frit. If cost were no problem, we could offer a finish right now that would out-perform porcelain enamel, and within a year I am sure we can get down to a cost low enough to make plastic fixtures competitive in both price and durability.”

Meanwhile, as the photos on these pages show, plastic fixtures are in the news both here and abroad:

Famed industrial designers Raymond Loewy and William Snaith have been retained to solve the design problems of a complete reinforced plastic bathroom—not just fixtures, but also the walls, ceiling, medicine cabinet, and everything. These complete bathrooms can be site-assembled from not more than a dozen big parts.
FHA is "accepting" (under its regular 203 program; not its new 233 experimental program) 390 reinforced plastic tub-and-tub enclosure units that Phoenix Builder John C. Hall is installing. Says Hall:

"We have already installed these units in more than 300 houses without getting a single complaint from the homebuyer. The women find they are easier to keep clean because the surface is so smooth and they like the fact that the plastic is always warm to the touch, even on cold mornings. Our tests show the surface is harder to chip if someone drops a bottle of hair tonic on it. We had a little trouble with staining in the first units we bought, but the chemists licked that problem very quickly. We've had no trouble with scratching so far. If we do, they tell me we can spray on a new surface for $15 a tub.

"We pay $110 a unit, including the integral 4' high enclosure. The unit comes from the factory laminated to gypsum board for strength, with an egg-crate reinforcement at the bottom. We just nail the unit to the studs with a plastic flange at the top and sides and then cover the flanges with drywall. We are also using reinforced plastic shower stalls, and for a while we used a one-piece plastic vanitory. We would still be using this except we ran into trouble with cigarette burns, so we are waiting for a new surface that will be cigarette proof."

Nobody thinks plastics will take over the bathroom and displace all the traditional materials for walls and fixtures the way they have taken over the motor boat hull and now threaten to take over the auto body; but this much seems almost sure: Before long...

Big plastic wall-and-fixture components will be low in price and easy to assemble into complete bathrooms from a few big parts. So...

The challenge of plastic components will force the makers of traditional bathroom fixtures and wall materials to rethink, redesign, and coordinate their lines to fit into a few modular components that could be site-assembled almost as quickly and cheaply as plastics.

The walls of today's bathroom are so extravagantly assembled that they cost builders twice as much as the fixtures. To meet the competition of complete 12-component-or-less plastic bathrooms, the makers of all other bathroom wall materials will have to find ways to assemble their product with a minimum of on-site labor.

This will throw the bathroom market wide open to new water-proof surfaces that can be formed or laminated as large modular pieces—melamine plastics that are already being marketed as ceiling-high tub enclosures, paper-thin porcelain-enamel steel laminated to some inexpensive backing, thermoset laminates, colored all-mineral panels, and other such hard-surfaced, large-size materials. Most of these surfaces cost more for material, but they could cost much less for on-site labor.

If vitreous tile is to survive in the mass market as the No. 1 bathroom wall material, it may well have to be factory-laminated to some large panel material or come pre-assembled like mosaic tile for easy gluing on the job.
The discouraging news about toilets is:

The manufacturers are already 40 years ahead of the plumbers and their own sales promotion

Back around 1910 the manufacturers brought out the reverse trap toilet, thereby making all existing toilets (which were wash-downs) obsolete, because wash-downs are twice as noisy and wash-downs are hard to keep clean. Thirty years ago the manufacturers brought out the elongated bowl, thereby once again making all existing toilets obsolete, because elongated bowls are so much more sanitary. Twenty-five years ago the manufacturers brought out the wall-hung toilet, thereby making all previous models obsolete for the third time because wall-hung toilets make it easy to clean the bathroom floor and the rear discharge permits the great economies of above-the-floor plumbing. But...

40% of the toilets installed new in 1961 will be wash-down, obsolete since before World War I; 97% will be round or almost-round bowls, obsolete since early in the depression, and... 99.44% will be floor-discharge models, obsolete and uneconomic since before World War II.

This is like saying that 40% of this year's new cars will be get-out-and-crank models contemporary with wash-downs, 97% will have tonneauaux-over-the-rear-wheel contemporary with the round bowl; and 99.44% will lack power steering, power brakes, defrosters, and all the other improvements added since 1935.

Yet even today nobody except HOUSE & HOME has even suggested that no more toilets should be manufactured that are obsolete before they are installed; and nobody but HOUSE & HOME has even suggested that millions of obsolete, noisy, hard-to-keep-clean toilets now in use should be replaced before they wear out (which they never will). Says the President of American-Standard: "We have yet to develop a major replacement market for our fixtures."

For all this backwardness there are four major reasons:

1. The manufacturers rely on the plumbers to sell their fixtures, and too many plumbers bid on the very cheapest fixtures they can buy, without trying to sell the customer something better.
2. The manufacturers keep old models in their catalogs as long as plumbers keep on ordering enough to break even (this is like Ford continuing to make and market the model-T tin lizzy because some dealers still order a few each year).
3. The manufacturers devote most of their advertising to selling glamor and say very little about why their new models are so much better. So two architects out of three, three builders out of four, four mortgage lenders out of five, and nine house salesmen out of ten don't even know today why a reverse-trap toilet is so much better than a wash-down toilet.
4. The manufacturers price their new and better models out of the market. Specifically, they still price wash-downs to the trade $2 or $3 cheaper than reverse-traps although the manufacturers themselves can't agree whether the manufacturing cost is the same or 50% less (this break for washdowns is partly because two short-line companies who make only wash-downs won't raise their price to the reverse-trap level). Most* of them price their cheapest elongated bowls twice as high as the toilets most builders buy although on comparable units the cost difference is less than 10%. As for wall-hungs, no manufacturer made them at any price for use in houses until about three years ago when several makers came out with tank-type models priced about three times as high as the toilets most builders buy.

If everybody would just stop selling obsolete toilets, stop buying obsolete toilets, and stop lending money to pay for toilets that should be replaced at once, then the manufacturers could concentrate on making the best and most up-to-date toilets they can make for the money. In that case...

1. They might save enough on their inventory and distribution costs to sell these best toilets for less than the obsolete models; and
2. They might start tapping a replacement market for millions of existing toilets, thereby perhaps doubling their potential market.

Soon even the most up-to-date of today's fixtures may well be made obsolete by some smart manufacturer borrowing a lesson from the appliance makers and bringing out an electric grinder model. This would permit 1" or at most 2" waste lines (instead of today's 3" and 4"), thereby saving enough money on the drainage system to pay the entire cost of the toilet plus a better lavatory plus a better tub. The electric grinder, incidentally, could be quieter than almost all present toilets. It would make a tank unnecessary and it would use so much less water that it could cut the homeowner's water bill almost 50%.

But what's the use of introducing a more modern model until the market has learned to demand improvements made before World War 1 and World War 2?
The better-for-less news about heating and cooling is:

**Competition between system and system, fuel and fuel, is making everything dandy for the homebuyer**

This competition is bringing about lower prices for better equipment to do jobs that weren't even attempted in volume housing a few years ago. Today . . .

You can buy year-round air conditioning for an installed price a lot less than ten years ago.

You can buy add-on cooling for a small house for not much more than a room unit cost a few years ago.

You can buy electrostatic air cleaners for 20% of what they cost three years ago (when practically nobody was buying them).

And in any area you can buy a comfort system that will take advantage of whatever fuel is cheapest locally.

And this better and more versatile equipment is a lot cheaper to put in place. Heating and cooling equipment now comes factory-wired, factory-plumbed, and factory-charged, so that installation is only a matter of tying in the fuel lines and heat pipes. Some jobs that once took two days can now be done in an hour.

Specifically . . .

1. Warm-air heat manufacturers are wrapping up heating, cooling, air cleaning, humidification, dehumidification, ionization, and constant air circulation in factory-assembled packages that can be installed at bargain prices.

2. Hydronic-heat manufacturers have worked out new systems and methods for cutting costs, so now you can get wet heat for the same price as warm air.

3. The electric industry is going all out to balance its summer cooling load with all sorts of winter heating—radiant ceilings, radiant baseboards, convection baseboards, electric furnaces, duct heaters, blast coils, heat pumps, electric boilers, and all kinds of spot heaters.

4. The gas industry—now dominant in winter heating—is fighting back to get summer business with new ideas in gas-fired cooling.

5. The oil industry—awake at last to the big market it was losing—has 1) researched new units that cost less to buy, less to install, or less to operate; 2) developed a cleaner, hotter, more efficient fuel, 3) invented a new distribution method as easy for homeowners as gas pipes or electric wires.

And all have joined with the insulation makers to make comfort conditioning a new standard for home construction and a big new buyer appeal.

**Ducted heat systems can be easily adapted for all air treatment**

The cheapest way to distribute cool air is to use the blower, filters, and ductwork of a forced warm-air system—provided the parts are all sized big enough. And this is also the best place to add moisture or negative ions or to take out excess moisture, dust, or odors.

So the fiercely competitive forced-air heat industry has been refining its heating and cooling equipment to cut unit costs and to cut its installation costs still more. Specifically:

1. Units are wired and all controls are installed at the factory so that the only on-site connections necessary are to the electric lines, fuel lines, and ductwork. This cuts tie-in time from a day to an hour.

2. Units are designed so the same model can be installed in any position anywhere—basement, heater room, closet, attic, crawl space, or even a pad outdoors. This simplifies ordering and inventory.
3. Blowers and plenums in most units are now sized for add-on cooling; and blowers are driven by variable-speed motors or belts to fit the differing needs of heating, cooling, and air circulating.

4. All the elements of air treatment come packaged in one compact unit. You can buy firebox, cooling coils, blower, electrostatic filters, humidifiers, and deodorizers factory-assembled.

5. New glass fiber ducts now come preformed in rectangular and round shapes that are quick and easy to install and light to handle. They are self-insulating and do a good job muffling room-to-room noise transfer.

And in the past two years manufacturers have made big economies in cooling

Biggest money savers are compact units that are fully charged with refrigerant by the manufacturer, packed for ready slip-in installation at the house.

One system combines the condenser and evaporator sections in one unit that can be inserted in a through-the-wall sleeve. The furnace is set up next to the wall so that the evaporator coils fall within the furnace plenum.

Another system also combines condenser and evaporator in one through-wall unit. But in this system the evaporator is connected to the condenser by long flexible hoses. The evaporator section can then be unbolted from the through-wall frame and installed in the plenum of a centrally located furnace.

Either of these two systems can be installed in a basement furnace, a first-floor furnace, or an attic furnace.

Still a third system combines a gas furnace and a cooling unit in a package that can be installed outside the house on the roof or on a ground-level pad. This saves on installation, makes the equipment easy to service, and keeps equipment noises outside the living space. But it is not very pretty. Cost for two tons of cooling, 40,000 Btuh of heating, about $1,000 installed.

Electronic air cleaners are now priced to give almost everyone a dust-free home

When the first electrostatic precipitators were introduced to the residential market four years ago they were big, cumbersome—though efficient—adaptations of commercial models. And they sold for about $800. Since then they have become smaller, easier to maintain, and much cheaper.

One model fits a space only 7"x16"x25", has a 70% efficiency, and has collection plates that can be easily removed for washing. It sells for about $175 in quantity.

Other somewhat bulkier models are 90% efficient, offer automatic or semi-automatic washing, cost about $300.

Either type can cut interior painting to an only-when-you-want-to routine and reduce wall, furniture, and drape cleaning to a once-in-five-years job.

You can now install a wet-heat system—including hot-water supply—in an hour

Boiler makers, baseboard makers, piping makers have jointly been proving it all over the country. The speed record stands at 49 minutes for a system installed by a four-man team in a 1,450 sq ft house in New Jersey.

Here is how the speed-up is done:

1. The whole system is planned as a single loop. The hot water is piped in a continuous run through boiler, piping, baseboard radiators, and back to the boiler. There are no separate supply pipes and no risers to individual radiators. This cuts the piping to less than half the old system and the labor by even more. (For zone control you need a separate loop for each zone.)

2. The baseboard system is packaged and coded for each particular installation. All the piping, radiators, and connectors needed for each room are specified in the job plan, packed in individual color-coded cartons, and delivered to the room where
PACKAGED PARTS—boiler, water heater, and supply lines—are delivered to the spot where they will be installed.

HEATING UNITS come in two big packages, go together with only two joints, freeing men to work on baseboards.

BASEBOARDS are quickly nailed to studs. They are cut to size before delivery, and shipped in color coded cartons.

they will be installed. All parts are precut to size and, as far as possible, preassembled at the factory.

3. Boiler and water heater are also delivered prewired and preplumbed, so they can be connected on the job with only two unions. They can be installed in 15 minutes by two men, who then join the two-man baseboard crew.

4. All connections are made with a new kind of copper connector that is articulated and therefore so flexible it can not only be bent around framing, but also serve as an expansion joint. These connectors will adjust for a wide tolerance in dimensions, so installers need not work to a precise layout. In making the installation, the workman merely sweats the connector onto the radiator, pushes it through a hole in the floor, and sweats it to a length of copper piping that will carry the hot water to the next radiator in series.

In a slab house, you can get the same results with a perimeter loop system by installing pass-by piping under doors when the slab is poured.

Gas has a big lead in heating and now it wants the cooling market

Gas cooling is making big progress in the Southwest, its home market. Equipment runs high ($2,000 for a three-ton unit, the smallest available), but low fuel rates make gas attractive to homebuyers.

Two kinds of gas coolers are available. Gas absorption units work on the same principle as the gas refrigerator. Gas engine models merely replace the electric motor of a conventional conditioner with a gas-fueled internal-combustion engine. Gas absorption units are the quietest of all air coolers, but gas engine models are among the noisiest.

Oil has two new advantages: more efficient burners and a new distribution system

The new burner developments follow these lines:

1. New nozzles promote a better mixture of oil and air in the familiar gun-type burners.

2. New burners replace the gun with a draft-induced system. This not only improves combustion—efficiency claims run 30% higher than for gun burners—but also cuts stack temperatures. With cooler exhaust gases, there is no need for a chimney—a type K metal vent is enough.

(Still in the laboratory are even more efficient burners that use catalytic reactors to turn fuel into heat almost without flame.)

The new distribution system can make oil competitive with gas over a wider area and bolster its position in the cold Northeast.

The system delivers oil through metered pipelines from a central storage tank to each house in a 100-or-more house community. This saves the cost of house storage tanks, cuts delivery costs by requiring only one stop per community, eliminates any likelihood of service stoppage, costs the builder nothing to install.

First installation of the new system is near Poughkeepsie, N.Y. Future installations will offer an equipment package with the service. (The full story of the new system will appear in H&H, November.)

You'll find the better for-less news about insulation on page 141.
The better-for-less news about outside wiring is:

You can get the wires buried for as little as $50 a house

Overhead wiring is the worst eyesore in postwar suburbia—ugly, conspicuous, and ubiquitous.

Until the trees grow up to hide them, the bare black poles with their sagging rigging can be seen from miles away, towering above the one-story houses. They are the first sorry sight homebuyers see as they drive towards a new development—and the last sight they forget.

Three years ago most electric utilities charged so much extra for underground wiring that few developers could even consider it. Joe Eichler paid $900 extra per house to get the wires buried in his plushest Palo Alto tract. Robert Alexander paid $1,000 per house extra in Palm Springs.

But today most progressive utilities offer underground service in new developments for not more than $150 a house extra; some offer it for as little as $50.

For this big cut in the extra charge you can thank three changes:

1. **The changing attitude of the electric utilities.** Three years ago many power companies were loading their charges for underground wiring just to keep homebuyers and homebuilders from demanding it. Now more and more of them recognize that its heavier first cost is also the last cost, because buried wires are safe from ice, snow, sleet, storms, hurricanes, and tornadoes.

2. **The changing attitude of the telephone companies,** most of whom now offer to bury their lines for nothing in new tracts (partly for smart public relations, partly to minimize maintenance costs and service interruptions in bad weather). When telephone lines go underground the power company has to pay all instead of half the pole costs (about $70 a pole), so power company costs for overhead wiring are going up while underground wiring costs are coming down.

3. **A big change in the actual cost of underground wiring,** because
   a. Direct burial cable (now approved by all up-to-date codes) is fast replacing conduit, which costs three to six times more in place.
   b. Polyethylene insulation is replacing rubber and neoprene, and it costs about 25% less (60¢ to 70¢ a foot vs 80¢ to 90¢).
   c. Pad-mounted transformers are replacing buried transformers, which cost two or three times as much because they had to be waterproof, not just weatherproof.
   d. More and better small trenchers are available. They work faster, require less labor per foot of trench.
   e. Telephone and power lines can now be laid side by side in the same trench. (Until this year the telephone company was afraid this might cause static.)
   f. Aluminum conductors—though larger in diameter—cut the cost of secondary cables almost 20%. (Insulation costs still block the use of aluminum primary cables—the extra insulation needed by thicker aluminum wire adds more to the cable cost than the aluminum saves.)
PUSH-IN CONNECTIONS and an internal ground shunt in new single-pole switch, right, eliminate splice needed with old switch, left.

INTERNAL LINE SHUNT connects two push-in switches so they can be mounted in the same box, on the same line, with no splices.

The better-for-less news about wiring inside the house is:

1. Your electrician can save money by buying better devices instead of cheap ones, because . . .

All the labor-saving pressure-lock push-in devices you need to wire a house the most economical way with No. 12 wire are at last available, including: double grounding receptacles, split-wired outlets, push-in splicers, single, three-way, and four-way switches, porcelain ceiling receptacles, two-circuit breakers, raceway outlets and switches. And . . .

These labor-saving devices are made only in the specification grade. They cost about 5¢ more (say $3 a house) than the competitive grade used in most homes, but . . .

1. They save much more than $3 on labor if the electrician values the time he now wastes twisting four, six, or eight wires around screws in each device and then tightening all those screws, and . . .

2. They actually make it easier to install No. 12 wire (which carries 20 amp in two-wire circuits and 40 amp in three-wire circuits) than to use the No. 14 wire (that carries only 15 amp or 30 amp). Most electricians prefer No. 14 wire because it is so much easier to wrap around a screw terminal, but No. 12 wire, being stiffer, is easier to push into a pressurelock connector.

With No. 12 wire, the only circuits you need outside the utility area of a 1,500-sq-ft house are a three-wire split perimeter loop at baseboard level, with taps for the ceiling fixtures or perhaps a single two-wire ceiling circuit. This is much the most economical wiring plan. See page 205.

Specification-grade devices are much better because they all have double or triple wiring contacts instead of single contacts that are likely to arc and corrode.

2. New raceways and channels make it easier to get your circuits out of the panels

And more manufacturers are making more surface wiring systems that go together faster and easier. At least one new system lets you plug in an outlet anywhere you need it without even cutting the wires—you just cut the cover plate, pierce the insulation to make the contact, and snap in the new outlet. Second new development is combined doortrim-raceways (that also serve as switch legs) to take wires past doors without having to fish them under the floor or through the walls to the ceiling. And several new time-saving steel door frames (see page 174) can also serve as switch-leg raceways.

Big new reason for surface wiring is to solve the where-to-put-the-wires problem created by the new money-saving factory-made wall panels.

For the older (but still good) reasons for using surface wiring, see page 205.
The better-for-less news about doors is:

You now have 13 good new ways to cut costs

1. This is the first low-priced steel outside door

It is a sheet sandwich 1¼“ thick, with a foamed core, wood stiles, and plastic edges. It is warped-proof, solid soundproofing, and prehung in a weatherstripped wood frame. The manufacturer makes it in exactly the same nine designs (plain flush or a choice of eight light arrangements) as his solid-core wood door and prices it $2.32 lower. And with either wood or steel the manufacturer offers an aluminum combination storm-screen door prehung in the same frame for $4 less than he asks for the combination door separate and not prehung.

Says Builder Bob Schmitt: “This kind of unit saves $25 an opening under what it would cost me to buy the doors separately and hang them on the job.”

2. You can buy door frames with flat-bottom sills

These sills need no on-site fitting, for their slightly triangular shape saves cutting back the subfloor and rim joists to get a sloping top. One make has a foamed polyethylene bottom that fits watertight to the subfloor. A second make includes a vinyl thermal break in its aluminum threshold, which is hinged on the inside to adjust to any kind or thickness of flooring.

3. You can buy door panels to match window panels.

The door frame is fitted to the studs, and you can get your lumber yard to pre-hang a door in it.

4. You can buy packaged prehung sliding glass doors

They take less than five minutes to install. They come pre-assembled, fully glazed, ready to go in the opening as soon as they are uncrated. Integral fins let you face-nail them in place with ten nails, with no shimming or blocking. Prices start at $45 for a 5’ wide door.

5. In more expensive sliding units, you can get...

a. a thermal break in the metal frame for cold climates,
b. tempered glass to give a view unbroken by even a narrow stile,
c. wood frames to match wood windows.

6. You can install interior door frames in 5 minutes

These new steel units, made by several firms, can save you at least $2 an opening on installation alone. The specifics:

a. They snap over the drywall and eliminate all edge spacing.
b. The three parts—head and two jambs—are premersited with interlocking joints.
c. They are preprimed.
d. They are preformed to take door butts without mortising.
e. They need no sanding, nail setting, nail-hole filling.
f. They adjust to out-of-plumb openings with minimal fitting.
g. They fasten with only two or four screws.
h. They adjust to opening height without cutting.
And they can save $2 to $5 more with some units because:
a. They can serve as switch leg raceways for surface wiring.
b. They come with baked enamel finishes.
c. They come with prehung wood or metal doors.
d. They come for 6'8" and 8" heights.

7. You can buy interior doors prehung for 82¢ extra
You have your choice of hardboard, birch, lauan, flush, or colonial doors. Hinges are mortised, lock mortises drilled, latch plate holes drilled, and doors trimmed. Frames and doors have butts attached, but pins are removed so package can be shipped kd.

8. You can buy quality doors with durable plastic faces
Various manufacturers use various facing sheets—polysters, vinyls, diallyl phthalates—but the end results are the same—a smooth protective finish that will take heavy punishment without showing any damage.

9. You can buy ceiling-high doors of all types
And they will save up to $10 an opening on your framing costs. These doors are available in architectural and prefinished plywood, prefinished hardboard, and other surfaces. They come fitted for inset or flush mounting, require no filler panels at the head. Ceiling-height doors cut air stratification at the ceiling and give better air circulation. But don’t use them casually—ceiling-height doors need to be carefully integrated into the design or they’ll create buyer resistance.

10. You get better closets with ceiling-high doors
You can use wood, steel, or woven fabric units—louvered, flush, or panel; unfinished, primed, or prefinished; sliding, swinging, or bifold. Whichever you choose you'll save up to $15 an opening and get a more usable closet to boot. One maker of steel bifold units charges about $10 more for doors for a 6' or 8' opening, but they save $10 in materials and $15 in labor needed to frame the narrow band of wall above conventional 6'8" closet doors.

11. You can buy prefabbéd cabinet fronts
One manufacturer offers a wardrobe front with two 5½' bifold doors at the bottom, two shorter ones above. Stiles and top rail nail directly to the wall or a framing strip to eliminate trimming.
The same maker has an 8'-high linen closet with a nail-on front for shelves. It includes frame, doors, knob, catches, hinges for a tall pair of doors at the top, drop-down and swing-out doors at the bottom. No additional trim is needed.

12. You can buy locksets that go in twice as fast
They need no mortising for lock, latch plates, or strike plate. All parts are installed in holes drilled with a special jig. The strike plate is simply pushed into a 1" hole in the jamb, and special staking pliers expand the sides of the strike box to lock it in place (see left picture). There are no screws. The round latch is pushed into the hole in the door edge (see right picture). The lockset holds it in place. And two screws in the rosettes hold the lockset to the door.

13. New locks have nylon working parts
These, the maker claims, will last the life of the house—the nylon is self-lubricating, will wear for years. And the price is competitive.
The better-for-less news about windows is:

You now have 12 good new ways to cut costs

1. You can now save $25 a house by using factory-primed sash and frames

Fischer & Frichtel save $2.50 a window by paying $1.50 more for factory-primed windows. But they pay their painters only $4 for the two finish coats vs $8 for the three coats needed to finish a raw window. The big saving comes in the time it takes a painter to work the prime coat into the joints, under the weatherstrip, and into the wood. The top two coats go on much faster. Because the windows are spray-primed before they are assembled, they are better protected in corners and hidden parts. Prepriming also cuts weather delays. If an unprimed window gets wet, it has to dry for two or three days before it can be painted. But a primed window can be painted almost at once. What’s more, the finish coat can be delayed up to six months after an alkyd-base primer. The old oil-base primers had to be finish-painted in two weeks or reprimed.

2. You can now buy 1" insulating glass cheaper than ever before

It is now made of two pieces of 3/16" sheet glass (instead of 1/4" plate) and it’s edged in plastic (instead of metal). A 35½"x48½" pane costs $33.44 in the new sheet glass, $41.87 in plate; a 80½"x50" pane costs $72.97 in the new sheet, $94.97 in plate.

3. You can now buy double-glazed picture windows for half the price of single-glazed double-hung windows

There are four reasons why you save money:

a. The windows are cheaper: a 6'x4' picture window costs about $50, $11 less than three 2'x3'10" double-hung windows or $3 less than two 3'x3'10" double-hung units.

b. They cost less to paint: it would cost $24 to paint the three double-hung windows or $18 to paint the two bigger units, but only $6 to paint the picture window.

c. You can omit storms and screens: this comes to $10 a unit for separate storms and screens, about $13 a unit for the cheapest combination windows.

d. And you may save on installation: a single picture window may save up to $5 over the double-hung units (but multiple-unit windows may eliminate this saving).

Total saving: $11 on materials, $18 on painting, $30 for storms and screens—$59.

4. You can now buy casement windows with concealed, self-locking hardware

Only the operating crank shows inside the room. There are no visible latches on the frame. And the self-latch locks tight and guarantees minimum infiltration. An added advantage: Because the operating crank releases the locks, it is almost impossible to strip the gears of the roto-operator.

5. You can now buy factory-made structural window-wall panels up to 12' long

And they come in almost any style you need: double-hung, casement, picture window, hopper, and awning units. They come in factory-framed sections 3', 4', 6', 8', and 12' out-to-out to fit any modular wall-panel system, with single glass, insulating glass, big panes, small panes, or snap-in muntins. They come preprimed. They come with plywood box headers to act as load-bearing panels—all you need is a single 2x4 top plate instead of a double 2x6 to tie the panels together.

With these windows you save up to $20 an opening, depending on how big and how efficient your operation is. A typical 4' panel with double-hung sash costs only $5 to $8 more than the window alone. Job-site framing, blocking, sheathing, shimming, plumbing, cutting, and fitting are all eliminated—a $10 saving in itself.

6. You can now buy metal-framed windows that won't cause condensation problems

Several manufacturers now use a plastic or wood thermal break in the window frame to cut heat loss through the highly conductive metal. One system uses an inner wood
frame which also acts as a nailer strip, cuts installation time to five minutes a window.

7. You can now buy modular windows that trim out to a full 4' width inside and out

This means you can use big sheet materials efficiently on interior and exterior walls—there are no narrow strips to be filled between the sash and the next panel. Outside easings are 3" wide to cover panel edge studs.

8. You can now buy snap-in muntins that let you offer the small-paned look with any double-glazed window

You can use them with double-hung windows, single-hung windows, sliding windows, casement windows, hopper windows, awning windows, or even 4'x6' picture windows. And you can install a single window and still offer diamond lights, small colonial lights, horizontal lights, or single lights—after the house is built.

A window-with wood snap-in muntins costs about $1.50 more than one with real muntins, but it saves up to $5 in painting costs. Plastic muntins cost slightly more but they need no painting at all and they are sturdier.

9. You can now buy top-quality metal windows that won’t cause call-back problems

Thanks to the Aluminum Window Manufacturers Association and the nip of competition, most metal windows are now made of heavier tubular extrusions, have welded or riveted corners, are weatherstripped with vinyl bulb or woven pile. And withal, the price of good windows has come down since 1956.

10. You can now buy aluminum windows that nail to the opening without blocking or shimming

And you can get almost any style of aluminum window with this nail-on, fin-trim feature. When the window opening is framed and sheathed, the whole window is set in the opening, and nailed to the studs through the edge fin. When the siding is on, it covers the window fin.

11. You can now buy steel basement windows that serve as their own concrete forms

The frame is installed in the wall before the concrete is poured so that, with the pour, the window frame becomes integral with the wall. There are no separate forms to install, strip, and maintain. And you can get sliders, casements, and awning windows like this.

12. You can now buy bow windows that are load bearing, use fewer pieces, or come completely framed

Completely framed units have mullions dovetailed and jambs dadoed into curved seat and head boards. This allows narrow, lighter mullions. Lower overall weight allows easier handling. Lower bulk means lower cost—up to 20% less in some instances.

Or stock window units can be assembled in bow arrangements with stock mullions developed by some makers. This inventory control keeps bow prices down with flat panel prices with the same glazed area.

And a Douglas Fir framed unit, three panes high, has heavy mullions to take the roof load. It comes knocked down or assembled with single or double, plate or insulating glass.
YOUR GREATEST ASSET IS OUR QUALITY PERFORMANCE!

THIS IS THE MOST IMPRESSIVE VOICE IN OUR PLANTS

It's the voice of RCA WHIRLPOOL home appliance owners who are interviewed during continuous surveys by Whirlpool Customer Assurance people. It may be pleasant, complimentary or critical. But, regardless of tone or inflection, this voice is considered the most impressive in all our plants; impressive because it is a governing factor in the styling, engineering and manufacturing of our products; impressive because it inspires every effort to assure top-quality performance and customer satisfaction. By talking to users of RCA WHIRLPOOL home appliances . . . by heeding their frank criticisms and suggestions . . . we are able to anticipate future demands and make the advancements that do so much to accelerate your sales. Another reason why we say, "Your greatest asset is our quality performance!"
WANTED:
THE BEST U.S. HOUSES
AND
GARDEN APARTMENTS

SEVENTH ANNUAL HOMES FOR BETTER LIVING NATIONAL AWARDS PROGRAM

sponsored by
THE AMERICAN INSTITUTE OF ARCHITECTS in cooperation with LIFE and HOUSE & HOME

An opportunity to gain national recognition for the houses and garden apartments you build or design. An awards program intended to promote and recognize good residential design, and to encourage better builder/architect collaboration.

HOMES FOR BETTER LIVING
NATIONAL AWARDS PROGRAM

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THE AMERICAN INSTITUTE OF ARCHITECTS in cooperation with LIFE and HOUSE & HOME

All award winners will be published in HOUSE & HOME.
A selection of winning entries will be published in LIFE and TIME. All winning entries will be displayed at the AIA convention in Dallas and at the Octagon in Washington, D.C.

Any house or garden apartment in the US, custom-built or built for sale, is eligible if designed by a registered architect and completed since Jan 1959.

JUDGES—Outstanding architects, housing industry leaders, and the editors of LIFE and HOUSE & HOME will judge the entries.

AWARDS—Awards will be made on the basis of outstanding contributions to better living through residential design, site planning, and construction. Award winners will be announced at the 94th Annual Convention of the AIA in Dallas, May 7-11, 1962.

Awards will be made in three major categories.
1. CUSTOM-BUILT HOUSES designed specifically for an individual owner, divided into three classes according to size:
   a. Under 1,600 sq ft of living space.
   b. Between 1,600 sq ft and 2,800 sq ft of living space.
   c. Over 2,800 sq ft of living space.
2. MERCHANT-BUILT HOUSES designed for a builder and sold speculatively, divided into three classes according to sales price:
   d. Under $15,000
   e. $15,000 to $25,000
   f. Over $25,000
3. GARDEN APARTMENTS of four or more living units.
   g. Single buildings
   h. Multi-building groups

All entry slips must be received with an entry fee of $10 per house before Jan 12, 1962. Separate slip must be made for each entry. Make facsimile or request additional entry blank for more than one entry.

Entry slip This slip and entry fee must be in the hands of the committee by Jan 12, 1962.

category ______________ location ______________

builder ______________ architect ______________

submitted by ______________

address ______________

The Homes for Better Living Awards Committee,
American Institute of Architects, 1735 New York Ave., NW,
Washington 6, D.C.

Enclosed is □ (check) □ (money order) in the amount of $10 covering the above entry.

Make check payable to Homes for Better Living Committee.
BUILDING FROM 75 TO 100 HOMES A YEAR. Dalco is currently developing two areas in Fargo. Their basic development consists of 12 to 18 thousand dollar homes; their higher priced development ranges from 25 to 45 thousand dollars. Model homes are furnished—with emphasis on nationally known brand names.

"$20 per opening is a big saving.

DIVERSIFICATION IS A KEY FACTOR in success of Dakota Lumber & Builders, Inc. They build packaged summer cabins (also using Andersen units)—small apartment buildings, some light commercial construction, and some farm construction.

THIS IS HOW THE STRUTWALL* CUTS INSTALLED COSTS

With Andersen Strutwalls the (A) jack studs, (B) top and bottom nailers, (C) glazing, (D) hardware and (E) side struts are factory installed. (Also available—prime painting, sheathing and plywood box headers.) Your labor is cut to a minimum—because you just cut the two side struts (E) and tip the unit into place. On-site installation problems are virtually eliminated. These are the reasons the Strutwall can beat most windows on "cost installed" figures.
They have been using Andersen Strut-walls® since 1958. "We figure they can save us about $200 per home. The units are always square. There's no time lost in window adjustments—no time lost by carpenters in exterior or interior finishing.

"We don't have to stuff insulation around the windows. We save on labor in cutting cripples, headers and jack studs. We added everything together—and figure we come out with a saving that's about $20 per window and exterior door opening."

WINDOWS NOT PAMPERED
"We don't pamper the window units. We built the entire wall on the ground—the windows, as well as sheathing and sheet rock—special jacks crank the wall into place. We used to have to set windows in later—this made double work."

BUYERS PREFER ANDERSEN
Dalco uses the Andersen brand name to help them move their houses. They demonstrate the window operation and sell buyers on how Andersen units help them cut heating and air conditioning bills. They've found that most buyers have heard of Andersen, and are acquainted with its quality reputation.

GET FULL DETAILS. Call your lumber or millwork dealer and find out how Andersen Windows can help you save. Do it today.
"A SEPARATE THERMOSTAT IN EVERY ROOM has big appeal for customers," Bauman states. "They can keep every room exactly as they want it—and it's quick."

"BASEBOARD UNITS SAVE SPACE," Bauman adds. "This feature gives homeowners more flexibility in decorating. The heat is clean, even and quiet, too."
"ACCURATE HEATING ESTIMATES are a big factor in closing sales," says Bauman. Here Northern States Power representative Stan Traczyk and Bauman discuss wiring and insulation for a new home. Bauman insulates with fiberglass batts and a polyethylene vapor barrier for top heating efficiency and economy.

"SATISFIED HOMEOWNERS ARE MY BEST INVESTMENT," Bauman says. "It's what these customers say that sells new prospects," he adds. Mr. and Mrs. W. C. Mitchell are delighted with the clean comfort and room-by-room temperature control they enjoy with flameless electric house heating.

"I profit two ways when I install flameless electric house heating"

Custom builder Paul Bauman of Minneapolis, Minn., tells why he's among the many aggressive builders now installing flameless electric house heating in over 400 homes per day

"Installing electric baseboard heating in the homes I build saves me time and money in construction," says Paul Bauman.

"The thing that saves time is that my electrician wires in the heating along with the rest of the electrical work. I don’t have to wait on sub-contractors and I can schedule insulation work so that I wind up ahead in terms of time. I save money because there are no vents or ductwork with electric baseboard heating and there's no labor needed to frame around them.

"There's another important point, too. The simplicity and durability of these electric house heating units mean fewer callbacks and complaints for me—more satisfied customers," he adds.

"To keep homeowners satisfied I put a lot of time, effort and the finest materials into these $30-80,000 homes. Then I don’t hesitate to direct prospects to my customers. It’s what these customers say that makes the next sale," Bauman says.

"And speaking of satisfied customers, I’m one myself. I like flameless electric house heating so much that my new home here is a total electric home. And my family agrees that the most comfortable heating we’ve ever had is electric. Also, with four children, my wife and I are glad to know that it’s flameless," Bauman concludes.

Like Paul Bauman, up-to-date builders all across the nation have found that it pays to install and promote flameless electric house heating. That’s why it is now going into new homes at the rate of over 400 per day.

Why not find out how electric house heating can help you? Get detailed information now about the five basic types of electric house heating: baseboard, ceiling cable, wall panel, heat pump and electric furnace. A call to your local electric utility company will bring you the facts.
This advertisement is not an offering. No offering is made except by a Prospectus filed with the Department of Law of the State of New York. Such filing does not constitute approval of the issue or the sale thereof by the Department of Law or the Attorney General of the State of New York.

NEW ISSUE

September 22, 1961

1,000,000 Shares

FIRST MORTGAGE INVESTORS

Shares of Beneficial Interest

(Without Par Value)

Price $15.00 per share

Copies of the Prospectus may be obtained in any State in which this announcement is circulated from only such of the several underwriters as may lawfully offer these securities in such State. These shares may not be sold in Illinois.

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WALSTON & CO., INC.
How many ways can you add light... space... interest... luxury to these rooms with one remodeling material?
With Glass by A-SG

there are hundreds of ways...
here are just three!

Yes, American-Saint Gobain makes more types of flat glass than any other manufacturer. So you have more ways to give light, space, luxury to a job — in one low-cost remodeling operation. What’s more, glass is the only surface material that can enrich two rooms at once, or improve an interior and an exterior — both at the same time!

No wonder leading builders and architects depend more and more on glass — for modernization as well as new construction. Glass gives elegance . . . glass gives easy care . . . glass gives value far beyond cost. These are ‘extras’ that you can sell. And remember: glass can replace costlier installations. A patterned glass wall, for instance, eliminates lathing, plastering, decorating on both sides . . . requires far less labor and is completed sooner.

You can profit by letting glass do more of the work in your next project. You’ll be amazed at how many problems can be solved . . . how many imaginative ideas suggested . . . by the broad, modern line of glasses by AMERICAN-SAINT GOBAIN.
The sparkling water-drop pattern of Beadex® glass brings a glamorous interplay of light and color to this Oriental setting. Its informal, modern design is equally at home with both ornate and simple furnishings. Beadex is a practical glass with a look of luxury.

Huewhite® glass permits complete separation of functions in this French Provincial setting, while transmitting abundant daylight. Instead of static, lifeless surfaces, this elegant, finely patterned white glass provides a dramatic exchange of light, color and space.

This partition of hammered, wired Aklo® glass makes a striking display backdrop, divides areas without any abrupt visual barrier. Aklo serves here as a color accent in harmony with the Early American decor.

*Reg. T.M. – Lic. by Corning Glass Works

Room designs—Gilbert A. Gray, A.I.D.
This sampling of A-SG glasses suggests the wide choice of patterns, textures, colors — and clear sheet glass — available from a single supplier. The A-SG line includes all major types of flat glass. For full information, call the A-SG sales office nearest you, or write:
American-Saint Gobain Corporation,
Box 929, Kingsport, Tennessee.

AMERICAN-SAINT GOBAIN CORPORATION
SALES OFFICES IN: Atlanta, Boston, Chicago, Dallas, Detroit, Kansas City, Los Angeles, New York, Pittsburgh, San Francisco, Seattle.
FACTORIES IN: Kingsport, Tennessee; Jeannette, Arnold, and Ellwood City, Pennsylvania; Okmulgee, Oklahoma.
KITCHEN PROBLEM!

GARLIC — the stuff the man of the house loves for food seasoning will give Mrs. Homeowner a problem in your beautiful kitchen. The kitchen she dreamed so long of owning can be a mighty unpleasant place to be when the odor of garlic hangs heavy in the air.

SOLUTION!

BROAN MIXED-FLO RANGE HOOD* is the solution to "garlic problems" in any kitchen. The Broan Mixed-Flo discharges vertically or horizontally and conserves valuable cabinet space. Completely prewired and preassembled for most efficient installation. Mixed-Flo engineering provides high pressure for easy duct runs. Insure that your customers will be happy in your kitchens. Specify Broan and keep garlic from becoming a kitchen problem. Ask your distributor about Broan Range Hoods.

BROAN MANUFACTURING CO. 924 W. STATE ST., HARTFORD, WIS. Manufactured in Canada by Superior Electrics, Ltd., Pembroke, Ontario

*Meets HVI and FHA Requirements

OCTOBER 1961
The little house that loves to be outdoors...

As advertised in LOOK

It's the happiest house in the block, all decked out in its colorful new Ceramo Sidewalls. Carey Ceramo, with its hard, glazed surface, protects against weather, fire and rot. Refreshing colors are baked in . . . stay beautiful longer.

You have a choice of three popular styles. Smooth Clapboard, Striated Clapboard or Wood-Grained Sidewall Shingles. For literature, write Dept. HH-1061, The Philip Carey Mfg. Company, Cincinnati 15, Ohio.
A warm, cheery welcome . . . from a mellow, happy chime. How important in selling a home! 32 different Troubadoor Chimes—in many styles and colors . . . for every home. Clock chimes . . . chord chimes . . . cathedral chimes . . . non-electric chimes. All with the Good Housekeeping Guarantee, your finest merchandising aid.

For facts on Troubadoor Chimes, and on the wide variety of Miami-Carey push buttons, bells, buzzers and transformers, write Dept. HH-1061, Miami Cabinet Division, The Philip Carey Mfg. Company, Middletown, Ohio.
5 YEAR UNCONDITIONAL GUARANTEE

New Met-L-Pak® by Universal-Rundle

Exclusive new metal-to-metal faucet control cartridge uses no washers, packings or threads . . . makes other systems obsolete . . . assures home buyers satisfaction . . . eliminates costly, troublesome repair costs.

Check all the dependable features of this outstanding new unit: A—Extra deep broaching assures secure handle grip. B—Locking lugs provide positive positioning of cartridge. C—Roll-pin stop assures handles shut off in same position. D—Entire unit is sealed with permanent “O” ring. E—Stem is completely isolated from water eliminating possible corrosion. F & G—Precision-honed and matched plates are designed for longer life and maintenance-free service. H—A compression “O” ring seals against line pressure. Lastly, MET-L-PAK can be installed quickly without special tools. For more details, write Universal-Rundle Corp., 723 River Road, New Castle, Pa.

Met-L-Pak available on all Universal-Rundle Luxury Trim Fittings

Three-Valve Diverter Bathtub Filler and Shower Combinations. Third valve controls flow of water to either tub or shower.

Automatic Diverter Bathtub Filler and Shower Combinations. New valve body simplifies shower and spout piping . . . adds longer life to installations.

Combination Lavatory Fittings available for either 8” or 12” centers. Popular 4” centerset fittings also available.

Ledge mounted sink fitting with swinging spout faucet, spray and aerator. Top mounted fittings also available.

THE WORLD'S FINEST PLUMBING FIXTURES FOR OVER 60 YEARS

Universal-Rundle

Plants in Camden, New Jersey; New Castle, Pennsylvania; Redlands, California; Hondo, Texas. Export Sales: 115 Broad Street, New York, New York

HOUSE & HOME
Shhh!
Float-Away Metal Closet Doors Operate Soundlessly!

Yank open a Float-Away closet door! There’s no clang or bang...whisper-quietness...just one more of the many reasons for Float-Away’s prestige leadership in the closet door field. Other Float-Away quality features:

- Side trim furnished—no other molding needed . . . Float-Away exclusive.
- Neutral, velvet-finish prime coating—may be painted or left for later redecoration . . . Float-Away exclusive.
- Doors of rigid, reinforced 24-gauge steel... zinc plated, Bonderized . . . . Float-Away exclusive.
- Completely pre-assembled with all hardware—unique adjustment system providing unlimited horizontal and vertical adjustment . . . Float-Away exclusive.
- Beautiful oak threshold bottom track and trim designed wood top track . . . . . Float-Away exclusive.

Wall-to-Wall, Floor-to-Ceiling Float-Away doors save you substantial money per closet by eliminating need for materials and labor. The Float-Away system provides greater convenience, storage space, and beauty. Don’t settle for less. Write, wire or phone today.

FLOAT-AWAY DOOR COMPANY
1173 Zonolite Road, N. E.
Dept. H-1061, Atlanta 6, Georgia

Qualified firms selling to builders and contractors are invited to inquire.
New Sheathing Board Supplies 1½" to 2" of Insulation Value... Cuts Application Time in Half

St. Regis Insulative Board provides up to 3 times more insulation value than many popular sheathings. Its extreme light weight, lapping features, ability to bend around corners means you can save ½ the time, or more, in application.

The aluminum foil surfaces are perforated to allow "breathing". A 4' x 8' sheet weighs less than 7 lbs. . . . you can carry enough for an entire house in a station wagon! Door and window openings can be cut out with a knife after it is up! Complies with FHA Minimum Property Standards. These are just a few features of this revolutionary building material.

An 8 page booklet "Important Information to help Builders Reduce Sheathing & Insulation Costs" is available at no cost or obligation. It contains application details, comparative U values, as well as other factual data to prove to you that St. Regis Insulative Board is indeed something you should investigate right away.
Write American Sisalkraft, Dept. 1710, Attleboro, Mass.

St. Regis INSULATIVE BOARD

American Sisalkraft Company
THE Evanite BIG THREE...

Build Right—Choose Evanite

PLYWOODS:
Douglas Fir Plywood, DFPA grade-marked; Larch Plywood, DFPA grade-marked.
Hardwood-faced Plywood: Birch, Red Oak, Ash, Madrone, Philippine Mahogany, Cherry, Walnut.
Specialty Plywoods: Crezon Overlaid, Medium Density; Texture 1-11, Marine Plywood, "2-4-1" Plywood, Vertical Grain Fir, Ag-Ply, Knotty Spruce, Idaho Knotty Pine.

HARDBOARD:
Standard, Tempered, Pre-finished, Perforated, V-Grooved, Corrugated, Exterior Siding, Garage Liner.
Poly-Clad Plywall® Pre-finished and matching Plywood Paneling, Moldings, Bi-fold Doors, Cabinet Stock, Wainscot Panel Kit, Doors.

IT PAYS TO BUY FROM YOUR JOBBER
Evans is a member of the Douglas Fir Plywood Assn.

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How much does a dishwasher really cost a builder?

DISHWASHER COSTS

plus INSTALLATION COSTS

Now—Save $82.00 when you install the

NEW LING-TEMCO DISHWASHER!

(The money you save installing 2 LING-TEMCO's—pays for a 3rd LING-TEMCO)

Mount It On The Wall. Save drain air gap costs on this—and 7 other L-T installations.

Install It In The Wall. Save drain pump costs on this—and 7 other L-T installations.

Below A Range Burner Or Counter Top. Save $40 in floor space—on every L-T installation.

Most dishwasher prices look competitive on the surface. But—it's the installation costs that break a builder's budget.

Now—you can save $82 on your next dishwasher installation—by installing the world's most advanced, most versatile dishwasher: the New LING-TEMCO—it's the most competitively priced dishwasher on the market!

Save $10 Or More On Drain Air Gap Costs. Only L-T comes completely equipped with drain air gap, that must be added to other dishwashers. Save $5 or more because you needn't buy it, another $5 or more because you needn't install it.

Save $15 Or More On Drain Pump Costs because most L-T locations require no drain pumps.

Save $40 Or More In Floor Space because there's no floor space needed. Ling-Temco eliminates 4 square feet of floor space every other dishwasher requires.

Save $7 Or More On Front Panel Costs because only L-T has a neutral color front panel to match every kitchen decor. No separate panels to buy.

Save $10 Or More In Installation Time because L-T's exclusive Couplermatic permits pre-installation of plumbing connections. Slide dishwasher in anytime later. Add it up. Every time you install a Ling-Temco dishwasher you save a fat $82, a cost burden that has always been tied to every dishwasher installation. On 2 installations—you save more than enough money to pay for a 3rd Ling-Temco dishwasher.

Now—Builders can afford to put the Ling-Temco dishwasher in their least expensive homes. Plan dozens of exciting, new, saleable kitchen ideas ... enjoy the extra value it adds to their kitchens and save $82 or more—to boot!

Approved by Underwriters Laboratories

ONLY LING-TEMCO...Ends Water Spots and Streaks because it produces its own distilled water • Steams Dishes Clean with a 12½ Minute Steam Bath • Just Scrape—then let the L-T dishwasher rinse and wash...Unique filtering system ends food particle feedback.

Don't Spend A Dime For Another Dishwasher Until You Get The Full Ling-Temco Story.

MAIL COUPON NOW.

LING TEMCO ELECTRONICS, Inc.
Temco Industrial Division, Dept. HIC-10
P.O. Box 6191, Dallas 22, Texas

Show me how your Ling-Temco Dishwasher can create exciting new kitchen ideas that will add to the value of my homes ... and save me $82 or more on each installation.

Name ________________________________________

Company _____________________________________

Address ________________________________ Tel. No. ________________

City __________________________ Zone State ________
“During the past three years, we’ve found that Johns-Manville’s 7-Star Builder Program is an effective, important merchandising tool that helps us sell houses,” says Merchant Builder J. W. “Bill” Underwood, of Jackson, Mississippi.

“In fact, we believe J-M’s 7-Star Program is the best cooperative effort offered to us by any building product manufacturer!” Mr. Underwood concludes. That’s mighty high praise from a man who’s rapidly becoming known as one of the nation’s most progressive merchant builders!

Why not learn how J-M’s 7-Star Plan can help you? It’s a complete, effective promotion, with proven selling aids that help you build traffic and sell houses—free local newspaper advertising . . . special “model home opening” promotions . . . professional, personalized publicity and promotion assistance . . . plus lots of sound merchandising and display materials!

Get the story from your J-M man this week. Or write Johns-Manville, Dept. HH-10, Box 111, New York 16, N. Y.

JOHNS-MANVILLE

JOHN-MANVILLE
7-STAR VALUE PRODUCTS

OCTOBER 1961
Use color stains on Oak Floors for added appeal

Match or accent the hues of wood-paneled, painted or papered walls with color-stained Oak Floors. The effect is attractively different because color toning accentuates the warm, rich, natural grain of Oak. Color-staining floors is a distinctive merchandising idea that will attract added interest to your model or display homes. Modern finishing materials provide a wide range of color tones which are easily applied and give distinctive, decorative results.
OAK FLOORS

give families
livability unlimited

More new homes have Oak Floors than all other types combined!

Oak remains America’s favorite flooring material... and that makes it a builder’s easiest choice in residential construction. When you use Oak Floors you can be sure of buyer acceptance. Through years of experience most home buyers know that these floors combine beauty, durability and comfort to give maximum livability. They know, too, that Oak stays beautiful with less upkeep than any other type of floor. No synthetic flooring material, even at greater cost, can offer so many merchandisable features. Whatever the design or price of houses you build, always use Oak Floors for style leadership and built-in sales appeal.

Richer looking • Longer lasting • More comfortable
PROVED! 3M gives you a complete line of quality adhesives, coatings and sealers for building

For example:  **WEATHERBAN**™ Brand Sealer has proven flexible and strong after 10 years' weather exposure. It outlasts conventional caulking many times over, provides excellent weather resistance without shrinkage for masonry, glass, aluminum, curtain wall construction.

**3M Ceramic Tile Adhesive** CTA-20 supports more than 3 1/2 ton per tile after 7 days' water immersion. Together with its solvent base counterparts—CTA-11 and CTA-12 plus water-dispersed CTA-50—it offers strength and water resistance from 100% to 900% above standard requirements.

**Roltite**™ Water Base Contact Cement—for plastic laminates and plywood, was developed to end special safety precautions. Nonflammable during application, it offers good workability, plus good heat and water resistance.

**Coro-Gard**™ 1706 Brand Protective Coating gives longer life to rain gutters, downspouts, concrete walls, metal roofs, wood storage sheds, and similar surfaces. Resistant to water, oil, acids, alkalis and weather extremes, it has been thoroughly proved in the laboratory and in field use.

Use 3M building products with complete assurance that they provide the best in durability, consistent quality and long-range economy. For free literature, see your 3M distributor. For more information, see Sweet's Catalog, or write: AC&S Division, 3M Company, Dept. SBA-101, St. Paul 6, Minnesota.

ADHESIVES, COATINGS AND SEALERS DIVISION

**MINNESOTA MINING AND MANUFACTURING COMPANY**

...WHERE RESEARCH IS THE KEY TO TOMORROW

200

HOUSE & HOME
STANTHONY'S Electramic Char-Broiler grills, roasts, broils. Unit with patented Cerracoals delivers even, radiant heat and true barbecue flavor — inside or outside.

Get a money-making hand from Mr. Inside-Outside

Now an economical, easy-to-install kitchen appliance with sales features that appeal to every home buyer — men and women alike! Mr. Inside-Outside enhances any range unit because it gives housewives a second oven — broiling and baking can now be done simultaneously. It also eliminates tedious oven cleaning, and saves valuable kitchen space. Men like its portability. Just pick it up, carry it outside and enjoy true barbecue flavor in seconds. See this revolutionary new appliance and you'll see important sales advantages that can work for you.

BUILT-IN ECONOMY and CONVENIENCE

- Motorized rotisserie and griddle top add versatility.
- Patented Cerracoals never need replacing — give barbecue flavor without fuss.
- One-piece reflector removes readily for easy cleaning.
- Continuous temperature control and safety signal light for perfect results every time.

EASY LOW COST INSTALLATION

- Needs no special wiring — uses standard 115V element.
- Saves space, fits anywhere. Only 3” deep, it never replaces valuable cabinets or shelves.
- Handy cutting board available, slips into counter top when Mr. Inside goes Outside.
- Fits standard 18” base cabinet. Measures: 20¾” x 14¾” x 3½” — serves the whole family.

COMBINATION PROMOTIONAL PACKAGE

Stanthony offers a top-quality Ventilating Hood and Broiler assuring proper ventilation for Broiler and surface unit. No extra charge for 48” size hood used with most surface units. You save the cost of your present hood.
A DOOR FOR EVERY OPENING...
NOW CUSTOM-TAILORED
TO EVERY DESIGN

Weldwood® Doors—with faces, cores, and constructions to fulfill every building requirement—now come cut to fit your openings, machined to fit your hardware, and finished to meet your specifications. The performance of each Weldwood Door is guaranteed, in writing, by United States Plywood.

Weldwood Algoma-Made Doors assure the architect of the exact finish he prefers and permit him to maintain critical control of door hanging with greatly reduced labor and handling costs. For 16-page catalog describing the complete line of Weldwood Doors, see your Sweet's File, or mail the coupon.

FIRE PROTECTION. Weldwood wood faced Fire Doors, with incombustible Weldrok® cores, stop both flame itself and destructive heat. Doors available rated and labeled by Underwriters' Laboratories, Inc., for Class "B" (vertical shaft) and Class "C" (room and corridor) openings.

EXTRA-WIDE. Current demands for residential entrances up to 4 feet wide require the stability, strength, and soundness of Weldwood Stay-Strat® Doors. The Weldrok mineral core is covered with any of a wide range of beautiful hardwood faces with matching edges.

HEAVY-TRAFFIC DURABILITY. Weldwood Permagard® Doors come with a tough, invisible resin compound film permanently fused to the hardwood faces. The beautiful, real wood doors have unprecedented resistance to scuffing and staining; retain their original beauty under heavy-duty wear.

SUPERS PAINT RETENTION. Weldwood Duraph® Exterior Paint Grade Doors need only 2 coats of quality paint for colorful, all-weather beauty that lasts up to 5 years. Overlaid with tough, resin fiber that assures you a perfect paint surface and minimizes paint failures.

SOUND CONTROL. Weldwood wood faced Acoustical Doors cut sound transmission from 35 db to 51 db. Highest db cut represents doors hung double in opening. As beautiful and easily hung as any Weldwood flush door, they are priced far below earlier types of sound-retarding doors.

Other Weldwood Doors for your special design needs

Algoma-Made Custom Royal Door—with rugged, colorful Micarta® faces.

Algoma-Made Staved Lumber Core Door—all-purpose door for interior/exterior residential, industrial, and institutional uses.

Algoma-Made Special Purpose Doors—Metal Clad Flush, X-Ray (lead-lined), Louver, Hospital (with stainless steel stretcher and kick-plates).

WELDWOOD DOORS
Products of United States Plywood

Send for free data booklet

United States Plywood
55 West 44th Street, New York 36, N. Y.

Please send me a copy of the new 16-page booklet, "Weldwood Architectural Doors," which gives specifications and detailed drawings on the full line of Weldwood Doors.

Name ____________________________
Firm ____________________________
Address __________________________
City ____________________ Zone ... State

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HOUSE & HOME
New American Scored Tile® brings new glamor to bathrooms

This distinctive bath-dressing room was created with American Olean crystalline glazed tile in a brand new scored design—SD-5. The effects possible with this new Scored Tile are unusually rich and decorative—providing a look of custom-design without custom costs. With Scored Tile you can give rooms a new and different look that makes homes easier to sell in today's competitive market. Send for color booklets showing many other distinctive new design ideas.
Huge mirror makes small home seem large
for H. E. Reichle, Inc., Toledo, Ohio

See how space dramatically multiplies. The 11'7" x 14'6" living room in this split-foyer model home seems almost twice as large as it really is. And the mirror, placed at living-room level, also reflects light to brighten the foyer and stairs. It adds sparkle that immediately intrigues home shoppers.

The houses in Reichle's Crestwood development in Waterville, Ohio (near Toledo), are in the $14,000 to $19,500 price range, but the builder has not skimped on quality. The mirrors, for instance, are made of LOF Parallel-O-Plate®, recognized as the finest of plate glass. It has earned the Good Housekeeping Guaranty Seal. It's twin ground for truest reflection and more freedom from distortion.

Your prospects will respond, too. Call your L-O-F Glass Distributor or Dealer (listed under “Glass” in the Yellow Pages) for wall mirrors, sliding mirror closet doors, mirrors of all types made of Parallel-O-Plate. For detail drawings on this and other structural mirrors, write L-O-F, 17101 Libbey · Owens · Ford Building, Toledo 1, Ohio.

MIRRORS OF PARALLEL-O-PLATE
Twin ground for truest reflection

LIBBEY · OWENS · FORD · TOLEDO 1, OHIO
Here are 20 ways to cut the costs of in-the-wall wiring

1. **Use less and heavier wire**
   A three-wire No. 12 circuit takes little if any more labor to install than the usual two-wire No. 14, but it carries nearly three times as much electricity (40 amps vs 15), so you need 60% less circuits and a lot less running feet of wire. Two three-wire No. 12 circuits will carry all the current most 1,480 sq ft houses need outside the kitchen-utility area—
   
   with the added advantage of making 220-volt service available wherever needed (for example: to plug in a room cooler).

2. **Get your circuits out of the ceiling**
   Nearly 80% of your living area outlets are down near the floor, so the most expensive place to run your wiring is through the ceiling, where you have to waste 8' of wire to drop down 8' to each base plug. The sensible place for your circuits is at baseboard level, making a split loop right around your house. Run a tap off the loop or a small (two-wire No. 12) separate circuit for your ceiling lights and interior base plugs. Use No. 14 wire only for switching.

3. **Insist on pressure-lock devices**
   The old-fashioned screw-type devices are as obsolete as kerosene lamps, but nine electricians out of ten still waste time using them (see p 173).

4. **Keep your heavy-wire circuits short**
   Run a three-wire No. 4 feeder to a rear load center if your kitchen-utility area is in the back of the house away from your service entry. (Three-wire No. 6 is enough if you are sure cooking will never be electrical). This will permit short branch circuits. At trade prices, 20' of three-wire No. 4 costs the electrician less than $8; an 8-circuit sub-panel costs him about $11.50.
   
   Today not one rear kitchen house in 100 takes advantage of this wiring economy.

5. **Buy your studs with a 1" hole 10" from the bottom**
   Bigger and better holes can be drilled much faster in the shop, and your electrician can run his wire through a 1" hole faster and easier than he can run it through a ¼" hole.

6. **Cut and strip your wires with a combination tool**
   Surface raceways are the cheapest way to provide outlets in nonbearing partitions erected after the perimeter walls are finished (as they should be). Reason: They can be installed and inspected at the same time as the finished wiring for the perimeter ring, whereas branches run through the partition studs would require an extra call from the electrician and an extra inspection.

   Baseboard wiring should cost no more if your electrician knows how to install it, uses the right tools to make corners fast, and gives you the benefit of his labor saving to offset higher material cost. Even if your electrician's bid for baseboard wiring is a bit higher, it will cost less if it eliminates inspection delays before you can finish interior partitions.

7. **Use only non-metallic sheathed cable**
   It costs at least 15% less installed than armored cable or old fashioned knob-and-tube and it will save you a lot more than 15% under flexible conduit or rigid conduit. It is just as safe. It is approved by the National Electrical Code and all but the most archaic or racket-ridden local codes.

8. **Give your buyers a break with a 150-amp entry**
   The 150-amp circuit-breaker panel costs your electrician less than $10 more than a 60-amp panel; the wire costs him less than $10 more than the No. 6 wire too often used. These two extras will save your buyer many times their cost the first time he adds a heavy-demand appliance.

9. **Use grounded outlets in slab houses**
   And use them in kitchens, baths, and laundries too. They reduce the chance of shocks in wet areas.

10. **Wire your appliances at counter-top level**
    No. 6 wire costs too much to waste it running up to the ceiling and down again.

    For built-in kitchens the splash-board should be designed to do double-duty as a surface raceway big enough to hold several heavy wires. If this is not available, second choice is a separate surface raceway (trade price 41¢/ft). Third choice: run the wire through the studs 40° above the floor.

11. **Put your outlets near the end of a wall space**
    They are less likely to be blocked behind furniture there.

12. **Use aluminum for wires heavier than No. 6**
    For equal current-carrying capacity it saves up to 50%.

13. **Use only duplex or triplex base plugs**
    They actually cost less than single outlets.

14. **Use outlet boxes slightly oversized**
    Don’t let your electrician waste time cramping three No. 12 wires into a small box. A box 3½” deep can be wired much faster than a 2½” box.

15. **Use a split-bus distribution panel**
    This will take five major-appliance branch circuits and feeders off ahead of the main lighting disconnect. It saves money in three ways:

   1. The split-bus costs less than any other device that can handle today’s heavier loads (up to five heavy appliance branch circuits and ten single-pole general purpose branch circuits).
   2. It ends the need for a single main switch or circuit breaker, saving its entire cost (which may be anywhere from $6 to $60).
   3. It is easier to make all the connections in one box.

16. **Use outlet boxes slightly oversized**
    Don’t let your electrician waste time cramping three No. 12 wires into a small box. A box 3½” deep can be wired much faster than a 2½” box.

17. **Don’t use “competitive” grade devices**
    Competitive receptacles cost only 5¢ less to buy (12¢ vs 17¢). They cost more to install (because they come only in the obsolete screw-type model). They won’t stand up as long in service, because they don't make as good a contact. And it costs at least $5 for a service call-back to replace one.

18. **Put time-delay fuses on motor-appliance circuits**
    They cost only 5¢ more, and they will take without blowing the twice-as-heavy starting current of the motor.

19. **Put your washer and dryer on the same circuit**
    Run a 3-wire No. 10 circuit (capacity 7,200 watts) to the dryer and tap this circuit for a 2-wire No. 12 through a 15-amp fuse or breaker for the washer. The dryer uses 4,500 watts; the washer only 700.

20. **Make your electrician use a ratchet screwdriver**
    So one motion will do the work of ten. Few electricians do—though even with pressure lock devices they have hundreds of screws to tighten.
LEADING FLORIDA BUILDER SAYS: WESTINGHOUSE RESIDENTIAL

SIDNEY COLEN (center) looks over house plans for his 1,000 Westinghouse Total Electric Home development in Merna Park and Sheryl Manor. With him are Gene Alexander, General Sales Manager (left) and Ray Funk, General Superintendent (right).

HEATING AND COOLING are provided by the new Westinghouse WhispAir® Heat Pump. Designed for the low-priced market, it's a true heat pump, with central system dependability. Installed with or without ductwork. 18,000 BTU cooling, 17,000 BTU heating.

EXCLUSIVE WESTINGHOUSE Center Drawer Refrigerator is frost-free in all three sections—Refrigerator, Freezer, and Center Drawer. It takes little space because the doors open 90 degrees within cabinet width. Can be built in with trim kit.
MARKETING PROGRAM IS A POSITIVE SALES ADVANTAGE

After building over 3,000 homes, Sidney Colen of St. Petersburg, Fla., switched to the Westinghouse Residential Marketing Program. His own words describe what this 3-point program means to him.

- **The convenience of one point of contact.** "Dealing with one source has stepped-up the effectiveness of our purchasing and servicing departments. We are a bigger factor with Westinghouse, and Westinghouse is a bigger factor with us."
- **The selling appeal of one respected brand name.** "The Westinghouse Total Electric Gold Medallion Home emblem is an 'open sesame' to value-shopping home buyers."
- **A co-ordinated merchandising plan tailored to the project and market.** "Your plan has definitely strengthened our position in the highly competitive market here. It has our sales force steamed up and ready to go."

With a Residential Sales Manager responsible for full-line sales in each of 67 principal markets, Westinghouse can give you the kind of support that has made Sidney Colen so enthusiastic. For details, talk to your Westinghouse Major Appliance Distributor. Or, for free booklet, "New Direction in New Profit for Builders," write Westinghouse Electric Corp., Pittsburgh 30, Pennsylvania.

Visit us at Booths 823-836, NAHB's Annual Convention and Exposition, December 3 to 7.

You can be sure... if it's Westinghouse

EASY TO INSTALL, the Westinghouse Built-in Oven can be attached on a base cabinet, or built in as desired. The four-unit Range Platform with lift-out Corox® units and convenient control panel drops neatly into the Micarta® Counter Top.

OCTOBER 1961
Here are 25 more ways to get better baths and better plumbing for less money

1. Buy only the best and best looking fixtures
Many builders who waste hundreds of dollars on inefficient rough plumbing hidden in the wall skimp to save $2 by putting a cheap undersized fixture out where it will show. Fixtures are the least expensive part of a bath; even the best fixtures add up to only a third of its total cost. So don’t buy a lavatory too small to wash in (19” x 21” costs your plumber only $5 more than 17” x 17”). Insist on a long-lipped elongated toilet bowl (it costs your plumber only $10 more, would cost much less if more builders bought them).

2. Line up your fixtures along one wall
Only an amateur or a millionaire would do anything else.

3. Put your bathrooms back to back
This should cut the rough plumbing costs for your second bath by more than 50%. It will give you shorter runs and let your plumber use cross-fittings to handle two fixtures from a single riser. (APSCO charges only 20% more for a double plumbing wall for two baths than for a single plumbing wall for a single bath.)

Back-to-back baths are easier to plan now that FHA permits inside baths. One inside bath has been approved since 1954; two inside baths are approved by the new FHA standards.

4. Plan your houses for compact plumbing
With the planning freedom you get from truss framing there is no good reason why your architect cannot develop a good plan that will keep all your plumbing close together for two baths, sink, washer-dryer, and water heater.

5. Keep your plumbing above the floor
Your plumber can work a lot better and faster there than he can work flat on his back in crawl space or on a ladder in the basement; he can do all his roughing-in the same day for a slab or crawl space house; and he can save the extra cost of burying an extra-expensive soil line under a slab. Builder Bob Schmitt figures his net saving on above-the-floor plumbing at $300 per house, even after paying $50 extra for two wall-hung toilets.

For above-the-floor plumbing you need an end-drain tub and a rear-discharge toilet.

6. Don’t make your plumber do carpenter’s work
Don’t make him waste time cutting and notching studs to fit in his rough plumbing. Let him finish his rough plumbing first; then close the rough plumbing in between a double wall (the extra framing lumber will cost you only $3, and your carpenters can nail it together faster than your plumber can cut one pipe through a stud.) Never make the wet wall a bearing wall.

7. Let your plumber schedule for just two trips
One day for the rough plumbing before the partitions go in, one day for the fixtures and finished plumbing after the partitions are erected.

8. Buy your wet wall plumbing prefabricated
Your plumber can buy it factory-assembled to meet your local code requirements and all framed into the wall for less money than it would cost him to assemble it himself. He can buy it cheaper from APSCO, from LFI, and several other suppliers. Says Pensacola Builder John Collins, “Our plumber is saving us $75 per house by buying our plumbing pre-assembled.” If your plumber won’t do that...

9. Have your plumber shop build your wet wall
He can do it a lot cheaper there than in the field.

10. Protect your tubs during construction
On some tracts two out of every hundred tubs have to be taken out and replaced before the house is finished because of some careless accident like dropping a hammer. This often costs $150 per tub. You can spray on a plastic coating for about $3 a tub or buy a cardboard cover, made to fit the tub, for about $1. “If you can’t use moth-balling,” adds Dave Slipher, “the second best idea is to fill the tub with water as soon as it is connected.”

Be sure your plumber plugs all drains when they are installed, so construction debris can’t block the system.

11. Use flexible tubing for your supply lines

12. Don’t use oversized or overweight pipes
Use 3” drainage pipe; it is more than adequate and passes all up-to-date codes. It costs only half as much to buy as 4” and is much easier to install.

Use service weight cast-iron pipe. Buy above ground copper tubing only in the DWV weight; it is just as satisfactory as the M that went out 15 years ago.

But don’t skimp on undersized supply lines. Run at least a 1” line to the street. In plastic it will probably cost less than the smaller service you use. Use nothing smaller than 1” between your meter and your manifold. The sizes most builders use are too small for today’s much heavier water use, so they are noisy and wear out at their bends.
13. Take advantage of new alternate materials
Plastic tubing is just as good for the service line from the main to the house. It can be unreeled in the trench like a hose, costs very much less per foot.
Plastic and impregnated fibres are quite okay and much cheaper for connections to sewer lines and septic tanks (except under the slab). They are also quite okay and much cheaper for above-the-water-line venting (from 30" above the floor to the roof). And they are the cheapest and best foundation and downspout drainage.

18. Set your tub wall-to-wall across the bathroom
And buy the tub enclosure ceiling high in one piece.

19. Use frost-proof hose bibs
Instead of running a separate water line with a stop and waste valve to each hose bib, run a short line from the nearest fixture supply to a frost-proof hose bib. You will need less pipe and less valves.

20. Vent your whole plumbing system on one stack
If you can group all your fixtures within an 8' radius, a single stack will meet the requirements of the National Plumbing Code and all other up-to-date codes. Additional stacks will cost at least $25 each (but don’t accept a bad plan just to save this $25).

21. Don’t waste good money on a house trap
If your plumbing code requires a “horizontal intercepting trap,” get after your local government to change this archaic requirement at once. Says Glen Shields, sanitary engineer for the City of Detroit: “They are stinkers. When a water closet is flushed they emit a blast of sewer air that would make a sewer rat homesick. Research by the Bureau of Standards and the University of Iowa showed that a house trap develops the same kind of obstruction to flow as if the discharge end of the building sewer were submerged. Its omission permits better flow, fewer stoppages, and higher loading.”

22. Buy your recessed medicine cabinets 30¾" wide
Then they will fit between the studs without blocking.

23. Run the window wall to wall
A wall-to-wall window across the 5' end of a bath (above) should cost less than a narrower window with a fussy return on either side. Builder Joe Eichler has proven beyond doubt that eliminating the return makes a small bath seem much bigger.

24. Or perhaps you can just omit the window
Many of the best architects often do—like Marcel Breuer or Frank Lloyd Wright. You can get better ventilation rain or shine for less money with a small exhaust fan blowing out under the eaves.

25. Put your water heater close to the kitchen
This will save piping and it will help your buyer save fuel and water getting the water to run hot.
"Desalting the ocean for drinking water, washing water, factory water and even irrigation water is next in the cards.

"Desalting the ocean will remake the map of America—the homebuilding map, the industrial map, and the farming map.

"This breakthrough comes none too soon.

"New housing and new industry are being straightjacketed by water shortages all over the country...."

So said House & Home in February in an 8-page report on the coming breakthrough in getting fresh water cheaply from salt water.

It is the most up-to-the-minute and most authoritative report that any magazine has yet published on desalting sea water... and it is just one more example of how and why House & Home spends more than a dollar a word to give its readers important and timely information on any subject (no matter how big or how complex) that concerns the further expansion of America's biggest industry.
Two months after HOUSE & HOME'S big story, the President himself underscored the importance and urgency of the program.

Said he: "If we could ever get fresh water from salt water at a competitively cheap rate... it would really dwarf any other scientific accomplishment in the long range interest of humanity. And I am hopeful that we will intensify our efforts in that area."

In June, the President added: "I can think of no cause and no work which is more important... one of the great scientific breakthroughs of history."

Five days later, he asked Congress for more money to expand and accelerate Federal efforts to achieve the goal. In a letter to Congress, he said: "I know of no federal activity that offers greater promise of making a major contribution to the ultimate economic well-being of all mankind than this program."

Treating important subjects importantly is why HOUSE & HOME attracts the paid subscriptions of over 130,000 important housing professionals, the professionals whose help you need most to sell more of your products into new houses and into existing houses—to get your products designed in, built in, appraised in, financed in, delivered in, sold in. These subscribers can be and should be your indispensable second sales force to help you sell your products to homebuyers and to homeowners, your ultimate customers.

So ask yourself these three important questions:

1) Will these professionals give you all the help you need to make more sales?
2) Do they know enough about your products' quality and sales appeal to want to sell them for you?
3) Are you doing all you should be doing to get your selling story across to these men whose help is so important to you?

HOUSE & HOME—and only HOUSE & HOME—is read by almost everybody who could help you make more sales, so HOUSE & HOME is mighty important to your selling.
Here are 11 low cost ways to add enough storage

1. Stop wasting the attic

Smart builders like Andy Place, Bob Schmitt, and Bob Gerholz, all fit 24" wide disappearing stairs between their trusses to make up to 400 sq ft of rough-floored attic space easy to reach and use. This attic storage is better than basement storage because it's dryer. It is better than garage storage because it's safer (and hides the mess). Total added cost for making it usable is less than $100 vs perhaps $3,000 for a basement. (Bob Schmitt gets 400 sq ft for $76—spends $26 for a disappearing stair installed, $40 for 3/4" plywood flooring, $10 for labor to lay it.) Sometimes Schmitt puts in not one but two disappearing stairs, one in the garage, one in the bedroom hall, to make attic access even easier. But he warns: “Don't make your stairs more than 24" wide. The narrow hole in the attic floor will keep your buyers from carrying anything up to the attic too heavy for your truss to carry.” (Trusses should be designed for 25 lb sq ft on their middle chord.)

2. Stop wasting the top of your closets

It costs less to put ceiling-high doors on your closets than to frame in conventional 6'8" doors that make the top 20" of the closet almost unusable. Best and cheapest way to build a good closet is just to close off one whole end of the room with ceiling-high, wall-to-wall doors. That gives you five sides of your closet for nothing. For the sixth side you can use 8’ folding doors, hinged doors, or sliding doors, fastening their hardware directly to floor and ceiling. The top space these 8’ doors make usable is no good for active storage, but it is the handiest place to put suitcases or to store summer things in winter and winter things in summer.

3. Stop wasting the bottom of your closets

Most families have few items that need more than 4’ of vertical hanging space: men’s coats need only 36”; men’s trousers need only 48”; children’s clothes need less than 36”; women’s daytime dresses need only 48”; even long dresses need only 72” to hang straight or about half of that to hang folded once. But most builders go right on putting every clothes closet shelf in the house 66” above the floor with the clothes rod right under it, leaving the bottom 24” to 30” of the closet unused and almost unusable except for shoes on the floor. To stop this waste, either build in drawers at the bottom of some closets or drop most of your clothes poles 18” down and put some drawers and shelves at the maximum-convenience level above them.

4. Use cheap inside space for more bigger closets

Making a 40’ house 4’ deeper adds 64 sq ft of space more than 12’ from a window. That’s enough space to double the closet area most builders offer—and Builder Bob Schmitt figures this added area costs him only $3.37/sq ft finished; ie, less than finished space in the basement. “Use some of this space for a “Fibber McGee” closet 4’ square” advises Architect John Highland, past chairman of the AIA Home Building Committee.

5. Stop wasting the depth of your closets

Make all the shelves full depth; ceiling-high doors will make their whole area accessible. Most builders build linen closets deeper than the 14” FHA requires, but still provide shelves only 14” deep. For the cost of a single board they could almost double the linen storage they provide. FHA’S new MVS ask for at least 9 sq ft of linen storage for 1- and 2-bedroom houses, and 12 sq ft for 3- and 4-bedroom houses.

6. Stop building clothes closets too shallow

A 20” deep closet won’t even hold a man’s coat without crushing the sleeves. Make your closets at least 24” deep. And if your buyers are going to put hooks along the back, closets should be even deeper. Says Michigan Builder Bob Gerholz: “Planned, organized storage is a must for maximum stability. We give it top priority.” And Phoenix Builder John Long adds: “There is an increasing demand for storage. We are providing more than ever.”

7. Stop wasting the ends of your closets

Run your closet doors end to end. A 30” wide door on a 48” wide closet leaves 9” at each end that will be almost impossible to use. Says Portland Builder Frank Evans: “The more storage the better—not just more space, but more usability.” And Dallas Architect Tom Scott Dean adds: “Esthetics notwithstanding, storage sells houses.” And Builder Elwood J Turner Jr, of Media, Pa, finds: “Better storage is an advantage in all price brackets.”
8. **Stop wasting the top half of your outside storage**
Most outside storage items stand less than 3' high. So if you build a big outside storage area like Bill Levitt's, double deck half of it and provide twice as much usable area for storing lawn furniture in winter. *House Beautiful* Editor Elizabeth Gordon uses the garage area over the hood of her car to store summer furniture, screens, etc.

9. **Stop wasting the space above your clothes dryer**
This is the best possible place for linen storage if your dryer is located near the bedrooms (as so many architects recommend). If the dryer backs up against a bathroom wall (as it often does to cut plumbing costs), put a back door to the shelves in the bathroom wall. (This convenience was one of the commonest requests at Women's Housing Congress.)

10. **Stop wasting the space above your cabinets**
Under a flat ceiling, run the cabinet doors 44” high to make a closed-in shelf of the cabinet top. This will cost you very little more than furring down the ceiling as so many builders do. The extra shelf space created by these doors will provide dust-free storage for wedding presents and many other items used only once or twice a year.

11. **Use pegboard to add storage to your walls**
On at least a portion of the inside walls of your garage and storage room, it can be decorative, costs only a little more than drywall. and turns walls into highly usable storage areas. “Storage for clothes and personal items has increased greatly.” says Architect Rufus Nims. “It is not uncommon for storage to take 30% of the total space—sometimes even more.”

---

**Here are the eight best ways to cut cooling costs**

1. **Put at least 3” of bat insulation (or its reflective equivalent) in walls and 6” in the ceiling**
In cold-winter climates this adequate insulation will soon pay for itself in cheaper heating alone; it will save twice as much when summer cooling is added. The homebuyer will save on fuel; the builder will save on a smaller furnace and a smaller conditioner.

2. **Keep your attic cool**
Most attics are so badly ventilated that they heat up to 140°F or more. Even with the best insulation some of that heat is bound to get through the ceiling and put a needless load on the cooling system. The 4-sq-ft vents most builders put in their gable ends are nowhere near big enough. (For the best way to vent an attic see page 150.)

3. **Use a light colored roof**
Nearly 90% of the exterior heat load on a house comes from the hot sun shining down on its unshaded roof. A white roof will reflect 68% of that heat back; a dark roof will reflect back only 5% and give you a mighty hot attic.

4. **Keep the sun off your glass areas**
Even a four-ton compressor can't cool a house as fast as a kitchen stove will heat it up. There is only one thing to do with kitchen heat. Turn on an exhaust fan to blow it out—and vent your oven to get rid of the oven heat too.

5. **Blow your kitchen heat outdoors**
A two-ton compressor can't cool a house as fast as a kitchen stove will heat it up. There is only one thing to do with kitchen heat. Turn on an exhaust fan to blow it out—and vent your oven to get rid of the oven heat too.

6. **Double glaze the windows**
This costs money, but it will cut winter heating bills enough to pay for itself quite quickly in cold climates; it will pay for itself faster by cutting cooling costs in hot weather, though not enough to pay for itself quickly where heat loss is no problem.

7. **Put an automatic closer on all the outside doors**
Nobody can afford to cool all outdoors.

8. **Vent the steam from shower, clothes washer**
Electric compressors and gas absorption units do a fairly efficient job taking heat out of the air, but they are much less efficient taking moisture out. A water-soaked canvas shower curtain put such a load on the cooling unit of one Texas house that a two-ton compressor could not keep the rooms comfortable. A cooling unit must work harder to get rid of a pint of water in the air than it works to cool 6,000 cu ft of dry air 10°. It costs a lot less to blow steam out of the house with an exhaust fan than it costs to get rid of it with air conditioning.

How to build better kitchens for less, see p 215
America's NEAREST range idea starts with America's FINEST name...

O'Keefe & Merritt

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Gas or Electric

HH-10/61
Here are 15 ways to make the kitchen better

1. Put the kitchen handy to the garage. Don't make the housewife carry the food clear across the house every time she comes home from market.

2. Put the kitchen handy to the front door. Don't make her drop her work and walk half the length of the house to answer the bell.

3. Put the kitchen where the housewife can keep an eye on the children at play. "It's the most important place for the kitchen," says Glenn Beyer, director of Cornell Kitchen Study.

4. Don't make the kitchen a prison. Open it up so she can see and talk to her husband and her guests while she works. Or make it big enough—a real kitchen-family room—so she can have company right in the kitchen itself.

5. Don't make the kitchen work space smaller than 8'x12'. You won't have enough counter space and you won't even have a place for the housewife to sit down.

6. Don't make the work space in your kitchen much bigger than 8'x12'. The added floor space will just put counters and appliances farther apart and so make more steps for the housewife.

7. Install an acoustic ceiling. The kitchen is the noisiest room in the house. You can't get rid of china dishes or metal pans, so keep them as quiet as you can with washable acoustic tile.

8. Put the range hood and exhaust fan 24" above the range and be sure to vent the oven right under the hood. Or use self-venting ranges. The kitchen is the hottest room in the house—and the smelliest. Make sure your exhaust fan is powerful enough to do its job. Too many architects and builders get fooled with fans.

9. In an open kitchen, provide some sort of shutters or sliding panels between the work area and the family area so the kitchen can be closed off at times to hide the mess.

10. Plan your kitchen around these five work centers: refrigerator, sink, mix, range, and serve—and allow this much space for each: sink, 8'; mix, range, and serve, each 4'; refrigerator-oven, 6'. Some of the counter top space for some of these centers can do double duty, so the total wall space needed can be condensed from 26' to 20' if necessary. All countertops should be 36" high except the mix center, which should be 32".

11. Provide the same length of top and bottom storage at each center for the things used there. For example, your mix center is 4' long, so make the base and wall cabinets each 4' long too.

12. Place the refrigerator, sink, and range in a triangle, to save steps. There are three good kitchen plans. Which one you use depends on the room you're working with.

13. Put a good light under the wall cabinets to shine on the work surfaces, which need at least 40 ft-candles. This can be the least expensive light in the house, for all the fixture you need is strip lighting with a baffle along the cabinet edge to keep the light out of the housewife's eyes.

14. Provide intermediate shelves. Too many storage cabinets have only three shelves, set 12" from shelf to shelf. That wastes most of the height, for you need only 6" to 8" to stack a dozen plates. Intermediate shelving will give you more and more convenient shelf space.

15. Put facing counters and appliances at least 4' apart. This allows just about minimum clearance when the oven door is down or the dishwasher is pulled out. And you need at least 4' clearance for two people in the kitchen at the same time.

And here are nine ways to cut the cost of a better kitchen

1. Dimension the space for your built-ins to the even 2' module and the even 1' half-module jointly recommended by NAHB and NEMA. Then your built-ins will run wall-to-wall with minimum time and money wasted to make them fit. Says Savannah Builder Clayton Powell, "This is a big advantage when you buy manufactured units."

2. Run your storage cabinets ceiling-high. "It costs less to put tall doors on your cabinets, so the top can do double duty as enclosed storage for little-used items, than it costs to fur down the ceiling," says Houston Builder Mickey Norman. Says Glenn Beyer: "Top storage for seldom used items is fine so long as you provide enough convenience-level storage for items in common use." Asks Architect Morgan Yost: "Where else can you put those awful old wedding presents?"

3. Buy your kitchen windows 44" high, to line up at the top with the 84" height of other openings, to fit at the bottom right over the counter splashback 40" above the floor.

4. Back the sink up to the baths, to cut your plumbing costs by using the same wet wall. Don't knock yourself out to put the sink under the window. Women used to want it there so they could look out while they washed the dishes, but Glenn Beyer says, "That is not so important now that dishes are washed by machine: The dishwasher doesn't care about the view, so it is often better as well as cheaper to put the sink on the side wall and put the eating space or the mix center under the window. Caution: Don't back up the sink to the baths if you have to use a bad plan to do it, or you'll lose your dollar savings in wasted space, wasted materials, and lost buyer goodwill.

5. Set the sink trap 19" above the floor. That will allow space to install a garbage disposer, now or later.

6. Don't waste good resilient flooring under your base cabinets. Spend the money thus saved for a rubber cushion under vinyl asbestos flooring; the women who buy your houses will bless you every evening for the ease and rest the cushion will give their feet. And nothing less than vinyl asbestos will stand up under kitchen wear (heaviest in the house) plus kitchen grease and water.

7. "Don't waste money finishing the wall and ceiling behind your ceiling-high wall cabinets or your base cabinets," advises Sacramento Builder James Lewis. When cabinets fit wall to wall and floor to ceiling, all you need finish is the 16" between countertop and wall cabinets.

8. Locate your range and oven on the outside wall. That will cut the installation cost of an exhaust fan at least 50%.

9. Line your appliances at countertop level. It will make a savings in your wiring.

How to use less and better nails, see p 216

OCTOBER 1961

215
Here is a nailing table to help you to engineer to use less and better nails

This table, prepared by Architect Leonard Haeger, shows engineered nailing schedules accepted by most FHA offices:

### Current FHA—Common Nails

<table>
<thead>
<tr>
<th>Framing Schedule</th>
<th>Number/Spacing</th>
<th>Size, D.</th>
<th>Length, in.</th>
<th>Diameter, in.</th>
<th>No. per lb.</th>
</tr>
</thead>
<tbody>
<tr>
<td>joists to sill or girder, toe nail</td>
<td>3</td>
<td>16</td>
<td>3/4</td>
<td>.162</td>
<td>49</td>
</tr>
<tr>
<td>1 x 6 subfloor to joists, face nail</td>
<td>2</td>
<td>8</td>
<td>2 1/2</td>
<td>.135</td>
<td>106</td>
</tr>
<tr>
<td>1 x 8 subfloor to joists, face nail</td>
<td>3</td>
<td>8</td>
<td>2 1/2</td>
<td>.135</td>
<td>106</td>
</tr>
<tr>
<td>sole plate to joists or header joist</td>
<td>16&quot; oc</td>
<td>16</td>
<td>3 1/4</td>
<td>.162</td>
<td>49</td>
</tr>
<tr>
<td>stud to sole plate, toe nail*</td>
<td>3</td>
<td>16</td>
<td>3 1/4</td>
<td>.162</td>
<td>49</td>
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<td>10</td>
<td>3</td>
<td>.148</td>
<td>69</td>
</tr>
<tr>
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<td>16</td>
<td>3 1/4</td>
<td>.162</td>
<td>49</td>
</tr>
<tr>
<td>top plate to studs, end nail</td>
<td>2</td>
<td>16</td>
<td>3 1/4</td>
<td>.162</td>
<td>49</td>
</tr>
<tr>
<td>doubled studs*</td>
<td>24&quot; oc</td>
<td>16</td>
<td>3 1/4</td>
<td>.162</td>
<td>49</td>
</tr>
<tr>
<td>doubled studs*</td>
<td>30&quot; oc</td>
<td>16</td>
<td>3 1/4</td>
<td>.162</td>
<td>49</td>
</tr>
<tr>
<td>top plates, spike together</td>
<td>24&quot; oc</td>
<td>16</td>
<td>3 1/4</td>
<td>.162</td>
<td>49</td>
</tr>
<tr>
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<td>16</td>
<td>3 1/4</td>
<td>.162</td>
<td>49</td>
</tr>
<tr>
<td>rafter to plate*</td>
<td>3</td>
<td>16</td>
<td>3 1/4</td>
<td>.162</td>
<td>49</td>
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<td>1&quot; x 8&quot; sheathing</td>
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<td>2 1/2</td>
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<tr>
<td>subfloor to joists, edges</td>
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<td>2 1/4</td>
<td>.135</td>
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<tr>
<td>subfloor to joists, intermediate</td>
<td>12&quot; oc</td>
<td>8</td>
<td>2 1/4</td>
<td>.135</td>
<td>106</td>
</tr>
<tr>
<td>roof sheathing, to rafters, edges</td>
<td>6&quot; oc</td>
<td>6</td>
<td>2</td>
<td>.120</td>
<td>181</td>
</tr>
<tr>
<td>roof sheathing, to rafters, intermediate</td>
<td>12&quot; oc</td>
<td>6</td>
<td>2</td>
<td>.120</td>
<td>181</td>
</tr>
<tr>
<td>horizontal bevel siding</td>
<td>8</td>
<td>2 1/4</td>
<td>.135</td>
<td>106</td>
<td></td>
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</table>

### Engineered—Threaded Nails

<table>
<thead>
<tr>
<th>Framing Schedule</th>
<th>Number/Spacing</th>
<th>Size, D.</th>
<th>Length, in.</th>
<th>Diameter, in.</th>
<th>No. per lb.</th>
</tr>
</thead>
<tbody>
<tr>
<td>joists to sill or girder, toe nail</td>
<td>3</td>
<td>3 1/4</td>
<td>.135</td>
<td>73</td>
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</tr>
<tr>
<td>1 x 6 subfloor to joists, face nail</td>
<td>2</td>
<td>2 1/4</td>
<td>.115</td>
<td>182</td>
<td></td>
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<tr>
<td>1 x 8 subfloor to joists, face nail</td>
<td>2</td>
<td>2 1/4</td>
<td>.115</td>
<td>182</td>
<td></td>
</tr>
<tr>
<td>sole plate to joists or header joist</td>
<td>16&quot; oc</td>
<td>3 1/4</td>
<td>.135</td>
<td>73</td>
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<tr>
<td>stud to sole plate, toe nail*</td>
<td>3</td>
<td>2 1/4</td>
<td>.120</td>
<td>117</td>
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</tr>
<tr>
<td>stud to sole plate, toe nail*</td>
<td>3</td>
<td>2 1/4</td>
<td>.120</td>
<td>117</td>
<td></td>
</tr>
<tr>
<td>stud to sole plate, end nail</td>
<td>2</td>
<td>3 1/4</td>
<td>.135</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>top plate to studs, end nail</td>
<td>2</td>
<td>3 1/4</td>
<td>.135</td>
<td>73</td>
<td></td>
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<tr>
<td>doubled studs*</td>
<td>24&quot; oc</td>
<td>2 1/4</td>
<td>.120</td>
<td>117</td>
<td></td>
</tr>
<tr>
<td>doubled studs*</td>
<td>24&quot; oc</td>
<td>2 1/4</td>
<td>.120</td>
<td>117</td>
<td></td>
</tr>
<tr>
<td>top plates, spike together</td>
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<td>3 1/4</td>
<td>.135</td>
<td>73</td>
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<td>ceiling joists to plate, toe nail*</td>
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<td>3 1/4</td>
<td>.135</td>
<td>73</td>
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<tr>
<td>rafter to plate*</td>
<td>3</td>
<td>3 1/4</td>
<td>.135</td>
<td>73</td>
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<td>1&quot; x 8&quot; sheathing</td>
<td>2</td>
<td>2</td>
<td>.120</td>
<td>147</td>
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<td>plywood:</td>
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<td></td>
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<td></td>
<td></td>
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<td>subfloor to joists, edges</td>
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</tr>
<tr>
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<td>.120</td>
<td>165</td>
<td></td>
</tr>
<tr>
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<td>1 1/4</td>
<td>.120</td>
<td>165</td>
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</tr>
<tr>
<td>horizontal bevel siding</td>
<td>8</td>
<td>2 1/4</td>
<td>.115</td>
<td>182</td>
<td></td>
</tr>
</tbody>
</table>

* FHA requirements vary

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**Change-of-pace SELLING IDEA:**

**Ponderosa Pine Paneling**

Dresses up your home with extra quality

Focus on extra home sales with the appealing change-of-pace texture of Southwest’s beautiful Ponderosa Pine paneling. Resawn from 6/4 thickness stock, it comes in all standard paneling patterns for interiors...it’s installed with barrens for exteriors. Elegant with all W.P.A. stains!

Add “sell” and quality with Southwest lumber and lumber products, including Pronto Panel kiln-dried sheetboard and finish mouldings. Write Southwest Forest Industries, P. O. Box 908, Phoenix 1, Arizona.
"Are you interested in high quality door frames that cost less to buy... install faster... look better... outperform wood? Then you'll want to learn more about our product"

KEWANEE STEEL DOOR FRAMES

UNIVERSAL "KWIK-FIT" (INSTALLS OVER DRYWALL)
Contoured edges... looks like ranch trim

PLASTERITE (INSTALLS BEFORE PLASTERING)
Galvanized finish protects metal frame from wet plaster

...ideal for apartment house and residential construction

Whether you "gang build" or concentrate on smaller jobs, Kewanee steel door frames give you that "extra edge" in offering more quality... for less! UNIVERSAL KWIK-FIT and PLASTERITE models are easily adapted to pre-fit doors... available for use in low cost, pre-hung units. Shipped mortised and punched, with mitered corners... protective packaging. For swing, sliding and folding doors. Sizes to fit standard interior doors.

OTHER KEWANEE QUALITY BUILDING PRODUCTS
- Buck Windows and Door Frames
- Conventional Steel and Aluminum Basement Windows
- Lintels (brick and block)
- Mortar Boxes
- Portable Chutes
- Hollow Metal Doors and Frames

PAN-L-FIT (INSTALLS OVER DRYWALL)
Specially designed for the new thin drywall panel systems, 2" thru 3" thick... for 1/4" or 1/2" doors of 6'6" to 8'0" heights

PLEASE SEND KEWANEE STEEL DOOR FRAME LITERATURE TO:

NAME:______________________________
FIRM:______________________________
ADDRESS:__________________________
CITY:________________STATE:________

kewanee Manufacturing Co
1061 FREEMAN AVENUE / KEWANEE, ILLINOIS
New products to insulate against sound and heat

**FRICTION-FIT BATT**s are easily handled, almost as fast as his helper can hand them to him. Snug fit assures no leaks. (No. 1)

**CEILING BATT**s are self-supporting. With roof vents, no vapor barrier is needed.

**FOIL-BACKED GYPSUM** lets you glue up drywall with an integral vapor barrier.

**POLYETHYLENE SHEET** tacked to studs, is used as vapor barrier with nail-on drywall.

**FLOOR INSULATION** over unheated spaces is rolled over joists, held by ring-nailed floors. It also cuts between-floor impact noise. (No. 2)

**PERIMETER BOARD** breaks easily at score line or can be folded against foundation. Fiberglass costs less than plastic-foam boards. (No. 3)
are made possible by a newly developed fiber

New fiber is Owens-Corning's AF (all fiber) glass, a pellet- and slub-free mat that's light, resilient, non-wicking.

With it you can install batts simply by pushing them between the studs. Batt won't settle, won't fall out, and fully fill the stud space. New friction-fit batts cost the same as kraft-backed batts, but go in place up to 50% faster.

Used as perimeter insulation, boards of the new fiber never become waterlogged. They are unaffected by local drainage or rises in the water table. They are also tough and easy to work—they fold easily at scored lines but can be cut with a dull knife. As backerboard for metal siding, non-wicking fiberglass lets condensation escape through the siding's weep holes.

The new fiber also opens new lines of development for acoustical ceilings.

One new ceiling combines finish, acoustical board, and thermal batt in one 2" thick sheet, 4' wide and any practical length, weighing only 5 oz/sq ft. To install, the big sheets are slipped into T-shaped hangers. Cost competes with other acoustical systems so the 2" of thermal insulation is a bonus.

A second ceiling system combines acoustical and luminous panels in a T support. Acoustic panels are ½" vinyl-faced fiberglass board. The light panels are corrugated polyester or flat acrylic. Builder cost: 4% per sq ft for acoustic, 7% for luminous panels.

Owens-Corning, Toledo.

For details, check number in captions on coupon, p 239.

New products continued on p 222
Mr. Builder...
Houses sell FASTER with HARTCO Solid Hardwood Parquet!

Yes, builders all over are discovering that houses featuring Hartco wood FLOR-TILE do sell faster. They are discovering, too, that this prefinished solid Appalachian Hardwood parquet costs no more than substitutes. Turn this definite selling advantage into profit for yourself. Check these important features:

- SOLID HARDWOOD TILE . . 5/16" x 6" x 6"
- PREFINISHED . . no on-the-job finishing
- EASY ADHESIVE INSTALLATION . . no forcing
- STABILITY . guaranteed to stay down
- TWO GRADES, FOUR WOODS . . . Oak, Ash, Walnut, Maple

SEND FOR SAMPLES AND LITERATURE!

Bidding a slab perimeter heating, cooling, or combination system? You can figure on saving time and labor when you install SONOAIRDUCT Fibre Duct!

Lightweight SONOAIRDUCT handles easily, levels and joins quickly, Long lengths mean fewer joints. And, it can be cut to size or mitered with a handsaw—right at the job.

Easy to install, sure. But that’s not the only reason why SONOAIRDUCT is America’s best selling Fibre Duct. It’s low in cost. It’s rugged—won’t chip, crack or break when dropped, so every piece is usable. And SONOAIRDUCT, performance-proved in thousands of installations, meets or exceeds all F. H. A. criteria and test requirements for this type product.

Bid lower — profitably — with SONOAIRDUCT Fibre Duct. Available in 23 sizes, 2" to 36" I.D., standard 18' lengths or as required.

FREE INSTALLATION MANUAL
Contains latest, detailed, step-by-step installation data for SONOAIRDUCT Fibre Duct. For copy, send us name, address on company letterhead.

See our catalog in Sweet’s
For complete information and prices, write

SONOCO Construction Products
SONOCO PRODUCTS COMPANY, HAVERSAYVILLE, S. C. • La Puente, Calif. • Fremont, Calif. • Metuchen, N. J. • Akron, Ohio • Longview, Texas • Atlanta, Ga. • Ravenna, Ohio • MEXICO: Mexico City
CANADA: Brampton, Ont.
If you are looking for locks that are easy to install, will function properly for years to come, and will add to the value of your homes—then Weiser is your answer.

Weiser Locks on your next job will prove it.

WEISER LOCKS
WEISER COMPANY • SOUTH GATE, CALIFORNIA
Here's a lightweight partition for 19¢ a sq ft

That's the price quoted for carload lots for the New Orleans plant.

The panel is a 23⁄4"-thick sandwich of hardwood curls glued between 1⁄8" gypsum-board faces, weighs 3.6 lb a sq ft. It is easily worked, easily adapted to your carpentry methods. (In fact, the special fittings shown in company's brochure have already been superseded by dimension lumber.) The faces can be scored and cut like any gypsum-board; the curl core can be ripped out with hammer claws; wire or conduit can be fished through the core in any direction.

The panel has good strength characteristics—the curls are very strong along the axis. The panel shows a residual deflection of only 1/64" in the ASTM impact test. The wall sounds solid when thumped. With easily inserted backing blocks it will support wall-hung cabinets. Spiral Core is not, however, intended for bearing walls; it is strictly a partition system.

National Gypsum, Buffalo.

For details, check No. 7 on coupon, p 239

New products continued on p 225
Jenn-Air, leading maker of commercial kitchen ventilators, has a brand new idea—a self-ventilating range top. Four burners in line are covered by a stainless and aluminum top that acts as backsplash and vent hood. A quiet blower under the counter draws smoke, odor, and heat out through a slot in the top, exhausting it through ducts to the outdoors. Matching ovens—one single, one double—also have built-in blowers. Prices are competitive: $318 for custom top and single oven, $421 for thermostat controlled top and double oven, wholesale.

Jenn-Air Products, Indianapolis.
For details, check No. 8 on coupon, p 239

BLOWER UNIT can vent down or back, is exceptionally quiet.
SINGLE OVEN has all controls, double oven adds rotisserie.

New kitchen units feature built-in ventilation

Caloric has a new method to bring air into its gas ranges so sealed doors and cabinets are no longer necessary. All combustion air is drawn in around the broiler door, vented below the control panel. As air enters it prevents heat leaking out. Air in oven is sealed off from cooling air around the shell.

Caloric, Wyncote, Pa.
For details, check No. 9 on coupon, p 239

Thermador offers two new built-in oven hoods to match its new electric oven line. Hoods work at 150 cpm to exhaust heat, odors, moisture. New ovens in single, side-by-side, and stacked double models have automatic controls and deluxe features like three-speed broiling spits. Easily removed doors, racks and rack supports, swing-up elements, and projection-free control panel make cleaning easy. Matching range tops come in two- to six-element units in 17 versions.

Thermador, Los Angeles.
For details, check No. 10 on coupon, p 239

New products continued on p 227

New products
start on page 218
BRUCE
Fireside
Plank®

Random floor with dramatic dark finish

Look what Bruce has done to strip oak...combined a glamour finish and random widths to produce a floor with remarkable decorative effect at little expense. The dramatic Midnight color is definitely modern. Alternating 2¼" and 3½" widths create an interesting plank effect. Fireside Plank costs little more than regular strip flooring, and its factory finish saves the time and expense of on-the-job sanding and finishing. Laid like regular strip, this distinctive flooring gives your homes far more built-in value and buyer appeal. Write for color booklet. You'll find our catalog in Sweet's Files.

E. L. BRUCE CO., MEMPHIS 1, TENN.

World's largest manufacturer of hardwood flooring

A feature floor for "special" rooms
Jet cooling has been added to the Jet Heet system which makes use of narrow flexible ducts to deliver high-velocity (625 cfm) air to aspirating registers. Ducts are fiberglass and neoprene-covered aluminum, are only 3/4" in diameter so they can be snaked through a wall easily in new or remodeling work. Air is cooled to 40F, mixed with warm air at register to get a comfortable temperature. Also new (left) a thermostatic register that varies air flow during the heating cycle to hold a dial-set temperature. Register is set full open for cooling cycle.

Jet-Heet Inc. Englewood, N.J.
For details, check No. 11 on coupon, p 239

Ceramic fireplace is a high-styled efficient radiator that installs as easily as any freestanding fireplace. It is fired from silicon carbide, the strongest available refractory. Two models are available: Igloo (shown) is 30" wide, 27" deep, 33 3/4" high, weighs 250 lb, costs $295 f.o.b. Taunton, Mass.; Beacon is 24"x45", weighs 350 lb, costs $336. Units come with firescreen and chimney sleeve, can connect to existing chimney or to stock 8" prefab chimney. Shell never gets too hot to touch, comes in slate gray with brown tones.

Strawberry Bank Craftsmen, Little Compton, R.I.
For details, check No. 12 on coupon, p 239

New products continued on p 228

OCTOBER 1961
DO\n\nT\n\nWASTE\n\nHEAT\n\NON\n\nTHE\n\nUPSTAIRS\n\nCAT

EDWARDS
ZONE CONTROL
SAVES UP TO
30%
IN FUEL COSTS

Your houses will sell faster if you offer prospective buyers a hydronic heating system that saves the owner up to 30% in fuel.

With the Edwards (hot water) hydronic heating system you can offer Zone Valves which regulate temperatures in various parts of the home, keep cats cool and people warm, save hundreds of dollars over the years and help you sell homes.

Write for your free 17" x 22" portfolio of plans which completely describes Edwards quality line of time-tested Zone Valves, hydronic heating systems and silent air-conditioning.

Write: Dept. H-10
Edwards Engineering Corp.
Pompton Plains, N. J.

EDWARDS PACKAGED HYDRONICS —
Boilers, zone valves, circulators and baseboard radiation

EDWARDS ENGINEERING CORP.
Pompton Plains, N. J. • TEMple 5-2808

New products
start on p 218

Precast concrete shelter big enough for a family of four is being sold in kit form for $650. Kit includes interlocking pre-stressed masonry units, prefabbred hatches and doors, air circulating system, plans and installation manual. Design is cited by OCM as giving "almost absolute fallout protection."

Natl Fallout Shelters, Florence, Ala.
For details, check No. 13 on coupon, p 239

Prefab screen room can enclose new or existing patios, breezeways, porches, etc. Stock aluminum units come 7' high, 10' or 12' wide, 12', 15', or 20' long. Separate screen sections can be ordered in 5', 6', 7½', 9' lengths. A 12" kick plate is built into all sections. Screening is Fiberglas, can be replaced with locally made glass inserts.

Cupples Co, St Louis.
For details, check No. 14 on coupon, p 239

Back-outlet toilet—the only one on the residential market—is introduced by AllianceWare. Besides offering economies of above-the-floor plumbing, DaVinci model has pedestal base to eliminate wall hanger. Base has square lines for easy flooring. Unit needs no protecting button caps or wall bolts.

AllianceWare, Alliance, Ohio.
For details, check No. 15 on coupon, p 239
Fire-resistant ceiling in fiberboard acoustical tile is now possible. Pyrochem impregnation gives wood fiber tile a Type I flame-spread rating (the same class as mineral tile) for only a small increase in price. Six patterns in fissured, striated, perforated, and decorated tile come in 12"x12" and 12"x24" units 3/4", 9/16", and 3/4" thick for any installation method.
Simpson Timber, Seattle.
For details, check No. 16 on coupon, p 239

Incombustible tile looks like mineral tile, goes up like woodfiber, is compounded of mineral wool, has a self-leveling t&g joint, can be stapled to furring or adhered to existing ceiling. Tile can be butted to give monolithic effect, comes 12"x12"x3/4". Deep fissured surface has good acoustical properties.
Armstrong Cork, Lancaster, Pa.
For details, check No. 17 on coupon, p 239

Board-on-board design in a single-layer is new in Clear Channel western red cedar. Exaggerated shiplap leaves wide channel when applied. Clear Channel, like all cedar paneling, comes in vertical, flush, or mixed grain with smooth or rough-sawn surface. Panels are kiln dried, come any specified length.
Western Red Cedar Lumber, Seattle.
For details, check No. 18 on coupon, p 239

Owners can live, entertain, relax in the delightful atmosphere of simple elegance in these distinguished Eichler Homes, confident that the handsome translucent glass that floods interiors with diffused daylight, also protects their privacy completely. Glass does so much in these homes to achieve a feeling of spaciousness and friendliness. Effectively used in daylighting screens around patio courts and in doors, it floods adjoining areas with flattering "borrowed light", yet never needs painting, wipes shining clean with a damp cloth.
To add lustre to living, more and more builders are using beautiful, light diffusing glass by Mississippi. Available at better distributors in a wide range of patterns and surface finishes wherever quality glass is sold.

MISSISSIPPI GLASS COMPANY
88 Angellca St. • St. Louis 7, Missouri
NEW YORK • CHICAGO • FULLERTON, CALIFORNIA
WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS
Introducing...the new steel, rigid-foam-core, flush Ever|strait Door by Pease

IT CAN'T WARP costs less than a wood door

The new EVER-STRAIT* exterior residence door by Pease is made with a rigid, compressed core of Koppers Dylite** foam between two steel panels. Available in eight attractive light designs, the new EVER-STRAIT door is the lowest cost answer to warp-free doors. Plus, they offer these important advantages:

- Warp-Free
- Light Weight
- Fully Insulated
- Factory Primed
- Complete Door-Frame-Hardware Package
- Quiet Cushion Closing
- "Refrigerator" Weatherstripped

Write today for sizes, prices and designs in the booklet “Welcome to Warp Free Doors.”

Geospace Dome now comes in junior size for use as utility shed (above), summer cabin, pool cabana, toy house, etc. Domette is 6'10" high, 9'6" across, weighs less than 100 lb, retails for $122.50. Two people can bolt the Foamcor paper and plastic sandwich panels together in less than two hours.

Filtered Rosin Prods. Baxley, Ga.
For details, check No. 19 on coupon, p 239

Agricultural panel, was developed for low-cost exterior construction jobs like farm buildings, etc. Ag-Ply is an unsanded panel, can have limited open defects, but it is bonded with the same glues marine plywood uses and must meet the commercial standard for exterior fir plywood.

DFPA, Tacoma.
For details, check No. 20 on coupon, p 239

Folding platform makes an easily transported and steady scaffold. It rolls on large ball-bearing casters that lock securely. Unit weighs only 65 lb, is 4' long, 52½" high, 26½" wide, folds to 9½" for storage. It adjusts to five working heights to reach 11' ceilings.

Roll-a-Fold, Seattle.
For details, check No. 21 on coupon, p 239

Why miss out on DISPOSER PROFITS?

ONLY ONE WIRED HOME IN TEN NOW HAS A FOOD WASTE DISPOSER. The other nine are your potential customers. Cut yourself in on a big, profitable slice of your local market with NATIONAL Food Waste DISPOSERS!

With NATIONAL DISPOSERS you get:

- A full line in a wide price range.
- Exclusive “Jiffy Mount” design for fast, one-man installation.
- A service policy that pays you a scheduled rate for in-warranty service.
- Plus other exclusive features. Ask your NATIONAL DISPOSER Representative or Distributor about our full line of Commercial Disposers, too, or write for details.
Fiberglass shower stall combines receptor, three walls, and doorway in a single lightweight fixture. Low gloss finish is resistant to mold, alkalis, and household solvents. Color is molded in. Shower is being introduced in two models, 34"x48" at $146 retail, and 32"x32" at $122. Owens-Corning, Toledo.

For details, check No. 22 on coupon, p 239

Plastic shelf rack of DuPont Delrin resin offers exceptional ease of adjustment. Shelves move just by pushing in the support tabs; resilient tab springs back when released. Injection molded strips come in 24" lengths, need only be screwed in place. Plastic Prods, Grand Haven, Mich.

For details, check No. 23 on coupon, p 239

Portable photo copier comes packed in an attache case complete with all accessories. It will copy anything in any color in sheets up to 8½"x14". It is simple to operate, lightweight (32 lb.), compact (17¼"x12¾"x4¾"). Matching book copier weighs 19½ lb., is 6¼" thick. Sheet copier sells for $149.50, book model for $199.50. Anken Film Corp, Newton, N.J.

For details, check No. 24 on coupon, p 239

Rilco Laminated Wood Adds Natural Beauty and Warmth to Any Home

An attractive site...a fresh, appropriate design...the special warmth and beauty of exposed laminated wood beams—all are richly combined by architect Lyle Rohde, A.I.A., in his new Salt Lake City home.

And the laminated wood beams are Rilco. As Mr. Rohde discovered they blend easily with any style architecture, and the fine workmanship and natural beauty of Rilco products please the most exacting owner.

Rilco laminated wood structural members are economical—initial cost is low, no special skill is required to erect them, and upkeep expenses are minimum.

Whether it’s residential, church, school, commercial or industrial building, Rilco helps you build better...for less. Our field sales engineers will be happy to consult with you, without obligation.

Weyerhaeuser Company
Rilco Laminated Products Division

W843 First National Bank Building
St. Paul 1, Minnesota

District Offices: Tacoma, Wash.
Fort Wayne, Ind.; Linden, N. J.

Lyle J. Rohde residence, Salt Lake City, Utah.
Architect: Lyle Rohde, A.I.A. Construction features Rilco laminated wood beams up to 49' 8" in length.
FOR OUTLYING SUBDIVISIONS
Smith & Loveless Factory-Built "Oxigest" Sewage Treatment Plants provide dependable treatment of domestic sewage in outlying areas not served by municipal sewer facilities ... for subdivisions, motels, schools, factories, apartments, mobile home parks and other applications.

FOR GROWING SUBDIVISIONS
"Oxigest" plants can be installed in parallel, as needed, to serve a growing subdivision or development. Available in standard-size, single units or larger, bolt-together units.

FOR LARGER SUBDIVISIONS
Smith & Loveless Field-Erected "Oxigests" are capable of handling the sewage treatment needs of larger subdivisions, even small communities up to 5,000 persons.

Write for new product bulletin on Smith & Loveless equipment. Just write Department 70.

Smith & Loveless
P. O. BOX 8884
KANSAS CITY 15, MISSOURI
PLANT: LENEXA, KANSAS

Luminous ceiling of this bathroom is made of continuous prismatic plastic extrusions. The plastic can be opal or clear polystyrene or acrylic, is made in standard modular sizes or to any length. Panels have greater strength than most luminous ceiling materials, are more rigid, more light stable, fit inexpensive suspension systems.

K-S-H Plastics, St Louis.
For details, check No. 25 on coupon, p 239

Desk thermostat is a prestige item with merchandising possibilities. Pneumatically operated unit is desk-clock sized, covers 60°F to 85°F range with 1/2° response. It is claimed to be accurate to ± 1°. Unit can be used for heating and cooling, works by direct control. Case comes in egg white or light gray with silver knob and trim.

Powers Regulator, Skokie, Ill.
For details, check No. 26 on coupon, p 239

New acoustic duct for air conditioning comes ready formed: the stack at the right fits into the carton at the left, and ducts spring into shape when unpacked: Fiberglass insulation not only cuts heat loss but almost completely dampens equipment noises and room-to-room noises. Cost: directly competitive.

Owens-Corning, Toledo.
For details, check No. 27 on coupon, p 239

GOT A COMPLICATED FILING PROBLEM?
PLAN HOLD vertical and roll files are engineered for filing drawings and plans, singly or in sets. They make systematic filing easy, provide positive protection and identification, speed use, save space ... an efficient, cost-saving business tool that every builder, architect, banker needs.

Wall mounted, mobile, portable and cabinet models in modular sizes to match your needs. Look for PLAN HOLD in the Yellow Pages under Filing Equipment or write direct for literature and name of dealer.

PLAN HOLD CORP., Dept. B
5204 Chakemco St., South Gate, Calif.
251 S. River St., Aurora, Illinois

New products continued on p 233
Big siding panels—up to 4'x10'—are made for vertical paneling. New primed Insulite sheets come grooved or plain to complement horizontal lap siding introduced last year. Lap siding in 16' lengths comes 8" or 10" wide.
Insulite, Minneapolis.
For details, check No. 28 on coupon, p 239

Siding backerboard is now available in fiberglass. The new insulation is made of Owens-Corning's AF fiber. It is non-wicking, will allow condensation to escape freely through siding weep holes. Backed siding is acceptable without sheathing under the new MPS.
Owens-Corning, Toledo.
For details, check No. 29 on coupon, p 239

Luminescent sidewalk has been installed at Sylvania's Lighting Prods Division. Lighting units are Panelscent lamps—steel sheets coiled with electroluminescent phosphors. These thin panels are set in aluminum panels, covered with weather-proofing plastic, embedded in the ground.
Sylvania, Salem, Mass.
For details, check No. 30 on coupon, p 239

Everything you need... including complete plans, step by step installation manual, interlocking concrete wall units, prefabricated hatches and covers, air circulating system... All the components required except locally available ready mixed concrete. Installation time approximately two days.

THIS prestressed concrete shelter affords maximum protection... carrying the highest rating obtainable by Civil and Defense Mobilization.

$1,085
FOR FAMILY OF FOUR—LARGER SIZES AVAILABLE
F.O.B. Florence Ala., or nearest warehouse.
You can't find a better shelter... to save your life!

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NATIONAL FALLOUT SHELTERS, Inc.
P.O. Box 400—Dept. H.H.I.—Florence, Ala.
A Division of National Pool Equipment Co.

Please send brochure and prices
Have representative call

NAME
ADDRESS
CITY
STATE

Publications start on p 234
You can build this fallout shelter from stock plans

It's one of three plywood fallout-shelter plans offered by DFPA. The shelter is assembled above ground then lowered into an excavation. The other models go in the basement or above ground. As developed by DFPA researchers, the underground shelter will resist a 20-megaton bomb dropped seven miles away. It will stand a 10" head of water, support cars parked above it. The shelter uses standard lumber and plywood but is no do-it-yourself project.

Cost: about $1,500.

Douglas Fir Plywood, Tacoma

For copy, check No. 31 on coupon, p 239

How to cut trucking costs

Ford has issued a 96-page reference guide on how to get better performance and service for your truck—whatever the make or model. Among the 48 chapter headings: Engine tune-up—no $5 job. Gas mileage secrets, How a weak battery uses gas, Proper insurance can save you money, Ten points for low-cost tire care, Fitting the truck to the job, How to fight truck fires.

Ford Motor Co, Detroit.

For copy, check No. 32 on coupon, p 239

Modern plumbing and heating

That's the subject of the plumbing industry's new 16-page promotion booklet. It covers what P.I.P.E. means to builders, architects, engineers, building operators; the dos and don'ts of good plumbing care, etc.

P.I.P.E., Los Angeles.

For copy, check No. 33 on coupon, p 239

Curtain and window walls

A 16-page catalog shows Trimview's full line of curtain, window, and partition walls for hotels, motels, apartments, etc and typical specs for walls and intermediate projected windows. Details include quarter-scale sections of the metal elements.

W.P. Fuller & Co, Covina, Calif.

For copy, check No. 34 on coupon, p 239

Kitchen cabinet brochure

The lumber manufacturers' latest "Why wood is best" booklet is on kitchen cabinets. It is illustrated with four-color photographs and covers these topics: wood's suitability, its natural properties, workability, insulation qualities, beauty, finishing, and prefinishing.

NLMA, Washington, D.C.

For copy, check No. 35 on coupon, p 239

New ceramic tile standard

A new Commerce Dept simplified practice recommendation (R61-61) on Ceramic tile for floors and walls is now on sale from the Government Printing Office for 10¢. The revised standard includes new details on flat wall and floor tile, mosaic tile, and quarry tile, and illustrations of currently used trim shapes. Also added: data on a new modular mosaic series and new slip-proof mosaics. The tile industry's grade system is described and illustrated.


For copies, write direct to the office

New NEMA standards

Among the electrical manufacturers' recent releases are standards covering two household appliances:

DH 1-1961 Dehumidifiers sets performance standards for electric mechanical dehumidifiers, covers definitions, ratings, tests, safety. 25¢.

HR 1-1961 Household electric refrigerators defines refrigerators and combination refrigerator-freezers, provides a procedure for computing net storage area and shelf area, and determining performance. 50¢.

Natl Electrical Mfrs Association, 155 East 44 St, New York City.

For copies, write direct to the association

Publications continued on p 236
COACH LIGHTS IN THE BATHROOM?
another new Glamour Glow lighting idea by MOE Light
for only $19.30**

Sure, decorators dare to put coach lights into bathrooms* for a dramatic new approach to lighting. An idea like this puts hundreds of dollars’ extra SELL into your homes for as little as $19.30.** MOE Light decorative lighting specialists have lots of other unique ideas to add Glamour Glow lighting to your homes . . . for that important extra sales appeal. And, at equally sensible prices. See your MOE Light representative today.

**as shown . . . M-810-8 Lantern, $9.65 each, list.

Your FREE copy of the new MOE Light catalog, Inspiration Lighting, is now ready. It’s truly a library of lighting ideas. Write for yours today.

MOE LIGHT DIVISION, Thomas Industries Inc.
207 E. Broadway
Louisville 2, Kentucky

The World’s Largest Single Source of Lighting for Home, Industry and Commerce
CONTEMPORARY STYLE is one of four facades for garden shed suggested by Scott.

Here are free garden-house plans

As part of its gardening promotions, O. M. Scott & Sons is offering the neat garden shed shown here. The shed is designed to sit on a 4'x10' slab, to provide 40 sq ft of enclosed storage and over 56 sq ft of roofed storage. The enclosed space is in two 4' and two 6' cabinets about 2' wide and 7'7" high.

The structure is sided with ½" plywood over 2x4 and 4x4 framing. Storage areas are enclosed with stock flush doors. It does not need any further siding but can be covered to match the house design.

Scotts, Marysville, Ohio. For copy, check No. 36 on coupon, p 239

Automatic innkeeping guide
Honeywell’s system for controlling motel and hotel operations are described in a new commercial division booklet. Covered are message signals, morning calls, room status and maid control systems, clock systems, electronic air cleaners, security, fire detection, air conditioning controls, etc.

Minneapolis-Honeywell, Minneapolis. For copy, check No. 37 on coupon, p 239

Subfloor manual
A new manual for building professionals tells how to prepare subfloors for rubber and vinyl flooring and wall surfaces for rubber and vinyl cove base. The manual, prepared by the flooring technical committee of the Rubber Manufacturers Association, is the fourth edition of the guide. It replaces an issue brought out in 1946.

Rubber Mfrs Association, New York City. For copy, check No. 38 on coupon, p 239

Forklift truck catalog
Eight new models of heavy-duty equipment are shown in Towmotor’s Monarch series catalog. Load capacities range from 10,000 lb to 24,000 lb, wheelbases from 86" to 120". Power options include gasoline, diesel, and Lp-gas engines.

Towmotor Corp. Cleveland. For copy, check No. 39 on coupon, p 239

Water heater literature
A.O. Smith’s Consumer Products Division has just issued a new catalog covering specifications and related data on five Permaglas models—PGO Citation, PGO Aristocrat, PED Electra, Valiant, and Valiant I.

A.O. Smith Corp, Kankakee, Ill. For copy, check No. 40 on coupon, p 239

Package sells color hardware
Sargent has put together a new merchandising package to promote the sale of its high-style SentryLock knob sets. Included: reprints of four-color trade and consumer ads, a color catalog section and price list, a stockroom chart, sales tips for builders, direct mail brochures, a gold key presentation, and displays.

Sargent & Co, New Haven. For copy, check No. 41 on coupon, p 239

Door detail sheet
Steelcraft’s new standards sheet for its metal door line shows 25 door styles, 3%-scale section details of transoms, sidelights, and borrowed lights, standard jamb and wall sections for 12 types of walls.

Steelcraft Mfg Co, Cincinnati. For copy, check No. 42 on coupon, p 239

Publications continued on p 239
Only one foodkeeper would do for residents of this fabulous apartment

Fabulous FOODARAMA by Kelvinator

Even before plans were completed on Imperial House, Dallas developers Sidney Lynn and Dr. Herman Ulevitch knew exactly the foodkeeper they wanted for these twenty-two hundred to three thousand square foot, home-like apartments.

"From the conception of the idea of the Imperial House," they wrote us, "we were certain we wanted the Foodarama refrigerator for the kitchens because it is the only foodkeeper that is in keeping with the quality of design and elegance of appointments of these luxurious apartments."

"With its 12 cu. ft. De Luxe refrigerator, 6 cu. ft. upright freezer, and automatic icemaker in a cabinet only 41" wide, the Foodarama fulfilled our requirements perfectly. The upright freezer provides more than adequate frozen food living in a minimum of space and the no defrosting feature and ice maker provide a maximum of convenience. We are sure that our clientele will give Foodarama an enthusiastic reception."

For an enthusiastic reception for your apartments—at surprisingly low cost—include Fabulous Foodarama by Kelvinator in the plans right from the start.
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With Exclusive
Patented
Unitized Sill

The patented unitized sill construction on BILT-WELL Casements permits joining unlimited numbers of Casements easily and economically in Angle Bays, Bow Bays and multiple horizontal groupings. Because centers rest on plate or masonry, no blocking is required, and long cumbersome sills are eliminated.

* Always Look for These Other Bilt-Well Job-Tested Features

Double Weatherstripping
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Dovetailed Frame Construction
Widest Choice: Three widths—16", 20" and 24" glass. Single or ½" insulating glass. Horizontal and vertical divisions, or removable grilles.

Every BILT-WELL Casement exceeds all U. S. Government requirements and are so labelled—permanently and clearly! U. S. Patent Nos. 2,666,234 and 2,918,710.

*Mfd. since 1866 by CARADCO, Inc., Dubuque, Iowa.

* BILT-WELL "Job-Tested" means the products have been thoroughly tested in actual construction for ease of installation, weather-tightness, ease of operation, durability and acceptance.
Arizona building stone
The state development board has issued a 48-page brochure on native building stone. The booklet is an economic study of the industry, describing the types of stone available, with detailed geologic and production data. Brief sections cover mining rights, transportation rates, labor market, taxes and depletion allowances, etc.
Arizona Development Board, Phoenix.
For copy, check No. 43 on coupon below

New lighting catalog
Emerson's full Imperial line is shown in the company's newest catalog. The 48-page book shows, in color, suspended, wall, and ceiling fixtures in many modern and traditional styles. It also covers modular kitchen and bath lights, fluorescent fixtures, and a range of outdoor lanterns. The catalog is indexed with a picture guide.
Emerson Electric, St Louis.
For copy, check No. 45 on coupon below

Sewage treatment bulletin
Dorr-Oliver describes its new compact treatment plants in a 12-page brochure, Bulletin No. 7330. The booklet describes and illustrates design and operating features, installation practices, and other aspects.
Dorr-Oliver, Stamford, Conn.
For copy, check No. 44 on coupon below

Want more information?
The numbers below are keyed to the items described on the New Products and Publications pages. Check the ones that interest you and mail the coupon to:
House & Home Room 1960, Time & Life Building Rockefeller Center, New York 20, N.Y.

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BILT-WELL CASEMENTS
have a 30° opening sash
have concealed hinges
have double weatherstripping
have dovetailed joint construction
have patented unitized sill
have gold-tone hardware
have choice of regular or thermal insulating glass

BILT-WELL DOUBLE HUNG WINDOWS
have flexible jamb-liner weatherstrip
have patented unitized sill
have removable sash
have jamb adjustors
have choice of regular or thermal insulating glass

BILT-WELL AWNING and
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have removable sash
have concealed hinges
have removable glazing bead
have choice of operators
have gold-tone hardware
have choice of regular or thermal insulating glass

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