TO THE AMERICAN PEOPLE:

Your sons, husbands and brothers who are standing today upon the battlefronts are fighting for more than victory in war. They are fighting for a new world of freedom and peace.

We, upon whom has been placed the responsibility of leading the American forces, appeal to you with all possible earnestness to invest in War Bonds to the fullest extent of your capacity.

Give us not only the needed implements of war, but the assurance and backing of a united people so necessary to hasten the victory and speed the return of your fighting men.

[Signatures]

JUNE 1945
For MODERN Commercial Construction

Specify the Leader...

CELOTEX BUILDING PRODUCTS

1. CEMESTO WALL UNITS
   can be used with wood or steel construction. Simplification of framing, fire-and-moisture resistance—plus versatility—are major advantages of Cemesto. Made with core of Celotex rigid cane fibre insulation, sheathed on both sides with ¼” layer of asbestos cement bonded to core with bituminous asphalt adhesive. Sizes: 4’ wide panels, 4’, 6’, 8’, 10’ or 12’ long, in thicknesses of 1¼”, 1-9/16” and 2”.

2. CELO-ROK ROOF SLABS
   provide strong roof decks that save time and lumber—offer excellent bonding surface for built-up roofing materials. Inside surface has good light reflection value—can be painted if desired. Celo-Rok Roof slabs are laminated 1/8” sheets of fireproof gypsum wallboard—1”, 1½” and 2” thick. Widths: 2 ft. Lengths 8, 9, and 10 ft. All thicknesses available with long edges shiplapped. 1½” roof slabs also furnished with long edges T&G.

3. CELOTEX INSULATING TILE BOARD
   — a predecorated insulating interior finish material with concealed nailing joints for ceilings and walls. Applied to correctly spaced framing or furring in new construction, or directly over sound old plaster in remodeling, this tile board provides beauty and insulation in one application, at one low cost. Sizes: 12” x 12”, 16” x 16”, 16” x 32” in half-inch thickness.

4. CELOTEX INSULATING FINISH PLANK
   combines decorating and insulating values in a structural interior finish material for ceiling and walls. Many interesting effects can be had by using regular or random widths. May be applied to properly spaced open framing or furring. Bevelled interlocking joint on long edges only. Sizes 8”, 10”, 12” long—8”, 12”, 16” wide. Half-inch thick. Type “Double A” Joint.

When you say, "I recommend Celotex,"...you’re talking your clients’ language. They know the name...they know the line...they know its reputation for quality. They accept it with confidence!

And this product-confidence builds client-confidence in you!

Twenty years of effective national advertising—plus more than twenty years of use—have established ready-acceptance for Celotex.

That’s why—for modern commercial construction—it will pay you to specify Celotex Building Products. Such products, for example, as Celotex Finish Plank—Celotex Tile Board—Cemesto Wall Units for exterior construction—and Celo-Rok Roof Slabs for deck construction.

Under this one famous name you enjoy the advantages of centralized responsibility—proved products made and sold by the same manufacturer. It’s your guarantee of consistently high quality in every Celotex product you specify.

At Your Service—Celotex Service Engineers!

Without obligation, one of these specialists will meet with you, review your designs, suggest time- and money-saving methods for installing Celotex Building Products. Write: The Celotex Corporation, Dept. AF-645, Chicago 3, Illinois.

THE CELOTEX CORPORATION, CHICAGO 3, ILLINOIS

Buy an EXTRA Bond Today... and Keep ALL the Bonds You Buy!
Three-dimensional training aids developed by the Navy . . . postwar design of the month.

A large country house in Lincoln, Mass. . . . a small house for two in Seattle . . . a doctor’s house and office in Pennsylvania . . . a large Wisconsin house designed for solar heating . . . a house for indoor-outdoor living in California.

A reception room for the public doubles as a display area for magazine projects.

A service club in London, a service club and a War Chest center in Portland, Ore., show that effective design need not be expensive.

Replanned sections of Detroit fit an over-all pattern.

Oscar Niemeyer’s brilliant entry in a government-sponsored competition for one of the most ambitious athletic arenas ever planned.

Two elementary schools in California, a memorial high school in Maine and a building at Black Mountain College, N. C., built by student and faculty labor.

The Bohannon Organization shows that neighborhood planning is the key to construction simplification and the low-cost house.


The city garden, a design trend in contemporary architecture aimed at better living.

Inventions may change source of domestic energy and revolutionize the sound recording-reproducing industry . . . new products . . . technical literature.

Only Glass Blocks serve

and Save—all these ways

WALLS, SCREENS, WINDBREAKS of PC Glass Blocks bring added beauty as well as utility to outdoor living rooms, terraces, porches. They also increase privacy, mask unsightly views, bring a fresh modern note to lounging areas.

BEFORE

IN THIS DYEHOUSE ordinary sash could not withstand the warm, humid, acid atmosphere, which causes so many materials to rust, rot, check and warp. PC Glass Block panels solved the problem because they need no repairs or replacements even under these extreme conditions, cut down condensation and heat losses, are easy to keep clean—and also diffuse ample daylight, even into remote corners of the plant.

AFTER

PC GLASS BLOCKS increase comfort in homes, offices, factories. They let in plenty of evenly diffused daylight. They help keep temperatures at desired levels. They lessen condensation, exclude dust, distracting sights and sounds.

They also frequently effect worthwhile savings—by decreasing use of artificial lighting—reducing heat losses through lighting areas—protecting precision machinery and goods in process—lowering cleaning, maintenance and repair costs. Since they eliminate the use of sash, which so frequently rots, checks, warps and needs repainting, you can readily imagine the actual dollars they save in year after year service.

Because they harmonize with both modern and traditional design, PC Glass Blocks add beauty as well as utility to all new or modernized structures, whatever their type.

You need not hesitate to recommend PC Glass Blocks to your most exacting clients. They come in a full range of sizes and designs, to meet all possible requirements. Pittsburgh Corning Corporation, Room 742, 632 Duquesne Way, Pittsburgh 22, Penna.

Also makers of PC Fomglas

GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY

and by W. P. Fuller & Co. on the Pacific Coast

PITTSBURGH CORNING CORPORATION

632 DUQUESNE WAY, PITTSBURGH 22, PA.
DORMER LOUVERS

Louvers are the most common method of providing ventilation of attics year 'round. A few of the many types are illustrated here. Each ventilation is required regardless of the type of insulation used.

The free open area of the louver in each gable wall should be 1/4 to 1/2 square inch per square foot of attic floor area. The latter is preferred as explained in Data Sheet E-1. Since the material used for the slots or louvers will obstruct some of the air flow, the total gross area of the louver should be more than the net free area required. For this reason most wood louvers are only about 30% efficient; therefore, they should be about two times the size of the free open area required. The effectiveness of metal louvers is approximately 70%; therefore, the gross area should be 1 1/2 times the net free area.

For example, let's assume that an attic floor measures 24 ft. x 30 ft. The smallest standard size louver to be installed in each gable is figured as follows:

Wood: 24 x 1.0 = 240 square inch gross area

Metal: 24 x 3.0 x 1.0 = 720 square inch gross area

Use standard wood louver 12" x 12" or larger.

Use standard metal louver 12" x 12" or larger.

These are the minimum standard sizes to be used. Larger louvers offer greater summer comfort and may be partially covered in winter when less ventilation is needed. All louvers should be screened on the inside to keep out birds, bees and other insects. A sheet metal pan (upper left drawing) attached on the inside of the louver will catch snow or rain which may blow in.

Here's a valuable addition for your file—a complete set of Balsam-Wool application data sheets, showing latest insulation practices... illustrating time-saving methods for many difficult insulation jobs. Wood Conversion Company, makers of Balsam-Wool—the original sealed blanket-type insulation—offer these sheets free of charge. Start a file of this hard-to-get information—mail coupon for your set of Balsam-Wool Data Sheets.

Balsam-Wool

SEALED INSULATION

1. Windproof
2. Moisture-Proofed
3. Fire Resistant
4. Lasting
5. Non-settling
6. Highly Efficient

WOOD CONVERSION COMPANY
First National Bank Building
Saint Paul 1, Minnesota

BALSAM-WOOL Products of Weyerhaeuser

High Thermal Efficiency
Build for Performance
Non-settling
Flame-Proof
Wind-Proof
Mildew-Proof

JUNE 1945
A light, airy and comfortable base hospital in the Pacific war zone. Thanks to modern American methods, 97% of our wounded fighters live.

WHY MORE UPSON PANELS ARE NOT AVAILABLE FOR CIVILIAN USE

WE HAVE ALWAYS taken pride in our ability to make prompt shipments.

But now the war needs of our armed forces have first call upon our facilities. Upson Panels meet government specifications for many vital war uses!

Because of their unusual qualities, many, many thousands of our panels continue to go into quarters and hospitals for fighting men who are sacrificing time, home comforts and even life itself for our country. We know that you do not want one single panel that is critically needed by these men.

In approving delayed shipments the unselfish patriotism and loyalty of the building industry has permitted us to better meet vital war assignments. Every day brings us nearer the time when we can resume intensive co-operation with architects and contractors. We are preparing now for that day.

Meanwhile, there is a big measure of satisfaction in knowing that your sacrifice is helping to provide a sanitary modern hospital in the midst of a steaming jungle. Or perhaps a grand scale American housing project for American boys on foreign soil. The Upson Company, Lockport, New York.

UPSON

PACEMAKER IN CRACKPROOF PANELS

Upson Quality Products Are Easily Identified By The Famous Blue-Center
NEWS... Building lags as peace comes to Europe (this page)...

Vinson ups non-war housing and remodeling (this page)...
Kaiser and Burns team on large scale housing (page 7)...
Russian-U. S. experts swap ideas (page 8)...
Bankers move to save Brooklyn (page 12).

In Melbourne, Australia, a discharged airman picketed the City Hall parading a sign which read: "WANTED for wife and two children, house, flat or rooms!"

In London, Britishers got their first look at German war prisoners clearing sites for new houses. On many a Pacific outpost Seabees produced many another miracle to the accompaniment of enemy mortar fire. In the U. S. the languishing Taft Committee report still languished behind the Senator's imperturbable facade. And the long-awaited Wagner-Ellender unified housing bill had not climbed even the first step into the Capitol. Thus, V-E day came to Building.

Nowhere was there enough housing. West Coast cities urged Washington to come to their rescue, reporting a tidal wave of home sales, a backwash of evictions, and nothing to offer returning veterans. In Portland a line-up that outdistanced cigarette queues formed when the regional FHA office handed out priorities for 300 nonwar houses. Builders reminded that 1 1/2 million discharged veterans would soon be looking for homes, trying to unscramble doubled-up families.

The Federal Public Housing Authority started on what may be its last war job—22,000 temporary houses—setting off a flare of bad temper in Detroit. While shut-down at Willow Run threatened unemployment for 80,000, the Ford Motor Co. sought an injunction to prevent FPHA from starting a temporary housing project for Negro war workers. Rumbled Michigan's Senator Homer Ferguson: "FPHA seems to have a knack of starting to build from the ground up just when need has passed."

Meanwhile, Detroit builders competed for allotments of 5 non-war houses apiece.

Reconversion headaches pushed aside United Auto Workers plans to build a 3,000-unit community outside Detroit, first of a nation-wide program, but Henry Kaiser joined with Fritz Burns in launching a national housebuilding organization by buying enough land in West Coast cities to build the first batch of 10,000 houses. Buckminster Fuller signed his first contract with the Army Air Force—an order for one Dymaxion airbarac. In Newark, the Prudential Insurance Co. pondered a 25-block slum clearance project, while 15 Brooklyn savings banks decided to team together in rebuilding seven blighted blocks. Manhattan savings banks liked the pattern, thought of adopting it for a housing development in Harlem. As the reconversion door swung wider, building men optimistic on the supply of construction materials next year hoped that advance planning of projects would get a move on.

NONWAR HOUSES

New housebuilding—now trickling slowly into a few communities badly pinched by housing lack—may soon be underway in enough volume to persuade many a builder to get his bulldozer out of storage. War Mobilization chief Fred Vinson said Building will have a chance to go to work on 250,000 nonwar houses over the next 12 months—and maybe as many as 400,000. No major easement in wartime building, controls are in sight, but the go-ahead for nonwar housing means that more materials are available and that it will be much easier to get priorities for this kind of construction.

The National Housing Agency has programmed 48,473 units of nonwar housing in 247 communities but so far priorities have been issued to cover only about half of these. Everywhere scanty local quotas are oversubscribed. Builders' applications amounting to 22,594 units waited for priority clearance. Plan has been to spread the work around as much as possible. In Detroit, for example, no one builder can get authorization to start more than five non-war houses.

Last month NHA flourished a hopeful plan to boost the price ceiling on non-war housing to $12,000. But WPB's reconversion eye—the Committee on Period One—voted to stick to the present limit of $8,000 for a while longer. The Committee approved a big boost in repair and remodeling. Residential repair jobs amounting to $1,000 or under may soon proceed with priority authorization, as will commercial remodeling up to $5,000, industrial remodeling up to $25,000. Present ceilings are set at $200, $1,000, and $5,000.
NEWS

Even lumber—Building's biggest re-conversion snag—was looking up. WPB said that lumber allotment for civilian use will be stepped up by 13 per cent over the next quarter of the year. U. S. building can expect to get 300-400 million board feet. With a 30 per cent decrease in military requirements, copper would be in good supply.

"Given somewhere near the present family income after the war, or the incomes which might be associated with full employment... the increased demand for houses having a rental value of over $40.00 per month would support a high rate of new construction for some years. At the same time the shrinkage in demand for dwellings with a rental value of less than $30.00 would force the retirement of many undesirable dwellings because they would have no market."

—Henry A. Wallace

ROAD AHEAD

Senator James E. Murray's Congressional squad was on the job last month. How soon could Building, now at a 1933 low, be jacked back up again? Senator Murray's probings went deeper than immediate reconversion problems. For, as building pundit Miles Colean put it: "Even in times of prosperity the rewards of the construction industry as a whole can hardly be called lush."

Building men know that whenever their industry rides up a hill, there is sure to be a ditch not far ahead. Economists know that Building's ditches are deep enough to throw the whole U. S. economic cart off the road. Beardsley Ruml was on hand with his favorite solution (ARCHITECTURAL FORUM, Feb. '44): why not manipulate public works expenditure to moderate the violently fluctuating construction cycle? Miles Colean reminded that the government has in the past been one of the biggest contributors to the industry's disbalance.

"Our greatest public works programs (with the exception of that which was finally gotten under way during the depression) have invariably been carried on during periods of prosperity. They have been slow in starting, have not reached their peaks until the resources and capacity of the industry were already badly strained."

But Malcolm Pirnie, chairman of the Committee for Economic Development's construction committee, pointed to a bump in this road to construction stabilization. "When private construction expands, public construction also must expand. Indeed, there are numerous instances where expansion of public construction is prerequisite to expansion of certain types of private enterprise. The classic example is the automotive industry, which could not have been developed without new roads. That will be true of postwar aviation (see page 9). New homes require water and sewage lines, streets, schools and sidewalks. Industrial growth of a community creates a need for new public facilities of various types."

Pirnie's recipe for government action to open the way for a quick building start:

- Classification of the cost of private construction plans as current operating charges, exempt from federal income taxation.
- Gradual relaxation of building control order, L-41. "Past experience proves that construction cannot step up quickly if the go-ahead signal comes all at one time."
- Immediate general tax reduction, or the incentive of exemption from surtax of income invested in construction.
- Increase of the $17½ million public works planning loan fund administered by the Federal Works Agency (see below).

BUILDING MONEY

REAL ESTATE DEFLATION?

Housing shortage and building shutdown had been a potent yeast. Untended on the nation's shelf, real estate prices have risen higher and higher. Last month the long-portended lid for swelling real estate prices lay on President Truman's desk. At month's end,
no one knew whether he would choose to use it.

The lid was an executive order which would put real estate sales under "regulation W" credit controls, used to check inflationary buying throughout the war years. Backed by the Office of Economic Stabilization and the Federal Reserve Board, the order would require a 35 per cent down payment on all real estate purchases. Only construction built under priorities would be exempt. While builders, hoping for an end to priorities, glimpsed a possible new bogey, real estate dealers gloomily anticipated the imminent end of a long bonanza.

KAISER-BURNS

Fritz Burns, who is responsible for three of Los Angeles’ biggest prewar low cost housing developments and about 5,000 units of war housing, was tapped last month as the man to help Henry Kaiser execute his long-meditated plan to build postwar houses on the same spectacular scale he has built war ships. Kaiser Community Homes, which Burns heads as president, will—if it lives up to even half its announced prospectus—be an organization without parallel in the housebuilding business. In the first place, it may open large capital resources to an industry whose production has always been under-financed. It promises standardization and mass-production of the mechanical core of the house. It hopes to build a well-designed house of high-quality construction that will sell for $5,900.

10,000 House Start. Best evidence that Kaiser was through talking and ready for action was the announcement that the organization has already acquired land for building 10,000 houses in West Coast cities and will start construction whenever materials are available. But this is only the initial bite out of a goal of at least 100,000 houses in the first building year.

Kaiser Community Homes may be the first U. S. housebuilding organization to operate on a nation-wide basis. To this end, it proposes to adapt some of the elements of the classic system of mass distribution—the franchise—to the peculiar necessities of an extremely durable commodity. Although Kaiser is more likely to compare his new housebuilding organization to the automobile industry, it really is closer to Howard Johnson Restaurants than to Ford. Those who have made the franchise system pay off—and it usually pays very well—have done so chiefly by specifying a uniform and high-grade product.

Like Johnson, the Kaiser firm will supply contractors with a standard recipe: a set of basic house designs adapted to regional needs. It will specify high construction standards and planned communities of at least 200 houses. It will supply materials and acquire land. It will offer or arrange for construction loans. This nationwide set-up offers the economy of volume purchase of materials. It provides for factory-production of certain structural elements and all mechanical parts, while making use of advanced techniques of site assembly. At the moment Kaiser plans no national advertising—he doesn’t think he will need it.

10,000 HOUSES ARE ONLY A BEGINNING: Kaiser, Burns, Giannini

Prefab Parts. The basic Kaiser house plans—two- and three-bedroom houses to sell for $5,000-$6,000—offer no startling design innovations. A dozen or so basic plans will be varied by facades finished in Cape Cod, Rancho, Colonial styles. Floor area has not yet been announced. Some interior walls will be factory-built as storage units. Major emphasis will be on mechanical equipment, and a pre-assembled bath-kitchen unit will be an important feature. Independent producers are expected to supply this as well as heating and air-conditioning equipment. An hydraulic dishwasher is already in production as an exclusive Kaiser product.

If Kaiser had a plan to extend his housebuilding revolution to radical changes in the home mortgage system, he was not talking about it. But he promised to sell a $5,000 house at $150 down, with $30 monthly payments to include health insurance. If consumer financing goes through the usual channels, Kaiser Community Homes will advance most of the standard 20 per cent down payment. Rumor has it that capital financing for the new enterprise came from the Bank of America, with A. P. Giannini, who has put many another young West Coast enterprise on its feet.

Health is just as infectious as disease if it is given a chance to spread. I am deeply convinced today that the building of community centers is of even greater importance than housing itself, for these units represent a cultural breeding ground which enables the individual to attain his full stature within the community.”

—WALTER GROPIUS, architect

NEEDED: PLANNING DOLLARS

It often takes longer to plan a big construction job than to build it. Building reconversion would not begin with the unwinding of war controls and access to materials and labor. It had started months ago—in field surveys, detailed construction plans, materials and equipment specifications, cost estimates. But so far only a far-sighted handful are ready with the plans that will soon put in low cost building, is a trick that will be carried over in the new enterprise—sale of shrubbery and precut fencing to home buyers, who create their own landscape and what Burns calls a "psychological equity." Characteristic of Kaiser’s interests is the proposal to give each community a medical center and maybe an airport.

To doubting Thomases, the Kaiser-Burns scheme was nothing more than shrewdly timed publicity. But to others who had seen many a Kaiser ship launched, many a Burns house sold, it was a major league opening to a new building era.

"Health is just as infectious as disease if it is given a chance to spread. I am deeply convinced today that the building of community centers is of even greater importance than housing itself, for these units represent a cultural breeding ground which enables the individual to attain his full stature within the community.”

—WALTER GROPIUS, architect

"Health is just as infectious as disease if it is given a chance to spread. I am deeply convinced today that the building of community centers is of even greater importance than housing itself, for these units represent a cultural breeding ground which enables the individual to attain his full stature within the community.”

—WALTER GROPIUS, architect
Building men to work. While Building waited anxiously on the reconversion threshold, construction planning—both private and public—showed up as woefully inadequate to the size of the job ahead.

If the U. S. is to have jobs for everybody who wants one, annual income must amount to $150 billion; of this, construction's share is estimated at $15 billion. If prewar ratios are maintained, private construction investment would amount to two-thirds of this or $10 billion. But—according to the Engineering News-Record—A. S. C. E. tabulation—private construction plans now ready for bids add up to only $325 million worth of postwar building (including multiple housing projects over $150 thousand), public works plans represent $735 million.

Federal Works Administrator Philip B. Fleming, who has worried audibly for months about the pace of planning, worried even harder. "The outlook for construction in the immediate postwar period can hardly be described as bright. Nothing can be built without plans, and planning is time-consuming."

General Fleming's gloom increased when he looked at the small purse from which he must dole out funds for advance planning to clamoring state and local governments. President Roosevelt had recommended a planning fund of $75 million to speed reconversion. (Arch. Forum, Feb., '45). But Congress decided that only $17 1/2 million can now be spared to help cities get works plans ready for bids. Last month Fleming figured that this is enough to prepare only about $350 million worth of construction. Since 90 per cent of the money will be allocated to states on the basis of population, New York will get the lion's share—about $1 1/2 million. Some 16 states will get only about $85 thousand each, which they will be obliged to divide among all cities and counties. Planning advances will hear no interest, but must be repaid in full out of the first funds available from any source for construction of the planned works. Any nonfederal government agency with plans to build within three years after the war emergency is eligible to apply for a slice of the slim federal planning fund.
CEILING HIGH

Many an earnest postwarrior has pondered the No. 1 question: how can the U. S. work as hard at peace as it has at war? The 20th Century Fund, which has for sometime been way out in front in the breathless ranks of the planning platoons, last month offered a new confirmation of an old answer. The answer: if the U. S. builds all the houses, highways, factories, and other things it needs, all of its war-expanded productivity can be put to use. The Fund's confirmation: the nation's need for new capital investment in the period 1946-1960 amounts to $28 billion a year (1940 dollars)—or about $8 billion more than gross capital formation in the boom year 1929.

Basing their estimates on careful assumptions about the size and rate of population growth, the labor force, the national income, amount of deferred replacement, etc., Fund economists Robert W. Hartley and Eleanor H. Wolkind present detailed projections of need for capital outlay in four major fields, which normally account for about two-thirds of our total capital expenditure. Here are the average annual outlays the Fund thinks we will need to make (in millions):

<table>
<thead>
<tr>
<th>Field</th>
<th>Annual Outlay (1940 dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urban redevelopment:</strong></td>
<td></td>
</tr>
<tr>
<td>Nonfarm housing</td>
<td>$7,140</td>
</tr>
<tr>
<td>Schools</td>
<td>5,065</td>
</tr>
<tr>
<td>Streets</td>
<td>359</td>
</tr>
<tr>
<td>Hospitals</td>
<td>344</td>
</tr>
<tr>
<td>Water supply</td>
<td>263</td>
</tr>
<tr>
<td>Sewerage systems</td>
<td>236</td>
</tr>
<tr>
<td><strong>Commercial &amp; industrial:</strong></td>
<td>$6,088</td>
</tr>
<tr>
<td>Industrial building</td>
<td>3,507</td>
</tr>
<tr>
<td>Electric power</td>
<td>1,477</td>
</tr>
<tr>
<td>Commercial building</td>
<td>680</td>
</tr>
<tr>
<td>Telephone facilities</td>
<td>424</td>
</tr>
<tr>
<td><strong>Transportation:</strong></td>
<td>$3,567</td>
</tr>
<tr>
<td>Highways</td>
<td>2,208</td>
</tr>
<tr>
<td>Railroads</td>
<td>1,073</td>
</tr>
<tr>
<td>Waterways</td>
<td>150</td>
</tr>
<tr>
<td>Airports</td>
<td>100</td>
</tr>
<tr>
<td>Pipelines</td>
<td>36</td>
</tr>
<tr>
<td><strong>Rural development:</strong></td>
<td>$1,891</td>
</tr>
<tr>
<td>Farm housing</td>
<td>384</td>
</tr>
</tbody>
</table>

Major importance of the study is its expert testimony of a substantial need for capital outlay. As the Fund puts it, "repeatedly we have seen that a major factor in a general downswing is a lessening of money spent for capital equipment," while some determined viewers-with-alarm have argued that the U. S. economy has reached a maturity which will make another cycle of expanding capital expenditure impossible without recourse to artificial stimulation. But, as the Fund knows, need—whether for consumer goods or capital equipment—is not synonymous with demand. Whether the U. S. will build all the houses it needs to shelter its population in a way that belongs to the 20th century—or whether it will build 19th century houses for the top of the market that can afford 18th century financing and 17th century handicraft is a question that neither the 20th Century Fund nor any other postwarrior can answer.

CITIES

DESIGN FOR FLYING

Before the war there were 24,000 private planes in the U. S., and only 359 commercial planes flying scheduled routes. But not many private flyers owned their planes more than four years. About one-third quit after one year of flying; one-half quit after two years. (Continued on page 10)

POSTWAR AIRPORTS to serve private flyers may look like these sample plans. Francis B. Warfield & Associates, Nashville, designed the airpark-recreation center for a site along the Cumberland River, already purchased for private development. Below, left: airparks will open many new resorts to flyers. Right: placed close to the business center, this metropolitan airpark would serve both commuters and city dwellers.
NEWS

The biggest reason, according to a Civil Aeronautics Authority survey: lack of accessible airports.

CAA experts think there will be more than 400,000 privately owned, family-size planes within ten years after the war. There is a big potential market among the thousands of Americans who now know how to fly — 350,000 Army and Navy pilots, 150,000 civilian pilots and students, 250,000 young men and women who have had aeronautical courses in high school. And from an uneasy industry, eying the deflation courses in high school. And from an industry (ARCH FORUM, April, '45), said. Some 500,000 Germans may be put to work helping Britain to repair a few hours. The Germans may be four sections, locked together in a house is delivered to the site in a month ordered 50,000. This aluminum house is delivered to the site in four sections, locked together in a few hours. The Germans may be called upon to furnish prefab houses to Britain as a form of reparations, Minister of Works Duncan Sandys said. Some 500,000 Germans may be put to work helping Britain to repair blitz damage.

BRITISH PREFAB

Last month Britishers were puzzling over erection of the first batch of temporary houses produced by U. S. manufacturers. British workman found the house, whose plan has been sharply criticized by the U. S. prefab industry (ARCH FORUM, April, '45), hard to assemble. Roof sections were especially difficult. Last month National Housing Agency technicians said the house is being re-designed in part. Photos at right show an experimental station where crews are trained to erect the U. S. house.

Some British aircraft plants are already turning out an aluminum prefab (below), and the government last month ordered 50,000. This aluminum house is delivered to the site in four sections, locked together in a few hours. The Germans may be called upon to furnish prefab houses to Britain as a form of reparations, Minister of Works Duncan Sandys said. Some 500,000 Germans may be put to work helping Britain to repair blitz damage.

BRITISH AIRCRAFT PLANTS are already producing this aluminum prefab in quantity.

(Continued on page 12)
The Wood of the Masters

In the golden age of woodworking, Thomas Sheraton wrote, "Of all woods, mahogany is the best suited ... it works up easily, has beautiful figures, and polishes so well that it is an ornament to any room in which it is placed."

In the practical thirties, the Forest Products Laboratory reported, "No wood equals it (mahogany) in workability and resistance to warpage, shrinkage and expansion."

When Pearl Harbor sent scientists on a hunt for the best material out of which to build such new weapons as PT boats and gliders, mahogany again provided the answer.

Today, with a world to rebuild, architects, experimenting with structural qualities of plywoods, report mahogany the most satisfactory in stability and affinity for adhesives.

Truly, mahogany is the wood of the masters, whether the basis of judgment be beauty or utility or strength, whether the application be traditional or contemporary.

Write for your copy of the informative 74-page "Mahogany Book.

MAHOGANY ASSOCIATION, Inc.
75 EAST WACKER DRIVE • CHICAGO 1, ILLINOIS

"After all ... there's nothing like MAHOGANY"
Although there is scarcely a U. S. town without an airport program, few are able to boast specific financing plans. Last month a subcommittee of the Senate Finance Committee considered a half-dozen legislative formulae, all intended to back local airport building dollars with federal funds. Major Congressional difference of opinion centers around local versus federal control. Bills sponsored by Senator Olin Johnston and by Representative Clarence Lea call for grants to be made by CAA directly to sponsoring municipalities. Senators Josiah Bailey, Pat McCarran and Representative Jennings Randolph are sponsoring bills that emphasize state control of all grants for local aircraft construction. Most Congressmen agree that CAA's national airport building plan is a feasible goal for the postwar decade. The CAA program calls for construction of 3,000 new airports—the majority to serve private flyers—and improvement of 1,600 existing airports. Federal funds are sought to cover half of a total expenditure amounting to over $1 billion. If Congress approves, the nation may embark on a building program that will, like the highway building of the inter-war period, reshape its urban pattern.

**TREES FOR BROOKLYN**

Some old residents can remember when trees grew in Brooklyn. Some can remember, too, when the Heights was the most aristocratic neighborhood in all of New York—a colony of financiers who took the Wall Street ferry every day to work. But in Brooklyn as in every other city long fingers of blight have reached into once-sound neighborhoods. Dozens of boarded-up tenements, vacant lots where buildings have been leveled to wipe out taxes, a random jumble of obsolete housing and industry mark the borough's dying areas.

Last month fifteen Brooklyn savings banks—in a history-making agreement—stood ready to undertake a cooperative enterprise that will bring both trees and a healthy neighborhood back to Brooklyn. The banks plan to team together in building housing for 1,000 families on seven acres of blighted land that lies like an ugly scar across Brooklyn's heart. The banks know that commerce will follow the flight to the suburbs—unless Brooklyn finds the way to restore livable neighborhoods. The city knows that the cost of blight is far greater than the cost of getting rid of blight. With the help of some new legal tools and earnest plugging from City Controller Joseph D. McGoldrick (ARCH FORUM, Nov., '44), the banks and the city got together on a new way to attack blight—a plan that may well point a path for many another U. S. city.

Public-private teamwork at its best, the Brooklyn development program is a synthesis of New York's first integrated plan for public-building and the nation's first plan which will enable savings banks to work together in building a large-scale housing project. Last month the Planning Commission approved a $50 million building program that will house all of the public agencies now scattered throughout the borough in a civic center and provide arterial highways to draw through traffic out of Brooklyn's busy central area. The plan provides for plenty of park space, a complete rezoning to move industry outside the arterial highway ring, and an improved street pattern.

(Continued on page 16)
Radical indeed was the Murphy Cabranette "400." It was a creature like Cinderella herself ... transformed from kitchen homeliness to ballroom beauty.

Within the suave lines and opalescent exterior of a console was a kitchen ... complete with range, refrigerator, sink and storage space.

When war came, this radiant creation stole back to its home. But it is only hibernating.

Come peace ... new Murphy Cabranettes will appear ... proud successors to those models which were achieving rapid acceptance when war stopped their production.

... and architects, who will be responsible for America's designs for postwar living, will be the first to learn about the new products ... the finest kitchens in all the world.

Dwyer Products Corporation
Michigan City - Indiana
DAHLSTROM
is a Synonym for
GOOD DOORS

To some perhaps, that statement may appear as “over acting”, but when you consider that we have been making all kinds of metal doors for more than forty years, it rings true. While our best known product is the Dahlstrom Elevator Entrance, we also have had wide experience in manufacturing all types of Hollow Metal Swing Doors and Trim. Now, as America rebuilds for Peace, these well-known Dahlstrom products will again be a complementary part of many fine buildings. If your plans include our type of products, we suggest that you consult us now in order that all preliminary design and engineering problems may be straightened out.

That way, you will be able to make a good getaway when the “green light” shines. Consult us without obligation.

Illustrated above, One of Seventeen Dahlstrom Elevator Entrances in the Warner Bros. Downtown Building, Los Angeles, Calif. Hammered bronze enameled units with bronze enameled striping.

DAHLSTROM
METALLIC DOOR COMPANY, JAMESTOWN, N. Y.

Branch Offices: NEW YORK, CHICAGO, PHILADELPHIA, BOSTON, CLEVELAND, ATLANTA, SAN FRANCISCO
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Information for Architects, Draftsmen and Engineers

Just off the press, a new folder full of useful information on “Underwriter’s Label Service” for Dahlstrom Swing Doors and Trim. Write for your copy today.
Accenting the practical in new bathrooms

In modern bathrooms, the skill of the Architect can be apparent to the most inexperienced home owner. Practical, convenient arrangement of facilities; ingenuity in providing ample storage space; beauty, dignity and harmonious design in fixtures and fittings specified—all these are easily recognizable.

Kohler fixtures and fittings fulfill all requirements for first quality: the fixtures with their sound, rigid construction, permanently lustrous, easy-to-clean surfaces, and appropriately matched designs; the fittings with their sureness and ease of performance, and reliability of all working parts.

The arrangement above includes the new Kohler Gramercy lavatory with built-in fittings and roomy shelf back; the Cosmopolitan recess bench bath, with shower controlled by the efficient Triton mixer; and the quiet, smooth-acting Wellworth close-coupled closet. Quality control of Kohler products is assured by unity of supervision and complete manufacture in one plant—backed by 72 years' experience. If you don’t have Catalog K-41, write Kohler Co., Dept. AF-6, Kohler, Wis.

KOHLER OF KOHLER
PLUMBING FIXTURES AND FITTINGS • HEATING EQUIPMENT • ELECTRIC PLANTS
THE equivalent of 23,000 years of scientific testing fortifies your reputation every time you specify a SMITH-way Permaglas Automatic Storage Water Heater.

Long, highly specialized production experience, specially designed equipment and processes available only in A.O. Smith plants, are among the many "hidden values" responsible for Permaglas; the sparkling blue, mirror-smooth, always sanitary glass fused to steel that permits these modern water heaters to challenge rust or corrosion.

WRITE our nearest office for the booklet—"The Inside Story of Permaglas."

(Continued from page 12)

But some of Brooklyn's most rundown neighborhoods adjoin the site chosen for its glittering new civic center. Controller McGoldrick spoke for many a taxpayer: "I felt that to pour $30 million in public improvements into this neighborhood and leave large parts of its deserts of blight and decay would be to miss a spectacular opportunity. . . . Unless these areas can be rebuilt with private capital and put on a self-sustaining tax paying basis, it is difficult to see how the city could afford the contemplated improvements."

Months ago McGoldrick, now touted for New York's next Mayor, proposed that the city use $20 million to condemn land suitable for redevelopment, rezone the area and offer the new super-blocks for sale to private building. But Mayor Fiorello LaGuardia determinedly thumbed-down the proposal. Only reason on record: "It would put the city in the real estate business." Equally determined, McGoldrick bolted 11 years of Fusion to back his rebuilding plan. Soon Planning Commission backing and the boost of a recent amendment to the state banking law opened the way for this kind of enterprise. Governor Thomas Dewey gave pointed approval to a new law clearly establishing the city's right to acquire property for neighborhood rehabilitation "free of any narrow restrictions as to the type of use to which the cleared property should be put."

Four leading Brooklyn banks had already agreed, pending legislative approval, to buy 5 square blocks at about $3.50 per sq. ft., or 105 per cent of assessed value, if the city would use its power of condemnation to assemble the site, now split among hundreds of small owners. Last month the four banks—the Dime Savings Bank of Brooklyn, the Lincoln Savings Bank, the East New York Savings Bank, the Williamsburgh Savings Bank—were joined by eleven others, who will participate in setting up a housing corporation to undertake a $6 million development.

Only public aid the banks seek is land assembly. Unlike some of Metropolitan Life's postwar projects, this development will get no tax exemption. There will, therefore, be no limits on either rentals or on investment return. Room rents will probably average about $20 a month, and hope is to bolster the neighborhood's financial stability by attracting families of moderate income. Apartments will likely be 12-story buildings and land coverage will be not more than 25 per cent. According to the city's plan, new park space and a new high school will adjoin the site, the new highways will be within easy access, a shopping center and subway are nearby.

Controller McGoldrick hopes that the savings banks' enterprise is only the first of many large-scale rebuilding enterprises in Brooklyn. "We have tried low-cost housing successfully and hoped that the clearance of slums would encourage private capital to clear the surrounding areas. Decent housing for the white collar workers, the professional worker, the medium income group, is not available in our city. If good housing is to be provided for this group, it must be done with private capital. Our hope lies in a broad slum clearance program whereby the city will step in, acquire the land, clear the slums and make it possible for private capital to take on the task from that point."

"Regardless of the present unpopularity of anything having to do with esthetics, the public still responds to the appeal of beautiful and orderly public spaces and buildings. 'Public Works' of a spectacular nature are readily accepted, regardless of cost; the most frequently heard criticism of public housing projects is not their cost but their banality and even ugliness. To a remarkable extent people prefer stones to bread, if only the stones are those of Venice."

—Henry S. Churchill

BILLION FOR REBUILDING

How far can cities pay for their own rebuilding? How much federal aid will they need? Some proponents of large-scale urban redevelopment argue that city pocketbooks are in better shape to stand the expense than the federal pocketbook, already strained by war expenditure amounting to $276 3/4 billion. Others point to cracks already apparent in the municipal revenue base, gloomily predict that the real estate tax structure will crumble under any extra stress.

Last month the Municipal Finance Officers Association took one measure of the ability of the nation's larger cities to finance postwar improvements: a survey of legal debt limits. Checking 65 cities, MFOA found that local governments have a potential $1 1/2 billion to spend on postwar building—or about one-half of one per cent of what the U. S. has so far spent for World War II. This is the legal margin above the cities' outstanding bond debts of $2 1/2 billion. Whether these cities have the economic or tax collecting ability to service $1 1/2 billion additional debt, MFOA made no attempt to estimate.

(Continued on page 18)
Most architects who have used Formica, and therefore have had personal experience with it, see a large future for the material in after-the-war building.

They see a big expansion of its use in many of the applications in which it has already a record of many years of success. They are preparing to specify it for much used doors, such as those on train, bus and air terminals, counter paneling and counter tops, column covering, wainscot, toilet stalls, shelving and many others.

You will find it in excellent condition, looking almost as it did the day it was installed for these purposes, in some of the most prominent public buildings in the country.

Formica is harder than marble and very durable under wear. It is non-porous and stain proof. It is available in a completely cigarette-proof grade for horizontal surfaces. There is a wide range of modern colors, patterns and "Realwoods" in which an actual veneer is introduced into the plastic sheet.

It resists all the various disasters that used to require frequent refinishing of surfaces. It is almost completely upkeep-free.
THIS NEW BOOKLET WILL HELP YOU WHEN HOME OWNERS ASK ABOUT HEATING

Thousands of home owners have already written for their copy of our illustrated booklet "PLAN TO BE COMFORTABLE." They will use it now in planning their homes of tomorrow.

This booklet offers a simple and effective method of discussing home heating problems with prospective owners. You will find it helpful when you are called upon to answer their questions.

The coupon will bring your copy of "PLAN TO BE COMFORTABLE," without charge or obligation.

HEATING DIVISION

The NATIONAL RADIATOR Company

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231 Central Ave., Johnstown, Pa.

Please send "PLAN TO BE COMFORTABLE"

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THE ARCHITECTURAL FORUM
Eljer's consistent advertising in these leading "home service" magazines is read by millions of your clients. Tens of thousands of them continue to write for information about Eljer fine plumbing fixtures in vitreous china and enameled cast iron.

You will secure enthusiastic approval from your clients when you specify and build with Eljer plumbing fixtures.

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Since 1907 Makers of Fine Plumbing Fixtures
DONT BE FENCED IN BY OLD-FASHIONED IDEAS ABOUT WOOD

Wood gave the designer an effect he was seeking here — good looks and security, continuing the feeling established by the building. Savings made possible by the use of wood were especially pleasing to the owner.

THIS WOOD IS Long Lived

Wolmanized Lumber® is ordinary wood made highly resistant to decay and termite attack by vacuum-pressure treatment with Wolman Salts® Preservative. Fiber-fixation prevents loss of protection when the wood is exposed to the weather.

SPECIFY Pressure Treated WOLMANIZED LUMBER

All of the usual advantages of building with wood are retained: paintability, lightness, strength, resilience, excellent insulating properties.

AMERICAN LUMBER & TREATING COMPANY

1647 McCORMICK BUILDING, CHICAGO 4, ILLINOIS

(Continued from page 16)

DIVIDENDS

In Newark, the Housing Authority, headed by able Frank Wenrich, took its first measure of the social effect of its operations, proudly reported community-wide dividends. Residents in housing projects have better health, fewer accidents and fires, less juvenile delinquency than other residents in the same neighborhood.

Comparing three housing projects with the rest of the wards in which they are located, the Newark study found that rehoused tenants contract tuberculosis only about half as often as residents outside.

In 1943, three times as many infants died and there were twice as many cases of communicable disease in the surrounding neighborhood. There was not a single fatal home accident in the projects during the two-year period covered by the survey, while in the rest of the neighborhood there were 2.5 per 10,000 persons. There were 7.9 fires per 10,000 project residents; the rate was 28.2 in other dwellings. If the projects' fire record had been city-wide, the report estimates, Newark would have in one year saved $574,200 — the cost of fighting fires, not counting life and property loss. Juvenile delinquency was lower among project families, and children showed better school records after families were rehoused.

Observed the Newark News: "From the results reported, it is obvious that there is only one thing wrong with low-cost housing projects. There are not enough of them.”

SURPLUS

Someday Vancouver will have on its hands 12,000 units of family war housing, 10,000 units of dormitories, and about 2,000 acres of land. But Vancouver is one city determined not to wait until "someday" to decide what to do about this war surplus. Already local government agencies and civic organizations have teamed together to draw up a plan to forestall indiscriminate dumping of the property and land upon the post-war market.

The Vancouver Housing Authority is asking Congressional approval (required under the Lanham Act) of its plan to acquire the three federally-owned permanent war housing projects in the area and to operate them as low-cost

(Continued on page 24)
EVERY 90 SECONDS...

SHEETROCK Fireproof WALL and CEILING PANELS

Every 90 seconds, fire attacks a home, an office building, or a factory... and no one knows when, where or who is next. Protect against fire! One way is to use fireproof Sheetrock® wall and ceiling panels. For they are made of gypsum, the fire-resisting mineral that cannot burn. In a building they shield the framework over which they are applied till help has a chance to arrive.

You can decorate Sheetrock with any type of finish... the minute the last panel is nailed up. Choose sweeping, unbroken surfaces—welded with joint-concealing Perf-A-Tape®—or feature the joints with the Bevel Edge method. Or if you want ready-finished walls, use Sheetrock woodgrain finishes that are faithful reproductions of Knotty Pine, Walnut and Bleached Mahogany. Write today. 300 West Adams Street, Chicago 6, Illinois.

United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint
MEMORIAL CLOISTER

ADLAKE Aluminum Double-Hung Windows—standard or bay—will be especially suitable for a Memorial Cloister... because... light and ventilation can be easily controlled by mounting the roller-shades at the meeting rails.

ADLAKE Aluminum Windows glide so easily on their nonmetallic weather stripping that their operation is practically effortless. ADLAKE Aluminum Double-Hung Windows cost little in relation to the lasting service they give.

ADLAKE
ALUMINUM
DOUBLE-HUNG WINDOWS

SPECIFY AND DETAIL

ADAMS AND WESTLAKE CO. ELKHART, IND., U.S.A.
What Percent of Building Costs should be spent on HEATING?

With Victory will come a rushing flood of people who have a certain sum of money to invest in a home. To many, this sum will represent life savings. They will need sound, dependable advice on how best to spend that money to receive full value in long-lasting home comfort.

When they ask you, their designer and builder—"what percent of my building costs should be spent on heating?"—tell them this: From 6 to 9 percent is about the average being spent on the heating system. But the most important factor in selecting a heating system is to be sure you're getting fully adequate heating comfort—along with economy. No home, no matter how beautifully decorated or perfectly arranged, can be really liveable without clean, comfortable automatic heat.

So, if some of your clients suggest sacrificing the quality of their heating system in order to afford some other desired feature, remember... the right kind of heating system can provide more long-lasting comfort to the home owner than any other single factor.

Specify Janitrol to give your clients the very best in clean, comfortable, fully automatic gas heating when new home building is again resumed. Janitrol incorporates more new advancements in design and engineering—the result of more than 30 years continuing research devoted solely to the development of gas heating equipment. You can be assured that whatever your post-war houses require in heating, Janitrol will have the most modern equipment that Surface Combustion's complete engineering facilities can provide. For full descriptive and specification data on the complete Janitrol Gas-Fired line, write to Surface Combustion, Toledo 1, Ohio.

Janitrol

GAS-FIRED HEATING EQUIPMENT
Many home owners are familiar with the beauty and distinctive charm Colonial Thatch Shingles give to the typical American home, but Ford is not satisfied with beauty alone. The ultimate in weather protection is built into Ford's Colonial Thatch Shingle by a combination of high grade time-tested materials and manufacturing methods perfected through 80 years' experience in making roofing products. The basic structure of the Colonial Thatch Shingle is composed of extra heavy felt impregnated with Ford's specification asphalt and surfaced with fire resistant mineral granules firmly embedded to make a durable, weatherproof shingle.

Colonial Thatch Shingles retain their original colors, no fading or washing out to mar the color harmony of the roof; they keep that fresh new look for many years. The deep shadow line of the side and head lap gives a rugged character to the roof not obtainable with other types of shingles.

In addition, Colonial Thatch Shingles are wind and storm resistant. Each tab is locked securely to the roof by a rustproof metal staple, machine applied, to form a firm integrated roof structure. This modern locking feature makes the Colonial Thatch Shingle particularly adapted for applying over old roofs. Ford's Colonial Thatch Shingle is one of the most popular roofing products ever made.

FORD ROOFING PRODUCTS COMPANY
Chicago 2, Ill.
York, Pa. 
Vandalia, Ill.

MONTH IN BUILDING: NEWS
(Continued from page 20)

housing. The developments total 1,000 units, which the authority believes is enough to take care of all the city's low income families.

The school district plans to use surplus federal lands for a postwar building program, expanded to meet the needs of the 50 per cent of all immigrant workers who hope to stay in Vancouver after the war.

The health department hopes to build a tuberculosis sanatorium on the site of one temporary war housing development. Parks, a golf course, a riding academy and a cemetery are planned for other surplus lands. After these community needs are cared for, the remaining lands will be replatted for sale to private home builders. According to the Planning Commission, about 1,000 home sites can be sold without flooding the real estate market through excessive subdivision.

PEOPLE

PRESIDENTS
Last month these Building men stepped to the front:

James R. Edmunds, Jr., Baltimore, new president of the American Institute of Architects. Edmunds, whose long list of civic jobs includes the chairmanship of the Baltimore Housing Authority, believes it is high time "to widen the scope of our activity as individuals beyond the narrow confines of our own little practice and to make more adequate contribution to the ends of public common good — each in his own community."

L. C. Hart, just-elected president of the Producers' Council, already busy plugging for priorities to assure retooling for materials manufacturers. Now vice-president and general sales manager of the building materials department, Hart went to work for Johns-Manville 31 years ago as an acoustical engineer.


OLD, HOMELY HARMONY
New York's reliably provocative Park Commissioner Robert Moses accepted the National Sculpture Society's medal of honor for civic achievement, promptly (Continued on page 21)

THE ARCHITECTURAL FORUM
The substantial savings made with Reading Anthracite Barley in heating and power plants of any size are a welcomed discovery to many architects, design engineers, realty maintenance engineers and purchasing agents. For in many instances these savings are running over 10%.

But economy is not the only advantage of this small-size hard coal. Let's examine other advantages:

AVAILABILITY—There's never a supply problem. You can purchase next winter's requirements of Reading Barley now—and store it safely. It's not subject to spontaneous combustion or deterioration.

EFFICIENCY—Reading Barley is top quality, smokeless Pennsylvania anthracite—highly efficient in hand-fired equipment, either forced or induced draft as well as on traveling or chain grate stokers.

CLEANLINESS—Dirt and other impurities are removed from Reading Barley by our modern laundering methods—making it as clean as any coal you can buy.

Reading Anthracite Barley is not a "substitute" fuel. Hitherto overlooked by many, it is becoming recognized as a coal of exceptional merit—deserving of every consideration as a permanent means to economy and efficient service.

Whether your future plans include the use of present equipment or a new installation—we believe that Reading Barley Anthracite would give you the same gratifying results that others are experiencing. You are cordially invited to use the coupon.
Explanation: Extra-thick butts of Bird Master-Bilt asphalt shingles cast deep shadow lines and give envied massive appearance, matched by practical gains in extra years of wear. The thickness of shingle where exposed to weather results from double layers of asphalt and granules. While the top layer of granules protects the surface from damaging sunlight, the extra inside layer acts as reinforcement between the layers of asphalt to resist checking and cracking. Available in a variety of colors, with quality assured under Bird’s exclusive method of Controlled Production.

P. S. These shingles meet all F. H. A. requirements, and are approved by Underwriters’ Laboratories, Inc., as fire-resistant.


TIME-SAVING SPECIFICATION DETAILS FOR BIRD Master-Bilt ROOFS — Valley Treatment

Fit snugly into valley, 2 layers of 90-lb. Mineral Surfaced Roofing, the bottom layer 16” wide, the top layer 20” wide, both centered on valley. Nail along edges; Snap chalk line each side of valley, 4” from center at top, 5” at bottom. Cut edges of shingles bordering valley to fit chalk lines. Cut 2” triangular piece from top valley corner of each shingle to prevent seepage at tips bordering valley. Embed valley edge of shingle in Bird Plastic Cement applied in strip 3” wide, ½” from chalk line.
THE EASIEST ROOM TO SELL

You sell a house as a whole, but the prospect is sold on it ROOM BY ROOM.
• When the kitchen is modern, all-steel by Youngstown, there is little left to be said about that room.
• The imposing, glistening, Youngstown Kitchenaider, instead of an old fashioned sink, catches every woman's fancy. The streamlined, sturdy, sound-insulated cabinets are quality to the eye and to the touch.
• Send for the new "Builder's Kitchen" catalog and see what builders all over the nation say about Youngstown Kitchens.

MULLINS MANUFACTURING CORPORATION
WARREN, OHIO
Design Engineering Service • Large Pressed Metal Parts • Porcelain Enamel Products

YOUNGSTOWN KITCHENS
by Mullins
In most industries there are definite standards of leadership. In many industries these standards are known, accepted, even taken for granted by middleman and public.

Previous to 1935 the only accepted signalling instrument for the modern home was the common door bell. With no pre-established standards of research, engineering, construction or performance of electric door chimes to work by, Rittenhouse did much to lay the foundation upon which the standards of the industry have been built.

Since December 1935, when Rittenhouse designed, produced and promoted the first electric door chime on a national scale, Rittenhouse has continuously built toward a standard of leadership in product engineering, design and performance. And with comparable consistency has promoted consumer chime acceptance through nation-wide advertising, in keeping with the best practices of merchandising.

War production techniques have given both inspiration and impetus to these standards of leadership. In the interim period between war and peace, time has been found to improve the design of chime mechanisms from the "base plate" out. Tomorrow's Rittenhouse chimes will reflect this influence in fine engineering and in the character of a custom-made product.

Leadership, and the standards which it imposes, carries with it two moral commitments, "Obligation" and "Responsibility"—to user and dealer.

Rittenhouse will continue to adhere to these standards of leadership in the young, but growing, electric door chime industry that it has helped to create.

**Rittenhouse**

**Tomorrow's Better Door Chimes**

THE A. E. RITTENHOUSE COMPANY, INC., HONEOYE FALLS, N. Y.

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(Continued from page 24)

moved his ancient war with federal bosses into an esthetic dimension:

"God forbid that the atrocities of WPA art should be repeated after this war—stylized, symbolic, dehumanized people representing Fishing, Farming, Fire Insurance, Pan Americanism, Peace and Penicillin, or what not, who look as if a drunken woodsman had hacked them out of an old oak with a dull axe, inanimate frozen eagles with bell-bottom trousers, bronze Mongoloid cigar store Indians, gaudy, abstract, geometrical horrors, distorted freaks, and barroom frescoes. I do not say that no good was to be found in WPA art. I merely insist that the search was like getting nourishment out of an artichoke or mining for a pinch of radium in the side of a mountain. Let us, in Heaven's name, have no more talk of a cabinet post for the fine arts, because government control, as distinguished from government encouragement, means the triumph of the lowest common denominator."

Appended municipal boss Moses: "... public administrators must be conservative... they use the taxes collected from the average not the exceptional citizen... what they do must wear well, and... they have no right to introduce new and discordant notes into old and homely harmonies and architectural eccentricities into established neighborhoods merely because they think that the public ought to change its taste and get up to date."

**PUBLIC ADMINISTRATION PIONEER**

In 45 years of active public service, Louis Brownlow has probably told more memorable stories and done more to improve municipal administration than any other man in the U. S. Last month Brownlow moved out of "1313," Chicago headquarters of the Public Administration Clearing House. Into his place as director stepped his longtime friend and colleague, Herbert Emmerich, who served as Federal Public Housing Authority Commissioner in 1942 and 1943.

When Laura Spelman Rockefeller funds were made available to set up the Public Administration Clearing House (Continued on page 32)
What is Suntile color balance? It is the scientifically balanced relationship of the colors in the Suntile palette. Recognizing the importance of color in everyday living, seven years ago Suntile pioneered the way in color selection and introduced its now famous principle of color balance.

The Suntile palette is based on long years of research in the field of color. The endless variety of color combinations possible with Suntile provides the architect with the maximum number of artistic and authentic arrangements. Suntile's color glazes are all scientifically selected for distinctive and lasting beauty.

Suntile will be made again when our war assignment is completed. Plan now to include the color-balanced beauty of Suntile in your blueprints for tomorrow.

"This place reeks with atmosphere, but for my part I'll take a Suntile kitchen. It's COLOR BALANCED!"
How do you rate with your neighbors?

You design their homes . . . their churches . . . their schools. You help plan their town. Your town.
And, on these buildings, your reputation rests. You know this . . . and you plan well.
We, at Flintkote, know it too. And we know that good design demands the complement of good building material.
That's why every Flintkote product is carefully pre-tested to insure extra years of peak service.
That's why materials, manufacture and inspection must meet rigid Flintkote standards . . . why, at Flintkote, skilled labor works under expert, experienced supervision.
We've been making building materials for a long time at Flintkote . . . almost 50 years. And all we've learned about making better shingles, better sidings, better insulations, is passed on to you in every Flintkote product . . .
Passed on to you . . . to protect your reputation with your neighbors.

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• Waco • Washington

THE ARCHITECTURAL FORUM
Here's your answer to the problem of getting maximum daylight and positive control of ventilation for industrial buildings with saw-tooth or monitor type roofs.

The use of Truscon Continuous Steel Windows and mechanical operators assures the delivery of ample light and fresh air to production floors, even during inclement weather.

Truscon Continuous Steel Windows are hung on a continuous hinge, an exclusive time-proved Truscon feature, which insures straight alignment, positive weathering, and complete freedom for expansion and contraction. There is no binding, wear on pins, hinges or other fixed parts and no flashing is necessary.

For more than twenty-five years Truscon has coordinated the design and manufacture of mechanical operators with its complete line of steel windows, and has made constant improvements to meet the ever changing problems of industry. The benefit of all this experience is available to you now. Request a Truscon window engineer to help you adapt these windows and operators to your post-war jobs.
The standardization of shower cabinet and glass door sizes announced by Fiat marks a step forward in the industry that will be of definite benefit to the architect, builder, jobber and plumber. Standardization will expedite bathroom planning, make possible bigger values in showers, simplify jobbers stocks, and promote uniformity in installation methods. Fiat showers are classified into four groups with six basic sizes.

**GROUP NO. 1**
Skipper type, low cost showers
32 x 32 x 76

**GROUP NO. 2**
Cabinet type, medium priced showers
32 x 32 x 80
36 x 36 x 80
36 x 36 x 80 (corner)

**GROUP NO. 3**
Marine, Ensign type, for 'above average' installations
32 x 32 x 80
36 x 36 x 80
36 x 40 x 80
40 x 40 x 80 (corner)

**GROUP NO. 4**
Admiral type, de luxe class
32 x 32 x 80
36 x 36 x 80
40 x 40 x 80
40 x 40 x 80 (corner)

Measurements conform to the American Institute of Architects 4" unit module system.

Glass Shower Doors
One standard size—24 x 72

**NO. 85**—Recommended for homes, clubs, hospitals or public buildings. Size 36 x 36 x 78. Deep type receptor—heavy 1/4" MASONITE walls.

**NO. 80** Volunteer—has remarkable strength and is easily erected. A good shower for economical installations. Size, 32 x 32 x 76 and 30 x 30 x 76.

AVAILABLE FOR DELIVERY NOW

in 1930, Louis Brownlow saw the realization of an idea for which he had been a consistent missionary: the improvement of administrative methods by exchange of ideas among public officials themselves. A one-time Washington correspondent, Brownlow began his career as a public administrator when President Woodrow Wilson, impressed by some Brownlow articles on administrative management, appointed him Commissioner of the District of Columbia. Emmerich and Brownlow got acquainted when both were officers of the City Housing Corporation of New York, a private limited dividend company which developed Radburn, N. J.—the famous community which has set a pattern for municipal planning over the last 15 years. Emmerich was associate director at PACH until he was appointed executive secretary of the War Production Board in 1941.

Among the PACH organizations are the American Society of Planning Officials, the National Association of Housing Officials, the American Public Works Association, the Governors' Conference, the International City Managers Association. Retiring director Brownlow will continue to serve as consultant.

MATERIALS

**EARNINGS UP**

Although this year Building dropped to its lowest level since the beginning of the war in Europe, the expected decrease in materials' manufacturers earnings has so far failed to show up generally. First-quarter reports showed a slight increase for a majority of producers. Net earnings:

<table>
<thead>
<tr>
<th>Company</th>
<th>1st Qt. 1945</th>
<th>1st Qt. 1944</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amer. Home Prod.</td>
<td>1,333,000</td>
<td>1,203,000</td>
</tr>
<tr>
<td>Amer. Radiator</td>
<td>1,224,000</td>
<td>1,114,000</td>
</tr>
<tr>
<td>Atlas Plywood</td>
<td>300,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Central Foundry</td>
<td>82,000</td>
<td>25,000</td>
</tr>
<tr>
<td>Chapman Valve</td>
<td>119,000</td>
<td>230,000</td>
</tr>
<tr>
<td>Dresser Industries</td>
<td>735,000</td>
<td>389,000</td>
</tr>
<tr>
<td>Flinthake Co.</td>
<td>325,000</td>
<td>318,000</td>
</tr>
<tr>
<td>Holland Furnace</td>
<td>4,000</td>
<td>39,000</td>
</tr>
<tr>
<td>Johns-Manville</td>
<td>1,396,000</td>
<td>1,452,000</td>
</tr>
<tr>
<td>Kalamazoo Stove</td>
<td>211,000</td>
<td>124,000</td>
</tr>
<tr>
<td>Libby-Owens-Ford</td>
<td>1,903,000</td>
<td>2,412,000</td>
</tr>
<tr>
<td>Long Bell Lumber</td>
<td>534,000</td>
<td>443,000</td>
</tr>
<tr>
<td>Masonite</td>
<td>295,000</td>
<td>227,000</td>
</tr>
<tr>
<td>Minn. Honeywell</td>
<td>887,000</td>
<td>747,000</td>
</tr>
<tr>
<td>National Gypsum</td>
<td>281,000</td>
<td>234,000</td>
</tr>
<tr>
<td>Otis Elevator</td>
<td>704,000</td>
<td>638,000</td>
</tr>
<tr>
<td>U. S. Gypsum</td>
<td>1,396,000</td>
<td>1,452,000</td>
</tr>
<tr>
<td>Wallworth Co.</td>
<td>278,000</td>
<td>473,000</td>
</tr>
<tr>
<td>Westinghouse</td>
<td>4,008,000</td>
<td>4,604,000</td>
</tr>
</tbody>
</table>
Unless they're counselled wisely, far too many home builders, sooner or later, will find themselves in gilded cages. Beautiful to look at but miserably disappointing because of a basic functional shortcoming. Here's what we mean—

People who build now or in the near future should provide for reserve electrical capacity to take care of the many appliances they'll want in the days and years ahead. Air-conditioning units, all-electric kitchens, deep-freeze cabinets, television, motor-powered work shops—eventually, they're going to want such electrical servants in their homes. If they do it later, they'll have a major and costly re-wiring job on their hands.

You'll be doing your clients a lasting service by showing them how full comfort wiring with spare circuits, combined with Multi-breaker convenience and protection, will keep them out of a "gilded cage."

The Multi-breaker eliminates fuses completely. When a short circuit or dangerous overload occurs, the circuit is cut off automatically. A simple movement of the lever restores current after the cause of the overload has been removed. There are no delays—nothing to replace.
This is our choice of floors for

APARTMENT HOTELS

Standard Asphalt Tile is ideal for halls and stair landings, as well as for office, store, and laundry. It's a good-looking floor, economical to maintain. Armstrong's Asphalt Tile may be used on suspended, on-grade, or below-grade floors.

Industrial Asphalt Tile offers a rugged, low-cost flooring for storage rooms and meter rooms. It's nonsparking, nonslip, and fire resistant. Like Standard Asphalt Tile, it resists moisture and alkali. It can be installed over concrete floors on- or above-grade.

Greaseproof Asphalt Tile is a desirable floor for areas which are subject to spilled grease or oil, as in the kitchen and pantry or around equipment in the machine shop. It has all the advantages of Standard Asphalt Tile, too—including use on every type of floor—on grade, below grade, or suspended.

Linotile (Oil-Bonded) combines two qualities which make it especially suitable for the lobby, bar, and restaurant—distinctive appearance and high resistance to denting and wear. Available in a wide range of marbleized colors, this exclusive Armstrong Floor is easy to clean.

For full information about the complete line of Armstrong's Resilient Floors—including Armstrong's Conductive Asphalt Tile, a floor that prevents the accumulation of static electricity—and Armstrong's Safety Floor Coating, a new, nonslip ramp covering—consult Sweet's or write to Armstrong Cork Co., Resilient Tile Floors Department, 2306 Duke Street, Lancaster, Pennsylvania.
Easy to look at . . .
Easy on Fuel Bills too!

Kewanee
ROUND "R" STEEL BOILER

One look at the Kewanee Round "R" in its trim insulating jacket will prove its attractiveness. BUT, even more important, a look inside that jacket shows a healthy heart of steel which provides extra years of service . . . and saves fuel every year.

NOTE the "Flame Cut" cross section showing the proportionately high firebox for complete combustion . . . the two-pass travel of gases from the rear to the front, then to the rear again . . . the Spinner Blades which fling the hot gases against the tubes. Note also the large water content and unobstructed waterways which permit steam to rise without unnecessary turbulence. YES . . . the Round "R" is a "Saving" boiler.

For Oil, Gas, Stoker, or Hand Fired
Sizes to Heat 225 to 1737 Sq. Ft. Steam

Kewanee Boiler Corporation
KEWANEE, ILLINOIS
Branches in 60 Cities—Eastern District Office: 40 West 40th Street, New York City 18
Division of American Radiator & Standard Sanitary Corporation

75 YEARS BOILERMAKERS
House Omnibus... Royal Barry Wills on nostalgia... Puerto Rican blast... Letter from France.

APRIL ISSUE

Forum:

Speaking as the head of an organization which, for more than a quarter of a century, has specialized in good residential development in Los Angeles and in the San Francisco Bay District, I am impelled to say that the "House Omnibus," central theme of your April issue, is by far the most expert, authoritative and informative exposition of the present trends of postwar housing that I have yet seen.

Inasmuch as several hundred families have acquired home sites in three or four of our large, better-type projects, we believe it would be immensely helpful if, in endeavoring to answer the avalanche of questions which are constantly heaped upon us by these prospective home owners, we could place in their hands this clear and invaluable exposition of the whole postwar subject.

WALTER H. LEIMERT

Los Angeles, Calif.

YOUR HOUSE OMNIBUS TERRIFIC. CAN WE BUY TEN THOUSAND COPIES OF ENTIRE SECTION AND/OR GET ORIGINAL ARTWORK FOR A STOREWIDE DISPLAY GIVING FULL CREDIT TO VARIOUS MAGAZINES AND ARCH FORUM. ENTIRE BOOK SIMPLY OUT OF THIS WORLD.

DAVID ARONS,

GIMBEL BROTHERS

PHILADELPHIA, PA.

Forum:

The Forum does it again! Congratulations on the only realistic estimate of postwar housing trends any magazine has yet published.

HANSEL STACK

Chicago, Ill.

Forum:

... expert analysis of what builders may expect in the postwar homes market.

ALFRED JUBENICK

Indianapolis, Ind.

LEANTM FROM BOSTON

Forum:

Nostalgic — Nostalgic — Nostalgic! (Arch Forum, Apr. '45, p. 135) "Homiesickness to the point of melancholia" says Webster's. And in Reget's Thesau-

roy, bracketed under "Home-sickness," "repine, regret, bewailing, lamenting, maladie-du-pays, infandum renovare dolorum" and last of all, "cast a longing, lingering look behind me," to say nothing of "leaving an aching void."

Anyway, is there no kindlier word?

Ten years ago we started banging our heads against a stone wall trying to do modern houses, and we worked hard at it and did some that were considered very good by the powers that be. And still clients come in for traditional houses about 40 to 1. And it would be about 80 to 1, if we could find the time to do the other 40.

Honestly, do you really believe that people are ever going to take to modern houses? Sometimes I think the magazines are out of step with the public. I feel that when someone takes a poll like Mary Davis Gillies that it is far from correct. You know somebody took a poll on automobiles to be used after the war and 90 per cent of the people were going to buy Packards. Well, you and I know that they will probably buy second-hand Fords. I believe it is the same way with the house polls. Everyone votes for a "modern" house, because they are building an up-to-date one. And then the polls show a modern trend.

Actually, it is harder now to persuade people to build modern houses than it was ten years ago.

ROyal BARRY WILLS

Boston, Mass.

To architect Wills, outstanding authority on Cape Cod houses, a reprimand for low-raking the human and universal emotion of nostalgia. The Forum views with skepticism his figures as proving anything except that "the best colonial houses of all come, not from Carnegie Hall, but from Royal Barry Wills."--Ea.

GOOD OMEM

Forum:

I approve very much of your series of articles on postwar building methods, materials and equipment... It should be continued at frequent intervals so that we less technical people can take stock of all the miscellany that will be thrown at us in increasing quantities.

My friends have been reading these articles and feel as I do that too many new things are taken for granted without knowing much about them or their best applications or their best qualities impartially analyzed without the bene-

fit, of advertising blurbs which are glitteringly general, but vague on actual facts... This series is a good omen and a step in the right direction.

VICTOR TARA

Flushing, New York

WEST INDIAN HEAT

Forum:

I have just received my copy of The Forum for March, containing the article on the work of Mr. Richard Neutra in Puerto Rico. Permit me to identify myself. I am Stephen V. Arneson, shown as Program Director in the list of personalities at the top of page 121.

The article to which I refer is the biggest blast of hot air I have ever encountered in any magazine and that is saying something in this world. I am sure you would never have published it if you had asked for and received comment from any of the people associated with the work in Puerto Rico... Only one carpet-bagger in the United States could have written such a self-laudatory article and it is no credit to The Forum that you published it.

STEPHEN V. ARNESON

Panama, R. de P.

The Forum regrets that Mr. Neutra's excellent designs do not please everyone in Puerto Rico.--Ea.

NEVER-ENDING WINDSOR

Forum:

As a furniture manufacturer of fine maple reproductions, we were particularly interested in the article entitled, "The Windsor Chair" on p. 113 of the March issue. This is both interesting and educational but, at the same time, controversial. On p. 116, the last paragraph headed "end of the Windsor chair era," contains the following few sentences:

"No Windsor chair, pure or decaying, is adaptable to modern production methods or living standards. Steam heat dries out its numerous joints, renders the entire structure brittle and shaky. In colonial times, the selection of the wood, careful shaping and delicate joinery were decisive factors in the quality of the product. Mass manufacture can afford neither the time nor the facilities for such methods."
We will help you **Reduce your overhead** on Store-Front work!

The **Kawneer man** in your territory will help you reduce overhead on store-front work in three ways:

1. He will provide design and merchandising data, based on national experience with all types of retail stores, which will cut your research time and assist you in creating effective "Machine For Selling" store-fronts.

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Over 250 Kawneer distributors will assist Kawneer field men in these new services to architects. Write today for new booklet, "The Architect and Machines For Selling". THE KAWNEER COMPANY, 206 FRONT STREET, NILES, MICHIGAN. (Western Factory, Berkeley, Calif.)
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• You'll want to be posted on the ever-increasing importance which science attaches to the FUNCTIONAL use of color as a "tonic" in industry—to improve production, safety conditions and employee morale and to reduce absenteeism.

A new book, "Color Power for Industry", tells you how the Optonic Color System operates. Just a note on your business letterhead will bring you a copy with our compliments.

THE ARCO COMPANY
CLEVELAND, OHIO • LOS ANGELES, CALIF.

ARCO
Paints for Industry

LETTERS

(Continued from page 36)

We strongly object to the wording and the thoughts expressed, on the grounds that we do know how to make Windsor chairs that are adaptable to modern methods and practical for present-day living standards, much more so than several of the contemporary examples illustrated. All of the lumber used in our product is kiln-dried, joints are both glued and held together with blind wedges which insure a tight fit even if the glue does dry out. These, together with good tight joints, make a fine Windsor chair—much better we think than chairs our grandparents made by hand with careless construction and ill-fitted joints whittled out with a not-so-sharp knife.

We do not mean to imply from the above that we are unsympathetic toward contemporary design as 40 per cent of our production is given to a line known as "American Modern." We are sure, however, that we have the "know-how" to make really fine Windsor chairs.

CHARLES C. BROOKS, JR.
Vice Pres., Conant Ball Co.
Gardner, Mass.

The Conant Ball Co., fine copyists of fine 18th century Windsor chairs, could probably reproduce Conoostga wagon wheels but we doubt if Henry Ford would use them—except in his museum. En.

VITRILOC FLAILING

Forum:

I feel it necessary to voice a protest to some of the remarks contained in W. L. Pereira’s letter published in the April issue of THE FORUM.

Mr. Pereira, after viewing some of the postwar projects on the boards of local architects, is disgusted. Since I have not had the opportunity of seeing these designs I cannot agree—nor conversely, disagree—with his opinion. No doubt Mr. Pereira is thoroughly sincere in his unhappiness, but I find it most unfortunate that he chooses to make an overall criticism of not only the work he saw, but of the professional integrity of the designers themselves. If this is Mr. Pereira’s method of aiding the cause of modern design, he is defeating his purpose, for I find it difficult to believe that all those designers left traditional work for the sole reason that “it was profitable to ‘go modern’.” No doubt that stigma applies to many, but there must be a few who have seen the light and are sincerely trying to make good.

If Pereira is noting with apprehension the tendency of traditional designers to turn “modern,” then I note with apprehension the tendency of many modern designers to indulge in wholesale condemnation of work that does not parallel their particular design philosophy. I would think that anyone sincerely interested in promoting the cause of modern work would welcome converts, and through a judicious process of elimination would sort the sincere from the insincere. Perhaps Mr. Pereira agrees, but I can find nothing in his letter that would make us think so.

I too deplore the “phonies” who are willing to accept the Form of modern work, but who reject the Function of contemporary planning. But, vitriolic flailing will not discourage them one bit and will, I am afraid, discourage the sincere traditional designers from becoming converts just when they need all the encouragement we can give them.

We must exercise a degree of selectivity based not so much on immediate design results, but on the sincerity of purpose of the designer.

ROBERT E. FAXON
Beverly Hills, Calif.

A commendable attitude but somewhat tough on clients.—En.

SOLAR MIO

Forum:

I should like to tell you how much help THE FORUM has been to my husband and me in the planning of our future home. As soon as we began the negotiations for the purchase of our land we started a subscription and have written to many of your advertisers for booklets and information. Now many of my husband’s shipmates (he is an officer in the Coast Guard) come to borrow from his expanding library of building information. We have been amazed when talking with other home-planning couples at their complete ignorance of such things as radiant and solar heating taken for granted in your pages.

We feel that, thanks to THE FORUM, when the time comes for building a home we will be able to cooperate fully with our architect, so that he will know exactly what we want and will be able to give it to us.

MRS. RODNEY PAIN
San Diego, Calif.

(Continued on page 40)
Laucks Construction Glues will be used in thousands of tomorrow's homes just as effectively as they are used today in America's largest housing project.

Architects, builders, contractors and prefabricators have proved to themselves and to the building world, the strength, durability and practicality of wartime's new building techniques using Laucks Construction Glues.

In all types of tomorrow's homes, factories, hangars, warehouses and public buildings, war-proved engineering-with-wood-and-glue will be inevitably adopted. And as usual Laucks will be there to deliver proved products for the job, and the engineering "know-how" for utilizing them successfully in prefabrication, stressed-cover construction, dry-wall building, cabinet and built-in-work, laminated arches and beams.

**TODAY**

World's largest housing project: 24,000,000 ft. of plasterboard glued to studding with Laucks 888-P Glue.

Architects, builders, contractors and prefabricators have proved to themselves and to the building world, the strength, durability and practicality of wartime's new building techniques using Laucks Construction Glues.

In all types of tomorrow's homes, factories, hangars, warehouses and public buildings, war-proved engineering-with-wood-and-glue will be inevitably adopted. And as usual Laucks will be there to deliver proved products for the job, and the engineering "know-how" for utilizing them successfully in prefabrication, stressed-cover construction, dry-wall building, cabinet and built-in-work, laminated arches and beams.

**TOMORROW**

Plywood walls and ceilings, laminated and glued to studding with Lauxite Resin.

Laucks Construction Glues will be used in thousands of tomorrow's homes just as effectively as they are used today in America's largest housing project.

**LAUXITE RESIN**

**PF-90C**

Completely waterproof, weather-resistant, boil-proof, phenolic type liquid resin adhesive to which a separate catalyst is added at mixing time. Sets at room temperature (70°F.) on softwood. Slightly higher for hardwoods (110°-140°F.) for laminating, veneering, and assembly gluing. Especially adapted for aircraft and marine construction, arches, beams, prefabricated units subject to exposure and water.

**LAUXITE RESIN**

**77-X**

Urea formaldehyde resin glue in powder form with catalyst incorporated. Mixes quickly in tap water; no heating, no waiting. Highly water-resistant. Recommended for use on prefabricated units, arches and beams. For hard or soft woods.

**LAUXEIN GLUE**

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High quality casein glue in powder form. Meets U.S. Navy Specification 2368b (with Amendment C) and A.A.F. Spec. 14122, for dry strength, water-resistance and working life; makes unusually strong, quick bonds. Used on either hard or soft woods. Excellent results at low pressures. Contains a preservative to inhibit mold growth. Used for prefabricated walls, laminated arches, beams.

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Sand-Blasting Opens NEW VISTAS of Decorative Utility for BLACK SERPENTINE

The wide range of decorative possibilities in sand-blasted ALBERENE Black Serpentine is demonstrated in the spandrels, designed for Catholic Seamen's Institute, Brooklyn, N. Y., by Henry V. Murphy, Architect. These are typical of the many new treatments and interesting finishes that ALBERENE has developed for the enrichment of current and post-war buildings.

Wherever a design calls for stimulating contrasts or accents, Black Serpentine is preeminent ... a most practical choice from the standpoints of economy and availability for spacing, bulkheads, panels, spandrels, façades. So dense and tough is this stone that it may be cut as thin as 7/32", and its durable polish is lustrous but non-reflective.

A request on your business letterhead will bring samples, conveniently boxed, of Black Serpentine, Tremolite Green and our mottled blues and greens.

Please address Alberene Stone Corporation of Virginia, 419 Fourth Avenue, New York 16, N. Y. Quaries and Mills at Schuyler, Virginia. Sales offices in principal cities.
S\textsc{S}TAINLESS\ STEEL diesel-electric streamliners aren't drawing-board dreams. They're tangible, self-proved successes with a ten-year operating record from coast to coast—and from war's end on, they're due to go places in earnest.

Why? Because these stainless speedsters have demonstrated—in good black ink on the books—their ability to slash expenses, attract customers and boost income, and you can't beat that for a success formula.

It is a formula, what's more, that applies clear across the transportation field. The same qualities in Allegheny Metal that the railroads value are of equal advantage to the builders of buses, truck trailers, airplanes and ships. It all comes back to the tremendous strength of the steel—\textit{insured} strength, protected by Allegheny Metal's high resistance to corrosion and complete uniformity... to its lustrous beauty, requiring no other finish or consequent refinishing... and to its ease of welding and fabricating.

Anywhere that these properties can be used to advantage—and that's certain to be true of your field—we stand ready to supply every assistance.

\textbf{Allegheny Ludlum Steel Corporation}
Brockenridge, Pennsylvania
A Mueller Climatrol System to condition the air

...A Mueller Season-stat to keep the system in step with the weather

True Indoor Comfort and a satisfied client

There are many factors required to provide Indoor Comfort. They are all dependent upon the treatment and circulation of air. Continuous circulation of air, heated to a temperature in relation to the outdoor temperature, is attained with the Mueller Season-stat throughout the heating season. A simple adjustment does it. . . . You are providing an installation whose basic function is the treatment and circulation of air when you specify Mueller Climatrol Winter Air Conditioners, equipped with the Season-stat — for gas, oil or coal. Mueller equipment is nationally-known, nationally-advertised, backed by an 87-year performance record. Write for bulletins. L. J. Mueller Furnace Co., 2001 West Oklahoma Avenue, Milwaukee 7, Wisconsin.

THE ARCHITECTURAL FORUM
Famous Industrial Designer
Brooks Stevens

STYLES the NEW COOLERATOR
for Postwar Homes

Here's an electrical refrigerator that's styled right for the postwar kitchens of tomorrow! Brooks Stevens and his staff worked for months before submitting 60 beautiful, workable designs. These 60 designs were then consumer tested and the design for the New Coolerator Electric was found to be the favorite of women everywhere!

When you design tomorrow's kitchens, remember the Coolerator Electric,—the only refrigerator with the exclusive MAGIC FLAVOR-SAVER!

ICE-CONDITIONED COOLERATOR—Available in 5¼ and 6½ cu. ft. Models. The perfect refrigerator for women who prefer ice.

COOLERATOR HOME FREEZER
Available soon in 6¼ and 16 cu. ft. size. Contains compartment for freezing foods as well as storing frozen foods.

The Coolerator Company, Duluth 1, Minn.

BUY MORE WAR BONDS
INNEAR DOORS
offer ADDED
SAVINGS with
this KINNEAR
Motor Operator

Just touch the button and the KINNEAR Motor Operated Rolling Door coils upward without further effort or attention. Touch the button again and the door closes smoothly. The door can be quickly stopped and reversed at any point in its travel. The "attention-free" operation of the KINNEAR Motor Operated Rolling Door assures added savings in manpower, in heating and air conditioning costs, and in time. Remote control switches, permitting the door to be operated from any number of distant points, may also be used.

The KINNEAR Motor Operator is an integral unit, insuring accurate alignment, quieter operation, greater efficiency and minimum maintenance. The motor is a specially designed high torque output unit, matched to the load requirements of the door. Worm gears are of bronze and the worms are of polished, hardened steel; both are machine cut. Precision ball bearings, graphite oilless bearings, bronze bushings and large sealed oil reservoir for adequate lubrication with minimum attention, are incorporated in the KINNEAR Motor Operator.

For complete information on KINNEAR Motor Operated Rolling Doors, write today! The KINNEAR Mfg. Co. Factories: 1640-60 Fields Ave., Columbus 16, Ohio; 1742 Yosemite Ave., San Francisco 24, Calif.

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OTHER KINNEAR FEATURES INCLUDE
...Flexible steel slat curtain that coils up out of the way, clearing the opening completely.
...Helical spring counterbalance that assures smooth, easy operation.
...Kinnear "tough" all-steel construction stands up under hard night - and - day service.
...Wall, floor and ceiling space around door always usable.
...Many others.

LETTERS
(Continued from page 40)

of a thousand-year empire. We are using France as we used the temporary, makeshift harbors which we floated across the channel to the Normandy coast on D-day. We will be gone quite soon. And the French Government is going to have the job of the century. We don't envy them.

Today Frenchmen are colder, hungrier, less looked-after than they were under the Germans. These are facts. They don't reflect on anyone. The French will learn again to run their own country. We are helping them now, but that is second only to our prime purpose. That again is a very difficult thing to explain to starving children.

Paris is quite different. Except for its industrial suburbs, it has not been touched by the bombs at all. It has none of the somber heroism of English towns. Paris is a little shabbier and a little more colorful than before. There are thousands of soldiers of every conceivable Army—with the U. S. and British predominating. The French wear lend-lease uniforms, which are distinguished from ours by their brightly colored berets. The doughboys wear practically anything at all. The paratroopers are about the most flamboyant—and the most rowdy. It is hard not to get a soft spot in one's heart for the drunk and disorderly American soldier. He is charmingly impossible. The Metro is crowded to a bursting point, and there is no surface transportation at all. That is, except for old diacres and phantastic "taxi-cab" contraptions that look like baby carriages drawn by a bicycle. Drink is either cognac or vin blanc or rouge. The beer is almost unretainable. There are two types of Calvados: the white and the brown. The white kind kills you; the brown gives you an even chance.

Oscar Wilde said that when a good American dies he goes to Paris. But even the breath of spring here this year has a touch of halitosis. Paris is no longer all heaven. There is a lack of direction somewhere, and the angels' wings have begun to droop—and some are attempting reincarnation of sorts. Josephine Baker is here, and Lucienne Boyer, and Mistinguett, who must be 70 if she is a day. And Gertrude Stein had a birthday a couple of days ago (I am not sure whether it was on her birthday). Then there are the sinners—semi-collaborationists—like Guitry, Chavalier, Charles Trenet, who are trying to come back into favor. The political heat of the liberation is cooling off—the last tragic example of it, probably, was

(Continued on page 48)
The impact of technological improvements during the war will be felt in the design and construction of postwar libraries. To guard against costly, often irreparable mistakes, all revolutionary innovations should be viewed against the secure background of long experience. Snead & Company offers you such a background.

Many of today's outstanding developments in library design, such as the steel stack which supports the library walls, floors, and roof, the open-bar and hinged bracket shelves, book conveyors, and the convertible stackroom were pioneered by Snead engineers.

By consulting Snead library engineers during the early planning stage substantial savings of time and money may result. We will gladly assist in preparing plans and specifications, and submit a mutually protective bid, so that your project can be started as soon as materials become available. Now, while our manufacturing facilities are still engaged in war production, our engineers can give your problems careful study.

Whether you plan a new building or modernization of an existing structure, write for our illustrated catalog containing valuable planning data for every type of library, large and small. No obligation.

The new Library of Congress Annex, Washington, D.C., costing $10,000,000, is equipped with Snead bookstacks. Snead & Company also built the bookstacks for the original Library of Congress in 1889. Snead floor and column construction permits easy conversion of any portion of the stack for other library purposes. These columns are also utilized as air ducts for the air conditioning system.

Since 1849, the Snead symbol of lasting beauty, quality and progress in metal construction.

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EASY ANSWER:

LOOK AHEAD with Carrier!

America's oldest air conditioning organization has a new wealth of wartime experience to help you with present or peacetime needs. Come to Carrier for the most advanced developments in modern air conditioning, refrigerating and unit heating. Backed by 43 years of achievement, covering practically every type of application. Carrier engineers and technical staff are entirely at your service. No obligation — write fully today.

Carrier Corporation, Syracuse, N. Y.
25,000 a day!

Tremendous increases are foreseen in travel by air in the postwar era. Airports that can handle 25,000 passengers a day may be needed. Aluminum and magnesium will play a vital part in postwar aircraft and other products. Bohn engineers will be at your service in designing your products for use of these modern light alloys.

BOHN ALUMINUM AND BRASS CORPORATION
GENERAL OFFICES—LAFAYETTE BUILDING • DETROIT 26, MICHIGAN
Designers and Fabricators
ALUMINUM • MAGNESIUM • BRASS • AIRCRAFT-TYPE BEARINGS
ASPHALT

EGNATED FA

SHEET COPPER

WASCO is a copper-fabric flashing insulated against electrolysis. The use of WASCO is your added insurance that the flashing in your building will not fail due to electrolytic action with adjacent steelwork. WASCO costs less but serves better. It is easily hand-shaped on the job to any contour. Its rough-textured, fabric surface forms an adhesive bond with mortar, thus preventing hair-line cracks. Thus WASCO is perfect for thru-wall and spandrel flashing. Specified by Architects for over 3,000 important buildings. May we send our A.I.A. folder?

WASCO Flashing Company

COPPER-FABRIC FLASHING

LETTERS

(Continued from page 44)

the death of the old sculptor Maillol, announced as natural in the U. S. press, but rumored here to have been brought about by the FFI. All the names are coming back, but their momentum seems spent.

All, that is, except Picasso's. I have seen recent paintings of his which are indescribable. He is no longer a painter: he has become a violent natural force, an earth tremor, a dynamo of pent-up power. No one who has seen these paintings can deny it. He is utterly magnificent, and, by virtue of his unassailable political stand during the occupation, he is for the first time close to being popularly "accepted."

Of Le Corbusier there is little news. He still seems to be in Switzerland. However, even his political enemies admit that he was no collaborationist. This rumor was probably founded in his well-known Soviet-phobia. It is believed that he will be working in the deGaulleist set-up on the reconstruction of French cities.

The Pavillion Suisse was used during the occupation as a Nazis officers billet, where they had some wild parties. Since it is a concrete structure, the Nazis concluded that its roof was a good place to mount two 20mm Bofors guns. Their recoil shook up the place a little, and it needs some superficial repairs—otherwise it is as beautiful as ever. U. S. officers who inhabit it now as probably better housed than any other men in the Paris area. At least it was about the only warm building in Paris this winter, since the glass front literally absorbs the sun.

What else is there to tell? Oh yes: Paris is flooded with American movies, whose titles are not always literally translated. Off hand, "The Lady is Willing" would not necessarily mean "Madame Veut Un Bebe."

THE STEWART IRON WORKS CO., Inc.
1265 Stewart Block, Cincinnati 1, Ohio

Write for
BOOK OF DESIGNS "D"

This is a 48-page and cover book of outstanding Stewart Iron Fence and Ornamental Iron Work installations. It illustrates the possibilities of plain and ornamental iron fence, gates and gateway arches for the beautification and protection of all types of property. A copy will be sent on request. Since 1886 Stewart has worked with architects in the adaptation of standard fence designs to certain types of property, and in the faithful reproduction in iron, of drawings and specifications to meet specific requirements. Right now the manufacture of iron fence is restricted, but when civilian production is resumed, it will again be available. You may also want these Stewart catalogues: No. 81 covers Standard Iron Fence with Channel Rails. No. 80, Standard Iron Fence with Angle Rails. No. 79, Standard Chain Link Wire Fences and Gates. No. R-38, Railings, Lanterns, Interior Gates, etc. No. W-40, Window Guards, Wire Mesh Partitions, Folding Gates, etc. No. I-42, Industrial Fence Specification Manual. When writing please mention by name or number the catalogues desired.

Peter Blake, 2d Lt. A.U.S.
c/o Postmaster, New York, N. Y.
It doesn’t have to be eighty feet wide. With the brilliant beauty of a modern Brasco Front even the small shop can be the outstanding store on the street. For Brasco brings the magic touch of distinction to any store, regardless of size.

The new conception of store front design calls for inviting contours and a clear view of what’s going on inside. Architects find the complete line of Brasco unified members easily adaptable and always in harmony with modern decorative treatment.

Structural strength is built into all units to safely withstand every strain of weather and traffic... our exclusive patented features assure glass safety. Sound engineering, smart styling and thirty years experience make Brasco today’s leading store front construction.

*A COMPLETE LINE FOR EVERY DESIGN*

**BRASCO MANUFACTURING COMPANY**

**HARVEY** [Suburb of Chicago] **ILLINOIS**

National Distribution Assures Effective Installation
For Decorating Purposes... Koylon Is Tomorrow

For lowering costs of seating furniture, Edward J Wormley, New York homefurnishings designer, suggests the use of standardized seat and back elements of Koylon Foam which can be used in a variety of frames.

"U.S." Koylon Foam was introduced ten years ago—and a new era in comfort began. Here is a cushioning material made of buoyant latex with millions of inter-connecting air cells. It fairly breathes comfort—which keeps it constantly clean and free of dust, dampness, odors. More than this, Koylon is amazingly durable—a single, well-fashioned material without parts requiring constant repair, replacement or renovation. Because Koylon keeps its shape, it keeps maintenance costs down.

Never before had decorators such an ideal material for upholstery and mattresses. Comfort Engineered Koylon offers the ultimate in adaptability and versatility. And Koylon is as easy to work with as it is easy to rest on. Today’s output goes completely into war and hospital duties. But Comfort Engineered "U.S." Koylon Foam is coming back—moulded and in yardage—to help solve your decorating problems of tomorrow.

United States Rubber Company
Serving Through Science
Dear Reader:

Our post-V-E Day impressions are here recorded for posterity. We reached the office in time to see the first paper blizzard swirl outside our fifth floor windows. A midget radio in the drafting room kept repeating "... this is not official." But everyone smiled knowingly. There was no complete elation. At 11:30 both FORTUNE's and THE FORUM's staffs gathered for a drink in the conference room on the forty-ninth floor. No one seemed able to figure out just what to say or how to act. In a few minutes, one by one, they drifted back to their offices or out to drift for themselves. That was Monday.

When the anti-climatic official announcements came on Tuesday, Altman's across the street broke out a 125 ft. flag but Macy's to the west almost completely covered its Broadway facade with the biggest flag of all. One of our experts took one look and rapidly calculated that to fly it handsomely would take a pole 320 ft. tall, and if you are still interested, the mooring mast on our own Empire State Building could handle the flag with plenty to spare. A block above us on 5th Ave., carpenters put up a barricade covering Best's show windows. This unheroic action went completely unrewarded. There never were any milling crowds to go berserk.

We thought a good deal about the fourteen FORUM service people and wondered where they were at that moment. As closely as we could figure, five were in the U. S., four in England, France or Germany and five in widely scattered parts of the Pacific. A better celebration will wait until they all come home.

Limited to borscht and vodka, we found some difficulty in carrying on an animated conversation with our leading global visitor last month—Tovarisch Gregoriev of the Russian Purchasing Mission. However, there was plenty of bowing and grinning, and he left us with the equivalent of a 25-gun handshake. Bob Frantz of Saginaw stopped by, looking the way all architects should, closely followed by Roger Allen, looking the way all humorists should. Came Corwin Wilson, presumably having parked his two-story trailer downstairs. We are holding over others until next month to say a word about G.I. Jobs (see below).

The service camp newspapers have picked up this idea, and fine pieces have appeared in the Lee Traveller of Petersburg, Virginia, High Score of the Army Air Field, Avon Park, Florida, and Army & Navy Review of the New York Veterans Association. Requests for personnel to fill jobs are flooding in and as the news of this service reaches more soon-to-be discharged veterans, we should be able to start fitting together some of these men and jobs. You can help by telling your own friends in the service who hope to work in the building field.

H. M.
Air Locks in Industry

On this air lock vestibule, the Stanley Door Control is actuated manually through pull cord switches. Safety rays control operation cycle of doors so that traffic must clear a door before it can close; also limit operation to one opening at a time.

The use of air locks is a solution to the elimination of drafts, fumes or dust that interfere with manufacturing processes or impair the health of employees.

A pull on the cord and the doors swing wide open - are automatically closed after traffic clears safety ray.

In busy industrial plants or commercial buildings, Magic Door action speeds up traffic, saves worker time, reduces accidents and door repair bills. They repay their original cost many times over!

Innumerable door problems have been successfully met by the adaptability of Stanley Door Controls. Keep this fact in mind when starting plans for construction or modernization. Stanley will cooperate with you in preparing plans and specifications.

Fill out and mail the coupon now.

STANLEY MAGIC DOORS
 REQUIRE NO HAND TO OPEN
Ideal indoor climate, year round

Servel All-Year Gas Air Conditioning has proved its efficiency in more than 400 installations during the past four years.

During the past four years, more than 400 homeowners and businessmen throughout the United States have enjoyed a new experience in living and working comfort. In their homes and commercial establishments, located in every part of the country, they've reveled in an ideal indoor climate... maintained at just the proper temperature and humidity for maximum living and working comfort... the whole year round!

Even during the hottest, most humid summer weather, these buildings have been kept refreshingly cool and comfortable by the draft-free circulation of cleaned, cooled air, from which sticky, enervating humidity has been removed. And in winter, they've been kept warm and comfortable—and clean—by the circulation of filtered warm air to which just the right amount of humidity has been added.

The new equipment that provided this...
deal indoor climate the year round was perfected by Servel, maker of the Silent Servel Gas Refrigerator, just before the war began, after more than ten years of preliminary research and engineering. It represents an entirely new concept in all-year air conditioning. One simple, central unit—completely self-contained—does the whole year-round job. It cleans, cools and dehumidifies the air in summer, cleans, warms and humidifies it in winter, cleans and circulates it at prevailing temperatures between seasons. One simple central control—the Selectrol—regulates all six functions at the touch of a finger.

The Servel All-Year Gas Air Conditioner, already tested, proved, and approved by every one who has tried it, will be available for your post-war homes just as soon as materials and facilities are released from war work. Because it offers just the type of all-year air conditioning that prospective post-war homeowners and builders are saying they will want, it will pay you to find out more about it now.

You can get complete technical data from your local Gas Company. Or we'll be glad to furnish it direct, together with any information you might like to have about the more than four hundred installations already in successful operation. Just write Servel, Inc., 2506 Morton Street, Evansville 20, Ind.

Air Conditioner

SUMMER COOLING • WINTER HEATING
IN ONE SIMPLE UNIT
MADE BY THE MAKER OF
THE SERVEL GAS REFRIGERATOR

JUNE 1945

COMFORTABLY WARM IN WINTER!

... for your post-war homes
The founders of the newly-formed Precision-Built Homes Corporation comprise the largest single group in the country, devoted exclusively to the promotion of housing construction. The new corporation will continue the research and study—undertaken 9 years ago by Homasote Company. The aim of this research is to produce a home having the utmost in permanence and sound dollar value. $8,000,000 of private homes and $36,000,000 of Government housing have proved the soundness of this construction system—whereby it is possible to apply mass production methods to conventional construction without in any way sacrificing flexibility of design.

As soon as war-time restrictions permit, this method will enable you to give your client a home of any size, any type, anywhere—with greater dollar value than ever before.

Precision-Built Homes, the interior walls and ceilings lined with Homasote—the oldest and strongest interior building board on the market.
After you specify or install a Taco Water Heater or a "Taco-One" Venturi Heating System, you don't have to cross your fingers for luck! You can count definitely on satisfaction for the home owner—legitimate profit for the contractor. You can depend on Taco engineering, knowledge, experience and responsibility.

It takes more than crossed fingers
Many a man may build or buy a new home only to find himself “behind the 8 ball” when he tries to sell or rent—all because of a skimpy chimney! You see, a small chimney is good for burning only the most expensive fuels. Once you’ve got it, you’re “stuck.” You can’t easily switch to coal. But someday you may want the big economy advantage and the dependable, even, healthful heat of Bituminous Coal. For remember, today’s expensive fuels may be still more costly in the years ahead!

The extra cost of an adequate chimney—one that can efficiently handle any fuel—is small. Only about $16 for the average 7-room house! And should you decide on Bituminous Coal, you’ll find it can save you enough to pay a good part of your taxes or mortgage interest. Yet economy is only one reason why 4 out of 7 homes in the U. S. heat with coal!

But no matter what kind of heat you plan for the present, be sure you get an adequate chimney—so you’ll be free to switch to any other fuel you may choose in the future. It will pay you to talk this over with your architect or builder!
Now, there's not a single upholstered piece that you won't be able to glorify with a touch of magic color.

Now, for the first time, you can dare to use any color anywhere—from the palest of pastel tints to the deepest of deep, rich, jewel-like tones—in an infinite variety of textures, weaves and patterns!

It can be done with Firestone's amazing new fabric, Velon—unlike any other material ever created.

Because, in even the lightest shades, the mere touch of a damp cloth or cleaning fluid restores Velon to all its original colorful glory. Dirt and grease can't cling to it. Drinks can't stain it. It's waterproof, non-inflammable. And it will never fade.

Moreover, Velon is so durable that after years of rugged abuse in trains, cars and planes, it has yet to show the slightest sign of wear.

No wonder Velon is called the most practical upholstery fabric ever made. Right now, most of the Velon made goes to the armed forces. But you can't afford to overlook its endless possibilities for your postwar plans.

P.S. For completely modern seating use Foamex cushioning, Firestone's rubber latex foam.
For full convenience Electrical Living, where should control centers for a house be located? What size feeders should you install? What is the minimum number and size of circuit breakers to use?

Complete data is contained in the new Home Wiring Handbook to enable you to design the most modern and efficient electrical installation for homes in the popular-price group. Examples are given to make easy the entire computation of distribution systems.

Throughout this 120-page book you will find valuable data assembled to save time and assure a well-engineered installation. Costs one dollar. Send with coupon below.

**ORDER YOUR COPY NOW**

Westinghouse Electric Corporation
Extension Training—Industrial Relations Department
306 Fourth Avenue, Pittsburgh 30, Pa.

Gentlemen:
I enclose $1.00 for a copy of your "Home Wiring Handbook".

Name: ..................................................
Street: ..................................................
City: .............................. State: ............

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**THE ARCHITECTURAL FORUM**
"We've got the answer when the heat's turned on!"

You know ... we know ... that the heat of post-war competition is going to be something! Now is none too soon to set your sights on solid selling points for the homes you are going to build. We predict that the man who plans homes equipped with Spencer Heaters is going to have a happy time of it.

Broad statement? Not when you consider that into the building of the new Spencer Heater line will go over a half-century of heater experience combined with the ingenuity and engineering knowledge of The Aviation Corporation ... skills developed and proved during the war years. New economy and utility ... combined with Spencer dependability, will bring you a heater that you'll want to include in the specifications for the post-war homes you're planning. We'll be pleased to furnish you with more information.

SPENCER HEATER

Division—The Aviation Corporation, Williamsport, Pa.
Three-dimensional training aids developed by the Navy are found to cut learning time in half.

Just when visual aids were adopted as training devices is not certain, but the Navy did not take long to discover that a scale model of a ship made of transparent plastic and three-dimensional mock-ups of engine parts took the place of pages of printed or spoken words. Physical educational aids cut learning time in half, besides eliminating a tremendous amount of needless confusion. The models pictured here, the work of the Training Aids Division, are operable, color-coded and may be completely demounted in order to demonstrate the functions of individual parts. The success of such instruction methods is without question and their further development for postwar civilian education should flourish. Progressive educators, realizing the clarity afforded to subjects by motion pictures and laboratory work, will want architects and engineers to take this fact into consideration in designing the school of tomorrow, or even participate in the design of the models as was the case here. (Continued on page 64)
THOUSANDS of American families are planning now to build or buy a new home as soon as the removal of war restrictions makes construction possible. They are looking for quality in their home—they recognize that one of the things that can mean much to their future comfort is the heating system.

You will find that a complete Crane heating system will mean much to your prospects. They recognize the name of Crane as standing for tops in quality; and on the heating systems you install, it will add sales value to your homes.

To the builders of tomorrow’s homes, Crane Co. will offer a complete line of boilers for steam and hot water; furnaces for warm air; radiators, controls, valves, fittings, oil burners and stokers—everything necessary for every type of heating system.

Right now there are necessary limitations on heating equipment; however, by the time it is possible for you to start construction, your Crane heating dealer will be able to offer the latest and most advanced types of heating from the complete Crane postwar line.
POSTWAR DESIGN OF THE MONTH

Lilliputian travelers on postwar railways will have a club car of their own complete with an expert stewardess. The amusements provided in the “fun house on wheels” designed by the Pullman-Standard Manufacturing Co., will cater to almost any childish whim. A slide reached through a cave with concealed stairs, a miniature piano, marionette show, writing desk, etc. are offered. A kneeling sofa is placed longitudinally along the side of the car so that the child can assume his favorite position for looking out of the windows. Plans for appeasing the child once the trip is over are not disclosed.

(Continued on page 68)

THE NEW FREEDOM GAS KITCHEN

featuring a fine ROVER GAS RANGE

The modern ROVER GAS RANGE is designed to fit tomorrow’s kitchen — designed, as well, to fit the housewife’s ideas of what a cooking appliance should be. It’s a range you can specify with the full assurance that it will provide the ideal answer to every cooking problem. Write today for Roper’s free kitchen booklet.


Specify Chamberlin Metal Weather Strips

GREATER FUEL ECONOMY • MAXIMUM COMFORT

Federal Reserve Bank, Cleveland, Ohio, is another in the long list of important public buildings that is Chamberlin equipped. Eliminate uncomfortable spots near window areas . . . provide maximum fuel economy with Chamberlin Metal Weather Strips. Factory controlled installation insures best results. For complete details call nearest Chamberlin office.

Architect—Walker & Weeks
Builders—John Gill & Sons

Formerly Chamberlin Metal Weather Strip Co.

CHAMBERLIN COMPANY OF AMERICA

Home Office: 1232 LaBrosse St., Detroit 26, Mich.
The Trend
Toward Permanence

EMPHASIZES THE ECONOMY OF
LONG-LIFE MATERIALS

More and more, civic and industrial planning inclines toward the long range viewpoint. Permanent construction—using quality materials—gains in favor over the practice of building for immediate needs only. This type of planning emphasizes the economy of using long-life Anaconda Copper Tubes and Red Brass Pipe to resist corrosive conditions in air conditioning, heating, plumbing and industrial piping installations.

Experience over the past few decades stresses the dependability and durability of copper and brass in these applications. The extension of chemical treatment of domestic waters further increases the need for these non-rust materials.

Anaconda Copper Tubes and Red Brass Pipe are furnished in a standard range of sizes and wall thicknesses and allow the architect or engineer a choice of threaded fittings, solder-type connections or welded assemblies.

Illustration shows expansion joint for heating lines laid in 8,800 feet of concrete conduit at the University of Connecticut, Storrs, Conn. Condensate return lines, subject to the corrosive action of the boiler water, are of Anaconda Red Brass Pipe welded with Tobin Bronze®. Sixty thousand pounds of Red Brass Pipe, from 1½" to 6" S.P.S., were furnished by Crane Co., New Haven, who made the bends for the expansion loops.

Consulting architects and engineers to the State of Connecticut, Westcott and Mapes, Inc., New Haven. Contractor, C. N. Flagg & Co., Inc., Meriden. All welded joints were supervised and approved by Hartford Steam Boiler Inspection and Insurance Company.
No question! There's a lot of sales appeal in the very appearance of a brand-new home! But any prospective owner may be sold on its looks ... and still have two big questions before he buys.

How is it built? Is it scientifically designed, soundly constructed, and made of good materials?

How will it live? Is it completely equipped with the best in home appliances? Does it have all these aids to better living?

- Adequate wiring with plenty of convenient outlets for proper lighting.
- Automatic heating with air conditioning, and automatic hot water.
- An all-electric kitchen with refrigerator, range, dishwasher, garbage Disposall, exhaust fan, and clock. And roomy steel kitchen cabinets.
- An all-electric laundry with washer, dryer, and ironer.

Such a house will combine better living with better appearance to bring you faster sales!

And this home can still be competitively priced.

When complete electrical equipment is included in a single long-term mortgage, the difference in initial cost is relatively minor.

This cost actually may be less than for an unequipped house, where initial cost must include down payment plus the price of separate equipment.

And savings in operation and maintenance with dependable G-E Appliances can more than offset the surprisingly small increase in monthly payments.

For the story of these savings, send for your free copies of General Electric's booklets, "Your New Home and Your Pocketbook" and "Castles in Foxholes." Write direct to—Home Bureau, General Electric Co., Appliance and Merchandise Department, Bridgeport, Conn.

FOR VICTORY—General Electric is working night and day to back the attack. You can help, too, by buying and holding more War Bonds than before.

Alzak* aluminum specular reflectors are used to obtain maximum efficiency and control, in the new Tandemlamp patented by The Doane Products Corporation, Meriden, Conn., represented by Ivan T. Johnson Company, Inc., New York.

This interesting fluorescent lighting fixture uses an axial plane mounting which places one lamp in front of the other instead of a horizontal arrangement. This mounting, the manufacturers say, permits the light from each lamp to be reflected symmetrically from a smaller reflector as illustrated in the drawings.

Alzak* aluminum reflectors were selected to assure permanence and high reflectivity. An oxide coating provides surface protection and the high reflection is the result of a special electrolytic treatment** of suitable aluminum sheet prior to applying the anodic finish. ALUMINUM COMPANY OF AMERICA, 1944 Gulf Building, Pittsburgh 19, Pennsylvania.

*Registered trade mark
**Patented Process. A. C. of A.
Describing...

BROWNSKIN — for Sheathing
Its S-T-R-E-T-C-H sets it apart from ordinary sheathing papers, as does its special treatment against deterioration, passage of water or moisture. As long as a building lasts, so will BROWNSKIN.

BROWNSKIN VAPORSEAL — for Vaporsealing
Protects all kinds of insulation. Use on the warm side of insulation, leaving cold side tree to breathe. Thus ideal dry conditions will be maintained.

ECONOMY BROWNSKIN — Protects Flooring
One side is crinkled BROWNSKIN, the other flat kraft. Between flooring, the BROWNSKIN side goes down. Also unexcelled as a protector of finished floor surfaces in rooms where men are working. Here the BROWNSKIN side goes up.

ECONOMY BROWNSKIN REINFORCED
An extra-strong, all-purpose waterproof paper for temporary partitions, coverings, and the protection of all types of floors during construction.

COPPERSKIN — Protects Hidden Places
Electro sheet copper, bonded to BROWNSKIN by asphalt. Use in concealed places to protect insulation, for drip pans, and to flash windows, doors and all exterior openings.

In writing for samples and literature please mention by name this magazine.

FORUM OF EVENTS
(Continued from page 64)

EXHIBITIONS
The work of Georges Rouault, from 1893 to 1939, is on exhibit at the Museum of Modern Art. The exhibit, which closes June 3, includes some 161 items: oils, pastels, gouaches, watercolors, etchings, lithographs, ballet designs, books and Collection Samuel A. Marx, Courtesy Museum of Modern Art

Three judges, 1907

Sweden creates despite isolation
Swedish arts and crafts were featured in a photographic show at the Architectural League of New York last month. Of particular interest was the low-priced factory-made furniture including modern demountable cabinets and chairs manufactured by Nordiska Kompaniet. The architecture featured was the simple, white, unpretentious modern type commonly associated with Scandinavian countries. The buildings shown consisted primarily of housing, schools and restaurants. A good bit of Tyra Lundgren's fancy sculpture and ceramic

(Continued on page 72)
Yes! Beefsteak with onions can be a complete surprise!

Apartment cookery is often a smelly operation. Long before serving, everybody in the apartment—or in adjacent hallways—knows the bill of fare. But not so with Parsons Pureaire Kitchen!

For Pureaire cooks BEHIND CLOSED STEEL DOORS. Its patented ventilation feature pulls all odors, vapors and surplus heat into a flue and the outer air. Even beefsteak with onions can be a complete surprise.

Tenants also like the amazing completeness of Pureaire. With all its compactness—it uses less than 3 sq. ft. of floorspace—Pureaire does everything a conventional kitchen will do.

Yet Pureaire cost—thanks to standardized volume and expert production engineering—is little if any more than that of an old-style kitchen of scattered units.

Save room, increase revenue, HOLD TENANTS by planning Pureaire Kitchens into every apartment of 3 rooms or less.

ARCHITECTS:—Your Sweet’s Catalog carries full Pureaire specifications. Or write us.

THE PARSONS COMPANY
15000 OAKLAND • DETROIT 3, MICHIGAN
COLD CATHODE

FEDERAL COLD FLUORESCENT

FEDERAL ELECTRIC

8700 S. STATE STREET, CHICAGO 19, ILL.
TELEPHONE VINCENNES 3300

625 N. MICHIGAN AVE., CHICAGO 1, ILL.
TELEPHONE STATE 0488

Branch Offices: Cincinnati • Dallas • Duluth • Houston • Indianapolis • Kansas City • Louisville
There was nothing dramatic or spectacular about that meeting of the NDMA Advisory Committee in 1937. But the standards which the committee set up were designed to benefit generations of architects, builders and homeowners. For these standards established, for the first time, minimum specifications for the toxic preservative treating of building woodwork...treatments which supplement the natural lasting qualities of wood products such as windows, doors, frames, screens and storm sash.

Ever since this country was founded, wood—warm, lasting, durable wood—has been a chosen building material. Today, the toxic preservative standards set up by the NDMA—based on the recommendations of leading technological authorities—provide public assurance that wood will continue to demonstrate its long life, its enduring value, in the homes of America.

The NDMA Seal of Approval—available by license to all manufacturers and distributors who conform to the toxic preservative standards of the NDMA—represents these six steps of protection:

1. An efficient test for measuring effectiveness of toxic preservatives
2. Minimum standards governing the toxic preservative treating of woodwork products
3. A seal identifying products treated in conformity with NDMA Toxic Preservative Standards
4. Mill inspection of treating equipment and practices
5. Laboratory check-tests of preservative solutions
6. Educational effort in the public interest

DIED
Dr. Edith Elmer Wood, author and housing authority, in Morristown, N. J., at the age of 73. A graduate of Smith College, Dr. Wood obtained her master's and doctor's degrees from Columbia University and was also graduated from the New York School of Social Work. An expert in the field of slum clearance and low-cost housing for over 30 years, she was at the time of her death a consultant to the U. S. Housing Authority and a director of the National Public Housing Conference. Dr. Wood published four books and numerous pamphlets and magazine articles all making an informed and insistent plea for slum clearance and livable homes. Her exhaustive report on slum conditions in leading American cities, prepared for the Housing Division of the Public Works Administration in 1935, revealed that a third of the country's population was ill-housed, and was quoted in Congressional hearings on the setting up of the permanent housing division in the Department of the Interior. Her last task for the government was a nationwide survey of war-time housing conditions made in 1942.

The barrel vault of a standard steel warehouse developed by the Navy has lent itself admirably to the nave of this little chapel at the Naval Advance Base Depot, Davisville, R. I., designed by Lt. Glenn E. Miller. Seating for approximately 350 persons is provided.
FLUORESCENT...

a definite answer to Better lighting!

Any modern system of fluorescent illumination means infinitely better lighting. But of the two recognized systems, Cold Cathode fluorescent is best. ZEON Cold Cathode is preferred because it means far longer lamp life, lower maintenance cost, instant starting, constant light flow, fewer auxiliaries and greater flexibility in shapes, sizes, colors, and output.

Federal Electric Company, Inc. has pioneered in the development and use of gaseous discharge lamps. In creating and perfecting ZEON Cold Cathode fluorescent lighting, Federal Electric found new and highly practical methods for its adaption to industrial, commercial, and decorative display illumination.

In planning for post-war installations, specify FEDERAL ZEON. You, your architect, or contractor are invited to submit your lighting problems in a detailed letter. Our engineers will be glad to give it thorough and immediate attention. Address Lighting Information Service, Federal Electric Company, Inc., 8700 South State Street, Chicago 19, Illinois.

Remember there are 2 kinds of fluorescent lighting!

"Hot Cathode" is the common heater filament type of fluorescent lamp; "Cold Cathode" is the improved shell-electrode type, of which Zeon is the outstanding example. Long life, lower maintenance cost, greater flexibility are some advantages of Zeon Cold Cathode fluorescent lighting.
PUBLIC MOST RECEPTIVE TO FLUORESCENT LIGHTING

Survey Shows Postwar Trend To "Fluorescents-For-Every-Room"

When homes are again being built, fluorescent lamps will take a great part in lighting them up.

This statement is backed by the replies to one of the many questions asked the public through a nationwide, impartial survey conducted—at the request of Sylvania’s Sales Research Department—by one of America’s leading market research organizations:

“In what rooms do you think fluorescent lighting is suitable?”

The answer is, in effect, “Every room”—with the following preferences: Kitchen, 73.1% - Bathroom, 70.4% - Dining room, 52.1% - Hallways, 52.6% - Bedroom, 44.8% - Living room, 44.7%.

Obviously, architects will be interested in noting this public receptiveness to fluorescent lighting—as a help in keeping one step ahead when it comes to postwar home planning. The prevailing feeling is that fluorescent lighting is desirable and may be used effectively in almost any room of the house.

Entrance illumination and built-in step lighting made easy with 21-inch Sylvania lamp.

bathroom medicine chest mirrors, basement playroom sections, and many more well known to architects—this convenient length lamp is designed to fill the bill.

Not only is this latest addition to Sylvania’s miniature fluorescent line adaptable because of length but also because it measures only five-eighths of an inch in diameter. And yet it uses a standard miniature bi-pin base and an FS-4 starter.
Millions want new homes like this

New Cape Cod Home, designed by Royal Barry Wills, A.I.A., noted Boston architect.

And friendly Timken Dealers will help bring this business to you

The architect-designed homes shown here are being featured in Timken advertising to encourage people to build better homes and to equip them with products which will insure greater owner satisfaction.

These efforts, promoting interest in good architectural design, are definitely helpful to you.

Even more helpful is the friendly service and co-operation every Timken Dealer offers you in selecting the type and size of heating equipment, in figuring and furnishing heating plans, in installing quality-built Timken Silent Automatic equipment with factory-trained mechanics, and in seeing that your client receives the proper service after the sale.

This, we know, is the kind of cooperation you want, and the kind Timken Dealers are factory-trained to perform.

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Quality Home Appliances for Comfort, Convenience and Economy

20 Years of Faithful Service to American Homes

Division of THE TIMKEN-DETROIT AXLE CO., Detroit 32, Michigan
HUNDREDS OF PASSENGERS DAILY pass to and fro through this busy United Airlines Ticket Office, in Los Angeles. But the floors of Nairn Linoleum look just as fresh and new as on the day they were laid.

United Airlines chooses America's most modern floor... Appearance, resilience, durability, ease-of-maintenance—those are the qualities which make Nairn Linoleum such a first choice for floors.

Colorful, readily "styled" or designed for any desired effect, Nairn Linoleum offers unique opportunities to the airport designer and architect. And its well-proved wearing qualities insure long, trouble free, and economical service, even in areas of heaviest traffic.

A handbook on linoleum specifications has been prepared for your use. May we send you a copy?

CONGOLEUM-NAIRN INC., KEARNY, N. J.
That "dream house" of tomorrow is to be modern in fundamentals too, of course. For house-to-sewer connections and other non-pressure uses outside, ORANGEBURG PIPE will be specified... for ORANGEBURG is the root-proof, non-metallic pipe equal to a lifetime of trouble-free service. Its long, lightweight lengths are easily handled, easily installed. The TAPERWELD joints are quickly assembled, stay permanently tight without cement or joining compound, keep out root growth.

ORANGEBURG is strong, non-rigid — doesn't crack with temperature or soil changes — doesn't chip or break easily — is readily sawed — can be joined to other pipe. The PERFORATED type, joined with snap couplings, is widely used for septic tank filter beds, foundation footing drains and subsoil drainage.

Millions of feet of ORANGEBURG, in service all over the country, have proven the long life, dependability and economy of this modern pipe. Let us send you complete information. Write today. Dept. AF-6, THE FIBRE CONDUIT COMPANY, ORANGEBURG, N. Y.

ORANGEBURG
The Root-Proof Pipe

FORUM OF EVENTS

(Continued from page 72)

Official Navy photos

Interior looking toward chancel

Choir loft overlooks nave

The plan of this Navy chapel provides a confessional, coat room and wash-room at the entrance with a choir loft above. Offices for the priest, minister and rabbi flank the chancel with heating facilities behind. Side windows which line the walls are conveniently hinged at the top. A nicely handled wood wainscoting enriches the simple nave. The customary trend of directing all sources of light toward the chancel is absent here, but perhaps is out of order in this friendly little design. Indirect light troughs, extending the length of the window heads, replace the elaborate fixtures prevalent in civilian churches. The simple vertical window above the entrance supplies light for the choir loft and gives this non- sectarian chapel an ecclesiastical touch.

COMPETITIONS

A $20,000 award program for textbooks covering machine and structural design for modern processes including welding is being sponsored by the James F. Lincoln Arc Welding Foundation. The authors of the first award manuscripts will be entitled to the royalties from their texts. The rules and conditions governing the competition can be secured from the secretary of the James F. Lincoln Arc Welding Foundation, Cleveland 1, Ohio. Any person in the teaching profession, in industry, or engaged in private consultation is eligible. Entries should be mailed not later than midnight, May 15, 1946. The American Institute of Decorators have announced the 1945 Rorimer competition open to students in schools and colleges in the U. S. in which courses in interior design and...
The Visual Front makes capital of the fact that brightness, color and motion attract attention. It turns interest of passers-by to the services or merchandise you have to sell.

This recreation center by Architect Theodore Erbach, of Chicago, illustrates the point. The colorful Vitrolite Structural Glass and the openness of the front catch attention, stop passing traffic. People are drawn toward the clear glass, where the panoramic view of the bowling alleys impels people to come in and join the fun.

The business place looks easy to enter...for there is no visual barrier between sidewalk and interior. The doors are clear Tuf-flex, the L-OF Plate Glass that's tempered for extra strength.

Before you plan your next storefront, consider the many ways the permanent color of structural glass and the smartness and transparency of plate glass can be used to build sales. Send now for our illustrated book of Visual Front designs. It's packed with ideas. Write to Libbey-Owens-Ford Glass Co., 7165 Nicholas Bldg., Toledo 3, Ohio.
The AAF Electro-Matic Air Filter removes particles of dust, smoke and soot from the air that are so fine that they can be seen only through the new electronic microscope. By first giving these particles an electrostatic charge, then attracting them electrically to viscous plates with an opposite polarity, the Electro-Matic makes possible a degree of air cleanliness unapproachable by other means. Continuous operation at peak efficiency is guaranteed because of its automatic self-cleaning feature which is an exclusive AAF development. Write for Bulletin No. 250C. Please send your inquiry to 427 Central Ave., Louisville 8, Ky.
THAT'S what a Federal Roof Deck means to architects and owners alike—dependable, fireproof, non-maintenance protection for the life of the building. There's never "time out" for painting, repairs or replacements—never a dollar to be spent for upkeep.

In addition to the enduring qualities of concrete, Featherweight Precast Roof Slabs afford substantial savings in structural steel because of their extreme lightness in weight. Factory precast to fit perfectly, they are laid on the purlins with ease and speed in any weather thus reducing construction time.

Channel slabs are then ready for the composition covering. Featherweight NAILING Concrete Slabs have an integrated surface to which slate, tile, copper or other ornamental roof can be securely nailed. Either type of roof deck provides economical, all-time protection for industrial, institutional, railroad and government buildings.

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PATENTED ALL-METAL
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INCLUDE RUSCO in all your building plans for new construction and remodeling. Give your clients “more for their money” in modern convenience, comfort, fuel economy. Provide them with these outstanding advantages:

- year-round rainproof, draft-free ventilation
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RUSCO is the first practical Insulating Sash for large buildings—"tailor-made" for commercial construction and every type of home. RUSCO has provided outstanding service to the building industry since 1937.

Investigate RUSCO now. For engineering specifications see Sweets’ 18a-7 or write direct for free booklet and name of nearest distributor.

RUSCO patented adjustable closure or subframe weatherstrips entire outside opening and permits installation on old or new buildings without altering existing window construction.

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decoration are offered. The subject of the competition is “Space for Living” and great freedom is allowed in working out the disposition of the problem. All drawings must be delivered by June 1. Entry blanks may be obtained by writing to the American Institute of Decorators at 41 East 57th St., New York 22, N. Y.

ANNOUNCEMENTS

THE INSTITUTE OF DESIGN, 247 East Ontario St., Chicago, announces a special course in photography, under the direction of L. Moholy-Nagy, for students with a limited time in which to become proficient in photography. Tuition and laboratory fees for the summer term are $145 for the full-time course and $115 for the part-time. The six weeks session runs from July 2 to August 11 and the regular summer semester to August 31.

THE COLLEGE OF ARCHITECTURE AND DESIGN, 207 Architecture Building, Ann Arbor, Mich., announces that a limited number of copies of the papers presented to the Ann Arbor Conference on architectural design and practice are available to those interested. Requests should be sent to the above address.

THE BROOKLYN MUSEUM LIBRARY is making a collection of photographs of interior decoration, furniture and accessory design to aid the buying public. Those interested in contributing should contact the Brooklyn Museum Library, Eastern Parkway, Brooklyn 17, N. Y.

HENRY S. CHURCHILL and KLINE FULMER announce the establishment of the firm of Churchill-Fulmer Associates at 56 West 45th St., New York 19, N. Y. Associates are Homer Hoyt and Raymond A. Bowers. A complete service extending from preliminary economic analysis through planning, architecture, engineering, construction and management is offered.

HOWARD MOISE, architect, AIA, announces the reopening of his offices at 71 Panoramic Way, Berkeley 4, and 260 California St., San Francisco 11, Calif.

B urton Ashford Bugbee, architect, has reopened his office at 121 East 54th St., New York 22, N. Y.

RICHARD HAWLEY CUTTING, architect and engineer has removed his office to Room 405, 4900 Euclid Building, Cleveland, Ohio.

SHIRLEY and FRANCES SUMMON, industrial and interior design, packaging and advertising design, announce the opening of their office at 114 East 54th St., New York 22, N. Y.

UNITED STATES PLYWOOD CORP., announce the removal of their executive offices to the Weldwood Building, 55 West 44th St., New York 18, N. Y.

G. HOLMES PERKINS, architect, has been appointed chairman of the Department of Regional Planning at the Graduate School of Design, Harvard University. Previously he was Acting Director of the Urban Development Division of NHA.
Out of actual on-the-job fire experience comes evidence of the ability of Cardox Fire Extinguishing Systems to stop even big fires fast. File No. S-63, taken from an investigator's report on Cardox extinguishment of a tough transformer fire is a typical example:

"The fire occurred in the outdoor transformer area. It was caused by a short in the 2500-volt bus section and quickly ignited a protective screen above the busses. This protective screen consisted of burlap, rubber sheeting and plywood.

"The Cardox System was actuated automatically and worked perfectly... in less than a quarter of a minute (after mass discharge of Cardox CO₂ began) the fire was extinguished. No serious damage was done and operations were resumed after a very small delay. The swift and efficient operation of the Cardox System prevented at least $150,000 damage."

The danger spots in your plant may not be similar to the one described in FILE S-63. But, if for example they involve flammable liquids or electrical equipment of any kind, Cardox offers maximum protection with fast-acting, non-contaminating carbon dioxide... in pounds for small fires... and tons for large ones!

For all Cardox Systems have one outstanding characteristic which greatly increases the scope of usefulness and performance value of carbon dioxide in protecting large and small hazards!

This characteristic is the distinctive Cardox method of control and engineered application of liquid carbon dioxide, stored at 0°F. and 300 p.s.i. in a single storage unit containing from ½ to 125 tons of fire-destruction Cardox CO₂... enough to handle large fires in single or multiple hazards and leave an ample reserve for new emergencies!

If you have fire problems that are hard to handle, low pressure carbon dioxide can frequently provide the effective answer. A study of your specific fire hazards by Cardox Research Division and Engineering Staff puts you under no obligation. Write for Bulletin 665.

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Cardox CO₂ is supplied instantly in pounds or tons from a single Storage Unit containing 500 pounds to 125 tons at controlled low temperature of 0°F. and 300 p.s.i.
"They say the new model changes the baby, too!"

WE'VE seen some marvelous plans for postwar automatic laundries . . . but in most homes today, the laundry is still the forgotten room.

Pictured at left is a laundry of tomorrow, that not only saves work but is both practicable and good-looking. It makes extensive use of steel—for steel does so many jobs so well. When planning your new homes don't neglect the laundry. Our new booklet, "85 Ways to Make a Better Home," will give you many usable ideas. It will show you how to build better homes at low cost—with steel.
RIGHT ACROSS THE BOARDS

far-sighted architects are depending upon

TODD AUTOMATIC HEAT and POWER for tomorrow!

Everywhere today the blue-prints of America's architects and engineers reflect keen recognition of the decisive part cheaper power and heat will play in fixing tomorrow's price structures.

More clearly than most, these same men can foresee that automatic power and heat through liquid and gaseous combustion is the correct answer to true boiler plant economy.

And they've been quick to learn also that Todd, accepted leader in the combustion equipment field because of thirty years of successful experience, offers three distinct advantages:

1. An economy-proved line of Todd Automatic Oil or Gas Burners to fit all requirements regardless of type of building or power set-up.
2. An invariably efficient burner that provides the maximum in flexible response to rapidly changing power and heat needs, and insures definite fuel savings and lowered maintenance costs.
3. A trouble-free Todd installation tailored to meet your exact specifications.

In planning the construction of post-war factories, commercial and institutional structures—or for modernization of existing types—it always pays to call in a Todd engineer for consultation. He's ready today to help you get your client's boiler plant ready for tomorrow.

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ON THE FIRING LINE OF AMERICA'S WAR PRODUCTION FRONT

JUNE 1945
University Doors

JAMES GAMBLE ROGERS • ARCHITECT

LCN DOOR CLOSER NO. 206 SPECIFIED

Control by LCN overhead concealed method adds fluidity of line and motion to the quiet dignity of the entrance doors at Northwestern University's Scott Hall.

NORTON LASIER COMPANY, CHICAGO
Hoffman Traps save fuel by preventing steam waste!

Heating equipment, like people, can be judged by the company it keeps. Measuring Hoffman Traps and Steam Specialties by this standard gives them the highest possible character rating. Ashore and afloat, Hoffman Traps are found in an impressive number of the most modern heating installations . . . because they are noted for fuel-saving performance . . . and because they cost no more!

Any heating plant is sparing of fuel in direct ratio to the efficiency and condition of its equipment. The tiniest steam leak, when multiplied over a year’s operation, can total up to an incredibly large waste of fuel. Replacement of worn-out equipment, therefore, cannot be considered as an expense, but rather as an investment paying a substantial return.

For your fuel conservation program, depend on Hoffman Traps! They restore a run-down steam-wasteful system to economical operation . . . enabling it to do the required job on less fuel. These traps can be maintained at full efficiency for years by inexpensive replacement of those parts in which long usage is bound to cause wear.

Hoffman engineers are always at your service for consultation on your specific heating problem. Your inquiry will receive prompt attention.
ARCHITECTURAL METALS

...add distinctive beauty to any structure you design!

There's no limit to the ways you can use architectural metals to add to the beauty and utility of any structure you design.

Because of their extreme versatility, architectural metals lend themselves readily to architects' thinking. They enable you to achieve the effects you want, not only from the decorative angle but from the purely utilitarian angle as well.

As you design for tomorrow make full use of architectural metals in the entrance, in stairways, balustrades, doors, windows, grilles, and all types of exterior and interior decorations. Use them, too, for structural and protective building devices, fire escapes, coal chutes, and a hundred other service equipment items.

Architectural metals, both ferrous and non-ferrous, will be readily available for use again as soon as building restrictions are lifted. Write today for a Directory of Leading Architectural Metal Fabricators who are anxious to assist you now in the "get ready" period. Address Dept. F-6.
Already Built... a County Court House
of the Future

Architects Lawrie and Green, of Harrisburg, can point with pride to the Dauphin County Court House in the capital city of Pennsylvania. Completed in 1943, but designed with an eye on the future, the architects state that the modern simplicity of this structure will lead to economy in maintenance.

The three top floors of the 2,100,000-cubic-foot building are air conditioned. A Chrysler Airtemp 50 H.P. Compressor and two conditioning units manufactured by J. J. Nesbit Company are located in the basement. Fifteen similar conditioning units are installed on the sixth floor. These units vary in size and type and are operated by motors ranging from 3 to 10 H.P. "Freon" safe refrigerants are used exclusively.

In designing the system, particular attention was devoted to the elimination of drafts and noises... and to present and future needs for conditioned air throughout the building. Concealed ducts designed to permit the most economical circulation of fresh air in the various chambers are a feature of the installation.

Here is another fine example of a building designed to meet tomorrow's conditions. Whenever you plan a building for postwar, don't overlook the advantages and benefits of air conditioning... now a necessity rather than a luxury. Recommend systems built to utilize "Freon" safe refrigerants... they'll help assure maximum satisfaction. Write for complete information on "Freon" for your own postwar data files. Kinetic Chemicals, Inc., Tenth and Market Sts., Wilmington, Delaware.

"Freon" refrigerants are widely used in heavy-duty air-conditioning and refrigeration systems.

WAR BONDS HELP BRING VICTORY NEARER
... BUY THEM REGULARLY

"Freon" is Kinetic's registered trade mark for its fluorine refrigerants.
How to Make a Wall Pay Rent!

THIS is the Emory Roth apartment building in New York. It was built just before the war. And the architect saved as much as 7% in space—enough for 260 extra rooms. How? By using the Gold Bond 2" Solid Partition System with its special adjustable base which simplifies installation and speeds completion.

All component parts of this system are Gold Bond Metal Products, designed and precision-made for quick accurate assembly on the job. When finished with fireproof gypsum plaster, the resulting wall is extremely durable with a 1-hour fire rating. Besides saving space (2" thick as against the usual 4" to 6" wall), this system is crack-resistant and with a noise reduction factor of 39 decibels, it effectively cuts sound transmission from room to room.

The Gold Bond 2" Solid Partition System will be available again as soon as our metal lath plant is released from its present vital assignment of making metal landing mats for portable airfields. Full detailed drawings and specifications of this system are given in our section in the 1945 Sweet's, together with a description of the complete line of over 150 guaranteed Gold Bond Building Products.

Build Better with Gold Bond

Wallboard • Lath • Plaster • Lime • Metal Products • Wall Paint • Insulation • Sound Control

National Gypsum Company • Executive Offices • Buffalo 2, New York
HOUSE IN LINCOLN, MASS. A luxurious, truly modern home by G. Holmes Perkins.

The International Style, as imported from Europe in the late twenties, introduced an open, simple concept of architecture where the sun streamed in through large expanses of glass, where outdoor landscaping was part of the living area, and where the clutter of traditional design was swept away to be replaced by a severe, frank expression of structure. Paradoxically, this ideal of spacious, sunny living was not applied to the low-cost house, but was introduced here in homes of the well-to-do—from whence its influences are gradually seeping down to lower levels. Despite this inconsistency, there are many lessons to be learned from the design of elaborate residences of this kind, where the architect can afford to experiment with simplicity. In this instance, the most interesting feature of the design, the fenestration, could be applied equally well to houses of any size, and to other building types as well.

Located on a 50-acre estate, the house crowns the highest point in the area and has magnificent views all around the compass for 50 miles. The eastern end of the main ground floor section is made up of servants' quarters, kitchen and pantry; a whole wing is devoted to a library, guest room and circular stair; and the remaining portion consists of a large, open living and dining room. Treatment of the grounds was designed by Landscape Architect Christopher Tunnard.
LIVING ROOM IS OPEN TO RAISED DINING AREA AND OUTDOOR LANDSCAPED TERRACE, FURNISHED INFORMALLY

EXTERIOR IS FRANK, VAQUELY NAUTICAL EXPRESSION OF THE PLAN

OKCASE WALL REPLACES PART OF WINDOW
HOUSE IN LINCOLN, MASS.

The upper level of the house, like the lower level, was planned with an eye toward cold New England winters. Major requisite was that each room should receive sunshine all day long and, in addition, should be equipped with fireplaces. With the exception of one bedroom, therefore, all the rooms on this floor have been provided with their own "radiant" and solar heating. Three of the bedrooms, facing toward the rear and overlooking an expanse of lawn and trees, open onto a balcony which runs the width of the house, giving a look of horizontality to the entire design.

Because of the T-shaped arrangement of rooms, an excellent plan for providing privacy, two stairways have been included to segregate traffic from the lower floors. One leads to the major grouping of rooms at the rear. A smaller one services the master bedroom. In addition there is a stair and dumbwaiter which connects with the roof terrace. This deck is one of the most pleasing aspects of the plan since it is high enough to command distant views of the New Hampshire mountains. Equally important if more plebian is the ample storage space located in bedrooms and near the baths.

WER STORY, SHIELDS WINDOWS FROM DIRECT SUN. SHELTERED TERRACE IN FOREGROUND IS FOR OUTDOOR RELAXATION

SIDE VIEW OF HOUSE SHOWS SMALLER WINDOWS ON NORTH CORNER

G. HOLMES PERKINS, Architect
CHRISTOPHER TUNNARD, Landscape Architect
CHENY-RICE INC., General Contractor
This small, compact house owned and designed by the architect takes the place of the proverbial apartment which young couples for financial reasons are obliged to occupy. Long and narrow, the house is placed only 3 ft. from the north lot line, thus taking advantage of a large side yard which is heavily wooded in some sections. The open ceiling under the pitched roof increases the feeling of space in dining and living quarters and affords space for storage closets which are accessible from the bedrooms. Squares of masonite are used for all the floors and are cemented to a wood sub-floor which in turn is laid on 2 by 4 sleepers over a concrete slab. The sleepers are blocked up 2 in. to allow a continuous duct space under the entire floor. Cold air returns are cut into this space and the furnace fan, which is mounted at the bottom, sucks the air up and discharges it out into the rooms through the hall, which acts as a plenum. The corner fireplace is desirable in this small house as it gives extra sitting space and serves both the living and dining areas. The colors are exciting; dull transparent pink is used on living room walls and chartreuse for the ceiling, while the kitchen has yellow linoleum on counters and vermillion floors.

Floor to ceiling windows, pitched roof and open planning give living-dining area a spacious appearance.

Main rooms face 50 ft. wooded yard and have southern exposure.

Garage port is notched out of structure.
In a small country village inhabited chiefly by Pennsylvania Dutch with leanings toward the Colonial style, this architect successfully urged modern on a doctor who started out wanting his office and living quarters combined behind a Colonial facade. The result is the only modern house within 100 miles.

Another problem the architect faced was difficult terrain, which determined many of the peculiarities of the plan. The one-acre plot was sharply sloping, half of it gouged out for a sand mine, and was rumored to have tunnels underneath. Torrential spring rains used the area as a watercourse, and protection from washout and erosion was essential.

Since the client wanted a definite barrier between his living quarters and office, living rooms were placed on a higher and separate level for privacy and a magnificent view. Office, waiting room and laboratory were placed in a lower wing extending toward the highway, for easy access by patients. Foundations for the basement underneath were shallow scrapings, and foundation walls were waterproofed and arranged to divert seasonal torrents.

Nearby stone and slate quarries were a final deciding factor in the design, for the architect made use of indigenous materials reminiscent of the early settlers. In many ways, the result is more nearly a return to a native tradition than a revolutionary shock to lovers of traditional design.

**CONSTRUCTION OUTLINE:**

LAY OF THE HOUSE FOLLOWS THE LAY OF THE LAND, BUT THE ROOFLINE FALTERS SLIGHTLY IN CHANGING LEVELS

VIEW IS OF MOUNTAINOUS LEHIGH VALLEY

HIGHER BEDROOM WING ADJOIN THE OFFICE.
“HEN COOP” Roof section lights interior and admits maximum southern sunshine. Steps lead to raised terrace.

Bedrooms have built-in drawers and dressing tables.
HOUSE IN STEVENS POINT, WIS. has expansive glass areas and sloping roof.

The plan and appearance of this solar house, designed for a family of four, was principally determined by the cold climate. It is protected on the north side by sloping the roof down to a single story, and virtually eliminating all windows. All of the other sides are open. The plan spreads to the east to give a more spacious entry to the garage and to the south and west to take full advantage of the sun and the view of the valley. The large two-story living room is flanked on the north and south by terraces paved with flagstone. This paving extends into the study, which by virtue of sliding doors can be turned into a guest room. The bedrooms have generous windows and custom built storage cabinets. A small, secluded dining room is provided in addition to the dining space in the living area. This room is for the owner, a physician who often takes his meals at irregular hours. One of the most interesting features is the radiant heat. It is a force flow hot water system with pipes laid in floors at various levels and in various types of construction. In the flagstone sections, such as the entrance hall, part of the living room, the study and downstairs bedroom, the pipes are laid in concrete slab finished with the topping of stone. Elsewhere they are laid between the subfloor and finished wood floor.

HOUSE IN OJAI, CALIF.  Austin Pierpont's design fits any weather, any function.

This flexible house, designed for simple country living, but expansion for entertaining guests, consists of a series of sheds and lean-tos arranged in a conventional U-plan. The core of the house is the music-living room and the adjacent dining-sun room which can be thrown together by sliding back the 16 ft. glass doors between them. Sliding glass panels also separate the sun room from a patio, making indoor-outdoor dining a pleasant reality. When both sets of doors are opened at once, a clear sweep is obtained from the patio through the living room, obviously a tremendous advantage during stifling summer weather. If seclusion is desired, however, the living room can be shut off completely and the sun room used as a passage between the kitchen on the left and the bedrooms on the right. Exposure of these two bedrooms and their private baths is planned to catch the all-day sun in winter and a direct breeze in summer. On the opposite side of the house a small office, required by the present owner, could become an extra bedroom if occasion demanded. High clerestory windows have been provided to siphon off the blanket of hot air which accumulates under the ceiling during the day, and which is not always carried away by the night breezes. The shed ceiling of exposed celotex used in the living-music room has excellent acoustical qualities and in the adjoining sun room an open ceiling gives an appropriate sense of space.

EXTERIOR OF THIS COUNTRY HOUSE CONTRASTS EFFECTIVELY WITH MOUNTAINOUS, SHRUBBERY-TANGLED SETTING

SCALE IN FEET

PORCH

OWNERS BED RM

GARAGE 20'x20'

PATIO

COVERED POSTAGE

DIN & SUN RM

MUSIC & LIV RM

SERVICE

GUEST BED RM

Y-GREEN FINISH PICKS UP NATURAL COLORS

TER RACE

Chipping Glass Door
LOUNGE AND RECEPTION AREAS AS SEEN FROM STAIRCASE AT REAR OF ROOM. NOTE PLASTER SPOTLIGHT FIXTURE.
INTERIOR OF CENTER VIEWED THROUGH GLASSED-IN ENTRANCE

INFORMATION CENTER—TIME Inc. A reception room for the public doubles as a display area for magazine projects.

This lobby information center, an adjunct to the offices of Time, Life, Fortune and Forum, was designed primarily as a link between these magazines and the public. It serves as a reception and relaxation room for visitors to Time Inc. and members of the armed forces—for anyone who wishes to read, write letters, study maps and photographs, watch movies or just ask questions. Located on the ground floor of the Time and Life Building, it is within view of everyone who enters.

The design for this center is a solution to space limitations as well as an interpretation of the room's function. Since the space available was long and narrow, architects Harrison and Fouillhoux decided to break its funnel-like appearance by dividing it into three specialized sections. The space near the entrance is designated as the reception area and is equipped with subscription and information desks. Steps lead down into the main part of the room, a public lounge with sofas, easy chairs, desks and tables, and another information desk. This section is devoted to displays by the magazines and is used occasionally for moving pictures, separated from the busy reception area by means of movable panels. Wall treatment is determined mainly by its suitability as a display background. Plaster is used for the wall which features huge global charts, blow-ups of maps designed for Fortune by Richard Edes Harrison. The opposite wall is made of a textured birch paneling which allows easy attachment of posters and photographic displays. In addition this wood surface camouflage the many openings necessary for air conditioning exhausts and similar mechanical equipment. At the far end of the lounge a staircase leads up to the third section of the center, a secluded mezzanine reading and research room.

YELLOW, ORANGE, BLUE FURNITURE IS GROUPED ON RED RUG
LIGHT BECOMES A SCULPTURAL MEDIUM IN FIXTURES DESIGNED BY THE ABSTRACTONIST ISAMU NOGUCHI

The most unique feature of Time Inc's new information center is its ceiling design. Here, for the first time, light has been used sculpturally as part of a room rather than as mere decoration. Isamu Noguchi, the artist who executed this design, considers illuminated sculpture only an indication of what can be achieved by combining function with form. He visualizes whole rooms—walls, floors and furniture as well as ceilings—done in this type of contour construction.

The concern with artificial illumination, a necessary part of the windowless information center proper, is less important in the small adjacent reading room. Its location at the only outside wall makes possible full length windows which provide excellent natural light. Long desks, each accommodating five people, are placed at right angles to the window wall thus eliminating front shadows.
REVELED STAIR PARTITION IS IN HARMONY WITH SCULPTURED CEILING TREATMENT, SERVES AS DISPLAY BACKGROUND.
WAR ACTIVITIES CENTERS show that effective design need not be expensive, yield many features readily applicable to postwar commercial work.

WAITING ROOM OPENS INTO CLOAK LOBBY; BLACK-OUT-SCREENED ENTRY IS THROUGH ADJOINING INFORMATION ROOM

1. LONDON SERVICE CLUB remodels bomb-damaged building, uses plenty of plaster and ingenuity to turn high-ceilinged rooms into a cheerful and intimate setting for soldiers' recreation.

The serviceman's leisure-time needs—to get away from a khaki-colored environment, to make telephone calls, to get directions about a strange city—are responsible for a new kind of design unit: the service club, where emphasis is on informality, visual interest, easy access and easy-to-operate facilities. This is not in itself an especially complex design problem. But the architects responsible for this good-looking Ontario Government club in London were obliged to plan for a minimum amount of labor and for only those materials readily available in Britain's war-short market. A variety of bright colors and surface finishes give gaiety and interest to what might otherwise be a fairly monotonous use of fibrous plaster (unrationed) for a wide range of elements including flower boxes, counter fronts, light fittings, jamb linings, architraves. To pare lumber use even further, polished cork has been used for floors and inside window sills. A plan that would, within the space limits imposed by the old structure, route guests through all service facilities resulted in rooms of doubtful proportions. But height has been exploited by decorative wall treatments while a flow of lights and darks (in both colors and fenestration) gives a pleasing room-to-room contrast.

ARCHITECT: Misha Black
ASSOCIATES: Bronie Katz, Kenneth Bayes

CEMENT SURFACING UNIFIES THE EXTERIOR
RAISED FLOOR AND COLORFUL MURAL SET OFF SNACK BAR FROM LARGE CAFETERIA

AS FRAMES CAFE ENTRANCE
Architects Glenn Stanton and Hollis Johnston make lunch-room service from dawn to midnight the hub of a well-arranged sequence of rooms where military travelers can wash up, rest, write.

A good many railway stations are now equipped with special military lounges, but this delightful little Red Cross canteen solves the problem of terminal congestion by inviting the big traffic of military personnel to come out of the station. The lunch room, with its capacious pantry, kitchen and storage accompaniment, is the logical core of a plan which wastes little space in corridors, puts plenty into shower rooms.

Stock windows grouped for maximum effectiveness, rough-sawed, natural cedar-board siding, and the unpretentious white-painted doorway give this simple one-story structure a welcoming and home-like quality that is reflected in its low-ceilinged, informal interior. It is, of course, a temporary building, put up over a concrete slab at minimum expense and heated by steam piped from the station. Donated to the Red Cross by the Steam and Marine Fitters Union, the canteen has served hundreds of thousands of enlisted men and women. Necessary quick service is assured by the ample amount of well-handled space set aside for preparation and storage of food. This work area is a self-contained unit, with its own entrance, cloak-room and lavatory.

CONSTRUCTION OUTLINE:
- FOUNDATIONS
- concrete
- ROOF—built-up roofing. SHEET METAL WORK—galvanized iron.
TERRACE, off music room, is a good place for sun-bath after tired travelers have finished lunch or showered.

LUNCH ROOM, with popular curved counter for maximum seating, is off small entrance lobby, handy to telephones and checkroom.

ENTRANCE is set off by white trim from attractive finish of natural cedar boards. Note 3 ft. roof overhang, eliminating gutters.

LOUNGE is separated from music room by glazed screen. There is a writing alcove and fireplace, flanked by wood closets.
Architect Pietro Belluschi emphasizes form and simple structural materials, makes bold use of color, adds imaginative lighting to lend excitement to a compact and efficient lay-out.

War fund collecting is a regular job everywhere, but few cities have an efficient center like this one in Portland, whose sleek appearance must be worth many times its cost in merchandising value. A vacant shop was donated by the owner for the center. The whole job of remodeling, plus all exterior and interior fixtures and carpet, cost under $4,000.

Enough wood was available to dress up the invitingly recessed entrance and to finish the side portions of the ceiling, lowered to emphasize the rough texture of the unfinished center. All walls are fiber board. The gracefully curved counter, which dominates the interior, and slanted partitions break up the box-like shape of the small room and efficiently separate the public area from behind-the-scenes working and storage space. Color is used boldly and lavishly to give character to the unpretentious design. The walls grade from deep mauve to vermillion, set off by clear blue sections, while columns are alternately red and gray. Since such centers are usually busier at night than in the daytime, lighting has been carefully worked out both for utility and for a maximum of eye appeal.
The sprawling industrial city of Detroit, midway point on the Great Lakes water­way, is the hub of America’s automobile industry and birthplace of the assembly line, a dirty, noisy, hard-working town. Above all it is a live and growing town. Many of its assets and its failings are common to the myriad other industrial cities, large and small, which together made possible America’s “miracle of production.”

Because a sound economic base is essential to all other city activities, an examination of Detroit’s business is a vital part of its entire program. In this city, work is concentrated in the automobile industry which in 1940 employed 60 per cent of all manufacturing wage earners in the area. Ford, Chrysler and General Motors, plus the smaller Pack­ard and Hudson Companies will undoubtedly employ more workers after the war to supply a car-hungry nation.

However, even with the expected postwar boom, 100,000 to 300,000 war workers will be unemployed after reconver­sion. To complicate the problem, Detroit ordinarily uses several thousand seasonal laborers who come to the city for peak automobile production and are laid off when it is over. The additional fact that the automobile industry is most sensitive to national prosperity makes it at best a fluctuating job prospect.

In the past, booming industry and unemployment have left their mark on the city. Since unstable workers seldom buy homes, two­story flats have sprung up as an answer to irregular incomes. The community, also unable to anticipate its income, has settled for shoddy construction of essential public services. Mushroom growth has been followed by blight and decay.

The stabilization of employment in Detroit is, therefore, a prerequisite for any real advance toward an efficient and pleasant city. This can only be accomplished by setting up new industries producing non-durable consumer goods — shock absorbers against the flighty automobile business. It is Detroit’s plan to foster such new job opportunities through cooperative action by industry, government agencies, and the citizens themselves.

Jointly with solving the problem of unstable employment, plans have been undertaken for much-needed city improvements. A new highway system, routing express traffic around residential communities and insuring free flow in industrial and business areas has been developed. Parks and playgrounds have also been restudied. Improved land use plans and zoning laws have been worked out. Within this over-all framework, replanning of specific areas takes on new significance as part of a tightly knit plan. Detroit’s City Plan Commission has used the scheme of “farming out” such areas to independent architects for exploratory study. These solutions, designed to conform to the new highway, park and zoning systems, may not be accepted without change, but they will undoubtedly serve as guides to long-range replanning of the Detroit area. Three of them are shown on the following pages.

* (Because Detroit’s Master Plan has so many interlocking parts, it cannot be adequately presented in one article. In a future issue The Forum will discuss Detroit’s proposed expressway and transit system, a study by W. Earle Andrews and Associates.)
One of the most controversial areas under study in Detroit is the Civic Center which groups together city, county, state and federal offices as part of the extensive plans for riverfront development. Two studies have already been made for this area and a third is now being discussed. All three plans use the same basic building structures, the major change in each case being a site relocation.

The first study, made by the County Road Commission, assumed that an elevated expressway would be built next to the water's edge and that new government buildings would be placed behind it connecting with the city proper. This, however, would have cut off any river view from the buildings.

The City Plan Commission, therefore, developed another scheme in conjunction with revising the expressway system. In this second plan, buildings are placed directly on the waterfront, separated from the city by the newly located expressway now depressed rather than elevated. Certain features of this scheme, too, were questioned, particularly the isolation of the Center from the business section and the problem of providing parking space for at least 4,000 cars belonging to employees.

A third plan, therefore, will place the buildings nearer the city and shift the expressway back to the river side. It will not be elevated, however, and space will be left beyond it for a waterfront park. Thus the best features of both former plans will be retained: convenience of the center in relation to the city proper and an unobstructed river view from offices in the government buildings.

The plan shown on these pages is the second study, executed by Suren Pilafian for the City Plan Commission and similar in most respects to the uncompleted third plan he is now working on. The basic idea of each Civic Center plan is to bring the multitude of government offices together in a coherent building group and to give these public buildings a measure of dignity and character. Location on the waterfront near Woodward Avenue was therefore logical because of the site's proximity to downtown Detroit and its potentialities for landscaping.

The City-County Building, placed at the extreme eastern end of the site, towers over the other relatively low buildings in the Center. To the rear it connects with a large garage which provides parking space for employees' cars. Between this group and the other buildings is a broad plaza open to the river which at this point is left free of boat landing facilities.

Memorial Hall, at the extreme west beyond the State-Federal Building, includes a large convention hall and exhibition area, a civic auditorium with a seating capacity of 25,000 and the Veterans' Building. This group is separated from the State-Federal Building by a narrow tree-lined court and much planting surrounds all the buildings, deadening traffic noise from the expressway. The area along the water's edge is shown as an open park at the eastern end of which a large restaurant is proposed.

The natural land slope from the northern edge of the Civic Center down to the river makes this site especially adaptable for underground parking. It would also allow direct access between such an area and the proposed depressed expressway without the necessity of driving to the surface.
STREET LEVEL circulation supplements expressway, is efficiently planned for routing traffic to and from major buildings. Pedestrian access is provided by ramp over expressway at street level.
The blighted area bounded by Michigan, Fourth, Fort and Trumbull — approximately 115 acres within walking distance of downtown Detroit — forms a pattern repeated in many an American city. Here are dilapidated houses tightly packed together on too-little ground. Here are old stores, dingy warehouses, factories and vacant lots. Here is the old story of haphazard growth and inevitable decay. Under the Master Plan Program areas such as these are to be eventually torn down and redeveloped into neighborhood units.

To restudy this section, the City Plan Commission picked the architectural and engineering firm of Eberle M. Smith Associates. Their project, complete with cost estimates, includes both an appraisal of existing conditions and a general plan for redevelopment. The scheme is not meant for immediate and complete execution, but is designed for gradual rebuilding by public or private developers when the money is available.

At present the area under study is used for a variety of functions: the western part is largely residential, the eastern industrial. To the south are railroads and terminals while the north is segregated by Michigan Avenue from extensive residential areas of depreciated value. Because the people who live here are in the lower income bracket, the great majority of houses are multiple dwellings and only a small number of persons own their homes. There is only one public school and no separate parks or playgrounds.

In contrast to these conditions, the new plan provides modern housing liberally interspersed with greenery and open space and given focus by arrangement around a central recreation field. The scheme is tailored to the proposed postwar highway system which routes through traffic around the community. Fourth Street is scheduled to become a super-highway and Michigan, Fort and Trumbull major arteries. Within the community all streets except three necessary for local traffic flow are eliminated. Housing is arranged ingeniously around this minimum street structure, a major portion of it concentrated in a super block serviced only by pedestrian walkways.

The elementary school, already well-located, but badly run down, will remain on the same site and be rebuilt on a modern and enlarged scale. Because the density of the area is planned for an average of 30 families to an acre, terrace type houses three stories in height will be used extensively and these will be designed for families who can afford to pay $45 to $60 rent per month.

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PRESENT BLIGHTED AREA has rigid block pattern, no planned segregation of residential and commercial areas.

REDEVELOPMENT STUDY groups housing for most efficient access to stores, schools and central recreation area.
A city as completely industrialized as Detroit is more apt to have cut its teeth on a riveting machine than on an El Greco. Belatedly, however, Detroit has realized that she is missing out on something, in quantity if not in quality. Her Institute of Arts is but a lonely gesture towards culture as compared to Chicago's 18 museums and Cleveland's 10 which include the history of science, nature, man and machines as well as art. A cultural center, is, therefore, one of her major postwar requisites.

Detroit is more fortunate than some cities in having the nucleus of its cultural center, a capital investment of several million dollars, already existing in a geographically ideal location. With remarkable planning foresight, the Main Public Library built in 1917 and the Detroit Institute of Arts which trailed along in 1927 were placed some two miles out from the congested business district on either side of the city median line, Woodward Avenue. Recently, the Rackham Educational Memorial has been built on a contiguous block. Considering this area in relation to Detroit's homes, places of work and transportation routes, it is as centrally located as any site to be found and will probably continue to be for a long time. The proposed new system of express highways—Harper-McGraw on the north, Hamilton and Hastings on the west and east—would lead directly to the center, making it even more accessible than at present. The quiet streets within the center proper would be used only as access to the museums and other groups.

As plans now stand, division of the center will fall naturally into three sections each within easy walking distance of the others. Wayne University is planning a site to the west and the Medical Science Center to the east. Between these sections are several blocks on which the Public Library, Institute of Arts and Rackham Memorial now stand. This will become the museum group. Here, if recommendations of the City Plan Commission are followed, will eventually be built a new Historical Museum, a Technological Museum, a Planetarium and Museum of Astronomy, a Museum of Natural Science and a Museum of Social Science. The present Institute of Arts is located in the northwest corner of the rectangular area, and these new buildings (along with the present Rackham Memorial) would occupy the two opposite sides—south and east. Only the Museum of Social Science would be grouped with the Institute of Arts. This perimeter arrangement of buildings facing inward makes possible an informal park in the central area, a definite part of the new plans worked out by architect Buford Pickens. It provides a pedestrian approach from Woodward Avenue at the west ending in a fountain plaza to the east—a focus for the museum entrances.

Kirby Avenue, present northern boundary of the museum blocks, is turned into a parkway connecting Wayne University at the west directly with the museums and the Medical Center. Ample parking facilities are provided between the Institute of Arts and the Museum of Social Science and in the rear of Rackham Memorial and the Technological Museum. These are screened from the park by the arrangement of buildings and from the street by generous setback and planting.

By orienting new buildings with old and by a bold use of block space, Pickens has succeeded in producing a well integrated group.
ILLUSTRATES HOW MUSEUMS WILL BE GROUPED TOGETHER AROUND AN OPEN PARK WITH ACCESS FROM EVERY DIRECTION
This project for a National Stadium in Rio de Janeiro is one of the most ambitious athletic arenas ever planned. Whether it will be built is a question only the politics of Brazil will decide, but its value as a fresh approach to a problem often burdened with architectural clichés will not be disputed. Designed in 1942 for a government sponsored competition, (never concluded) the fate of this significant structure rests with Senhor Gustavo Campanema, progressive Minister of Education and Health.

It is under Campanema that Brazil’s modern architects have been given an opportunity during an economic and building boom which has lasted for more than a decade. The results are eloquent proof that Brazil has developed a contemporary architecture peculiarly suited to local climate and custom; an architecture so assured and finished that it is sometimes referred to as the Brazilian Style. Niemeyer, a pupil of Le Corbusier, has contributed much to this development, particularly with his Yacht Club, Casino and Island Restaurant at Belo Horizonte.

In the requirements for the National Stadium Competition, the architects met one of the most complex designing problems they had yet encountered. The program included, in addition to a stadium for 100,000 persons, four smaller stadia devoted to swimming, tennis, basketball and gymnastics—the first for 10,000 and the others for 5,000 spectators each. Also to be designed in the same group was the National School of Physical Culture with space for classrooms, gymnasium, training camps, dormitories and an auditorium. In addition, a polo field and another field for general athletics were requested plus parking space for 10,000 cars. The solution, worked out for a predetermined site, handles brilliantly the problems of orientation, circulation and visibility so important in an undertaking of this size. Avoiding the usual arrangement whereby different buildings are seen consecutively, Niemeyer places the principal stadium in a central position, flanked in the foreground by the lesser ones. Thus, from the entrance, a general view of all major structures is enjoyed. A large concrete arch used to support the roof of the larger stadium is repeated in its smaller counterparts, giving a sense of continuity to the scheme. Because of the activities for which the smaller buildings were designed, flexible light control is provided by sliding panels attached to the structural arches.
Project avoids conventional balanced seating, concentrates audience in favorable northern area.

Principal stadium, designed for athletic competitions, civic ceremonies and military parades, meets the circulation requirements of every occasion. Final disposition of seats in three tiers serviced by large ramps permits complete access and evacuation in less than ten minutes. As opposed to the conventional bowl-shaped stadium with an equal distribution of seats, architect Niemeyer has placed three tiers at the north end, only one at the south. The wide roof projection slants down to become a narrow cantilevered overhang at the opposite end of the stadium.

Majority of seats are shaded from the sun by a wide overhang suspended from a concrete arch.
OPEN-AIR CORRIDOR SERVING CLASSROOMS OF COLEMAN SCHOOL ALSO PROVIDES SHELTER FOR PLAY AREA
TYPICAL CLASSROOM HAS WINDOWS ON SOUTH

KINDERGARTEN OPENS TO EAST AND WEST

ELEMENTARY SCHOOL in San Rafael, Calif., is a simple structure set among towering redwoods. N. W. Sexton, architect, Worley K. Wong and John C. Campbell, designers.

The Coleman school is one of a group in San Rafael planned especially as community schools for primary grades. Under this plan, location of a four-to-six teacher school in each district of town makes it possible for children to go to school without traveling great distances and for the teachers, because of small enrollment, to know all the children in the building. It also makes possible an exceedingly simple building. The administrative unit is located at one end of a row of classrooms and a kindergarten, with its own entrance, at the other. Classrooms are reached by an open corridor sheltered by a cantilevered extension of the classroom roof. All units of the school are connected by the passage-way and are independent of each other, with toilet facilities and individual entrances. Entirely closed to the corridor, classrooms have continuous windows along their higher sides, and sloping ceilings which reflect the light toward the inner part of the space. The kindergarten, at the back of the plot, is open on the east and west and has a gable roof in place of the shed type used for the other classrooms. The exterior color scheme would delight any child's fancy. Stucco walls are a light salmon while doors and gutters are turquoise. Colored tile inserts around the water fountains on the walls of the classroom corridors add a commendably uninhibited bit of decoration as does the kindergarten ceiling which is of purlines diagonally sheathed with finished pine boards.
INTERIOR IS EXPRESSIVE OF THE SIMPLE PLAN: LARGE WINDOWS TO SOUTH DRAMATIZE MAIN CLASSROOM UNITS.

The addition, at the end of building, serves as assembly room for pupils and community center for parents.
MEMORIAL HIGH SCHOOL, Bath, Me., stresses use of local materials, low main­
nance cost, and flexibility of plan. Designed by Alonzo J. Harriman.

This school, named for John E. L. Huse, who was killed in combat in an attack on the Marshall Islands, is one of the first “useful” memorials to come out of World War II. The school committee was interested in a straight-forward and sensible design, with stress on economy of construction. A simple plan was developed, dividing the structure into three units; administration, play and study; the classroom unit being such that expansion, if desired, is a simple matter of extending the building at one end. The gymnasium set at the opposite end of the building does not interfere with future extension and can be used by civic groups without disturbing classes while in session. The stage, located at the side, is used for seating at basketball games and for graduation exercises. Confusion of circulation is avoided by the fact that the stage has an entrance and exit of its own. For ease of maintenance native brick was left exposed on the inside of exterior walls. Wardrobes in the plywood partitions dividing the classrooms will be fitted with doors when funds permit. The plainness of the exterior is relieved by the use of glass block panels for the stair wells and canopies for the entrance shelters. Corridor walls are painted with a light reflecting paint and receive sufficient light despite the fact that they are in the interior of the building.
GYMNASIUM ALSO SERVES AS A LUNCH ROOM AND AUDITORIUM

CLASSROOM WALLS ARE PAINTED BRIGHT COLORS ABOVE DADO

WINDOWS ARE SPACED TO PERMIT SUBDIVISION AT ANY MULLION, PROVIDE PROPER LIGHT FOR VARIOUS SIZED ROOMS
The studies wing, extending toward a small lake, is the only unit of the building now completed.

Black Mountain College, which is set in the foot hills of the Great Craggy Mountains near Ashville, was founded in the depth of the depression—1933—by a group of educators who were opposed to the rigid curriculum and grade-and-credit system existing in most American colleges. The small coeducational institution, which has derived no income either from taxes or endowments, managed to survive on modest student fees and gifts from friends. But in 1940, the 75 students and 20 teachers learned that the buildings they had occupied for 7 years would not be available after June 1941. With great determination it was decided that the college would continue to operate, and plans were made accordingly. Summer buildings, on a newly acquired 700-acre tract needed renovating, and in addition, a structure for studies and class rooms had to be erected. Funds for the new building, an architect to design it and workers to build it were the primary problems. Funds were obtained, Lawrence Kocher, who had become interested in the work of the college volunteered to supply the design, and the teachers and students reorganized their work program so that a group was available at the site each day in the week. The building, the skeleton of which is timber, is supported in main by concrete and steel columns in cantilevered construction. It has continuous steel-sash windows of the projecting type, and outer walls of large sheets of corrugated cement-asbestos, which are easily screwed in place. Inner walls are finished with plywood.
OUND WAS BROKEN IN SEPT. 1940. CLASSROOMS WERE READY FOR USE SEPT. 1941

SPANDRELS ARE CORRUGATED TRANSITE

AND SOME MODERN STRUCTURE MAKES THE MOST OF AN EXCELLENT SETTING. LAKE IS USED FOR STUDENT RECREATION
ELEMENTARY SCHOOL designed by Walter Wurdeman and Welton Becket for Manhattan Beach, Calif., employs open, one-story classroom pavilions joined by covered passageways.

This school follows the now well-established California precedent of close relationship between classrooms and the out-of-doors. Limited to the kindergarten and first six grades, the Grandview Elementary School has three classroom pavilions of four rooms each, opening to the south with large sliding walls. Access is by covered passages on the north side of the wings above which are clerestory windows for bilateral lighting and through ventilation. Included in the basic classroom unit are library corners, storage closets and work counters with sinks. Seats are movable to permit free grouping of furniture either indoors or out. Toilets for boys and girls are conveniently located at the ends of each pavilion. A six-acre play field set on a slightly lower elevation can be reached from all points by way of the sheltered corridors. The kindergarten, situated in a separate wing facing south and east, accommodates 50 pupils and consists of a workroom, a restroom and an exterior playroom, all of which can be supervised by the teacher from any vantage point. This area has its own play space and activity terrace, an outside clay sink, storage cabinets, a movable library, a fireplace and a kitchen. Here the architects concentrated on providing a maximum of light, air and seclusion and in doing so departed from the plain, simple form which characterizes the treatment of the classroom wings. Administrative offices are placed in a separate unit near the principal entrance.
SLIDING STEEL AND GLASS DOORS OPEN TO TERRACES

ALL ROOMS ORIENT TO SOUTH AND EAST FOR PROPER EXPOSURE. OPEN AIR STAGE IS ALSO USED FOR OUTDOOR STUDY
The story of the David D. Bohannon Organization is, in an important sense, the story of war housebuilding. Will it also be the story of postwar housebuilding? The housebuilding business itself, above which Bohannon and a few other titans loom as Kaiser-like symbols of its maximum production potential, think so. Bohannon thinks so—"We have demonstrated beyond question that by our methods we can build a conventional house with fewer man hours than would be needed to build one of equal size by prefabrication away from the site."

The protagonists of the factory-built house have never intended to destroy the neighborhood, and there is, of course no reason why such houses cannot be erected in an orderly pattern of community living. But the whole trend of prefab merchandising has been to deal with the individual customer and to deliver a self-contained house, while the buyer is left to solve his own land-buying problems. Factory production tends to make the house progressively more independent of its site, to give it increased mobility, to step-up obsolescence while reducing cost. What this kind of product may mean for a pattern of stable community living is a question that perhaps may be safely put aside until a factory-built house is actually on the market. But it is interesting to note that the Bohannon type of operation, far from being independent of the neighborhood, is directly dependent upon the production of a large number of units at a single site, while the careful planning involved tends to stabilize neighborhood values and so to retard obsolescence. Bohannon's method results, not in mobility for the housing product, but in a high degree of mobility for the housebuilding operation.

What happened to David Bohannon is what happened, for the most part on a somewhat smaller scale, to every housebuilder who survived the building paralysis of the depression years and the convulsive pace of the war building job. Perhaps Bohannon was a little tougher than some because his building organization got its start in the lean year of 1932. Bohannon did custom-building whenever he could find a market, but from the beginning his business was built around the moderate-priced house and volume production. By 1941, when he first introduced precutting at the 400-unit Hillsdale project, Bohannon had collected the kind of integrated building organization which the business of neighborhood development demands. There was construction superintendent Robert L. Smiley, whose experience in such heavy construction jobs as Boulder Dam, Golden Gate Bridge, Crystal Springs had prepared him for the kind of systematization and organization which Bohannon and a few others were beginning to introduce in housebuilding. There was Walter R. Baumann, a former investment banker, who represented land buying and home merchandising know-how. And there was Ronald L. Campbell, an engineer and planning consultant, who had made master plans for many a California city.

BOHANNON BUILDING TEAM bucks war handicaps to show that neighborhood planning is the key to construction simplification and the low-cost house.

(Continued on page 136)
SAN LORENZO VILLAGE is a wartime job, but integrated community planning has developed a neighborhood.

SAN LORENZO VILLAGE, an integrated community of 1,500 homes, is a half-hour from San Francisco and within commuting distance of 12 big shipyards. Generous lots front on a curvilinear street pattern, with circulation carefully planned to reduce traffic. Nucleus of this efficient neighborhood is a community center, where schools and shops adjoin adequate parking space.
EXTERIORS of San Lorenzo houses are rescued from repetitive monotony by variation of color and exterior finish (stucco and cypress), given privacy by careful spacing and setbacks. War-time limitations made it necessary to build all 1,500 houses from the same basic plan. Usual Bohannon practice is to use a dozen plans, plus a variety of front elevations. Landscaping and color harmony add interest.

PLAN provides for a bedroom with its own entrance, to be rented to a war worker. This not only eases the war housing pinch, but also helps the buyer to carry his mortgage. Material shortages eliminated garages, but a concrete slab is supplied over which owners may erect garages later. Large kitchen utility closet for laundry equipment is a noteworthy feature. Living room alcove provides dining space.
and county. In the Bohannon set-up, Campbell was responsible for the planning that provided a complete environment for living, built around a community center, shops, parks and unified by screen planting and color and architectural control. Bohannon's prewar experience decisively pointed up an almost axiomatic fact: not only does it make sense business-wise to build houses in soundly-planned neighborhoods, equipped with the facilities for community living, but also that only a building organization based on the integration of planning, construction and merchandising skills can achieve all the advantages of the integrated neighborhood.

When in the fall of 1941 war shut down all housebuilding not in war production centers and put an end to the Hillsdale development, Bohannon faced the alternative that confronted every other housebuilder: he could shut down for the duration—or he could move to where war housing was needed, build the $6,000 and under house, take on the additional financial load of holding half his output for rent, fight a thousand nagging difficulties of materials lack and priority stoppages. Builders were already competing for the handful of priorities issued to cover the first 200,000 war houses. And those who got them soon found that ratings were too low to obtain the irreducible minimum of steel and copper that was imperative for even the trimmed-down war house.

Many a builder, shuddering at the unmeasurable risks and the formidable handicaps of the war housing job, put away his bulldozers and jigs. But Bohannon's years of large-scale operations had equipped him with both the methods and the building organization that could stand up to the urgencies of production to match the needs of the hundreds of thousands of workers pouring into the shipyards and aircraft plants of the Bay area. And, unlike most of the nation's top handful of neighborhood builders, he was used to working within the narrower margins of the median-priced house.

It didn't take Bohannon long to make up his mind. Construction boss Bob Smiley loaded up the lumber unused at Hillside and got the roller tables ready to move to a new cutting yard. Within a week the Bohannon organization was at work on its first war job—a 212-unit project at Sunnyvale, Calif., one of the first Title VI developments in the busy Bay area. After that, Bohannon communities mushroomed almost as fast as war workers arrived to move into them. There was Westwood at Napa—559 houses, Rollingwood at Richmond—700 houses, and finally mammoth San Lorenzo, a self-contained town of 1,500 houses, pointed to by Bohannon's fellow builders as the nation's No. 1 private war housing job.

Bohannon's mass-production method, adopted in principle by almost every builder who produced war housing in any volume, was to reverse the prefab.
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There's no doubt about it! Republic ELECTRUNITE E.M.T. light weight, rigid steel conduit is the modern streamlined raceway for wiring.

ELECTRUNITE E.M.T. is safe. It provides adequate electrical and mechanical protection as determined by the Underwriters' Laboratories. It is approved by the National Electrical Code for exposed, concealed or concrete slab construction.

Its uniform, tightly-adherent coating of zinc offers continuous rust and corrosion protection — unbroken by threads . . . unmarred by vise or pipe wrench teeth.

ELECTRUNITE E.M.T. is light in weight. Because it is threadless — requires no excess metal as a base for thread cutting — it actually weighs less than half as much as ordinary threaded conduit. Thus it takes the "back-break" and "arm-ache" out of installation, especially where runs are overhead, in shafts or in other difficult locations.

Equally important, its uniformly high ductility combined with its freedom from excess weight makes ELECTRUNITE E.M.T. easy to bend. With the patented ELECTRUNITE bender, predetermined bends can be made accurately and rapidly — in the shop or on the job.

For additional information see your local Republic ELECTRUNITE Distributor, or Republic Steel and Tubes Division Representative.

REPUBLIC STEEL CORPORATION
STEEL AND TUBES DIVISION • CLEVELAND 8, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

SEE SWEET'S FILE
or write for detailed information on these Republic Steel Building Products
Pipe—Shanks—Roofing
Endow Stainless Steel
Teekan Enameling Iron
Electrunite E.M.T.
Frate-Moon Rigid Steel Conduit
Taylor Roofing Tornos
Berger Lockers, Bins, Shelving,
Kitchen Cabinets
Truscon Steel Windows, Doors, Joints
and other building products

LIGHT WEIGHT THREADLESS RIGID STEEL CONDUIT

JUNE 1945
JOE TERMITE:
"Wood-hungry as I am, I'd rather starve than eat CZC-treated lumber."

LENTINUS LEPIDEUS:
(Wood-decaying fungus)
"As a food, CZC-treated lumber is terrible. I can't stand the stuff."

SAMMY SPARK:
"I can't seem to get going on CZC-treated wood. It leaves me cold."

3 Dissatisfied "Consumers"
Most testimonials sing out praises. But here are three from highly dissatisfied "consumers." To them, lumber that has been pressure-impregnated with CZC (Chromated Zinc Chloride) is repulsive.

Yet, the desirable properties of the wood, such as strength, workability, etc., remain unchanged. It is odorless and clean to handle. When lumber is again available, be sure you have on hand this book on the advantages to you of CZC-treated lumber. USE THE COUPON NOW!

DU PONT CZC
CHROMATED ZINC CHLORIDE
Makes Wood Repel Termites—Resist Decay—Retard Fire

DITCHING at San Lorenzo rivaled Seabee speed

BOHANNON BUILDING TEAM
(Continued from page 136)

process by moving the factory to the housing site. The site itself, prepared by foundations laid to factory-like precision, became his assembly table. Just as the prefabs moved the house through a plant assembly line, so Bohannon moved his construction crews—each man trained to a single part of the job—over the giant site. And the Bohannon assembly line moved with prodigious speed—in the mill yard each man cut 100 rafters an hour, on the site each tractor operator dug 450 pier holes in an eight hour day, foundations were ready in forty-eight hours, at San Lorenzo assembled houses rolled off the line at the rate of one every seven hours.

Production at a pace unmatched in the industry was possible because Bohannon had broken down the complex con-
SPEED PLANS WITH STEEL FRAMES

Better-Built Buildings To Aid Tomorrow’s Expansion

TODAY, the test... in theatres of war... tomorrow, ready to step into your blueprints with greater flexibility of design and many other benefits to architects, builders, and building-supply dealers... that is the background and the forecast of EVERWEAR Steel-Frame Construction.

This simplified method of building-construction uses patented, welded-steel channels in the form of quickly-erected, steel panel-frames in standard arrangements to accommodate wall-surfaces, door-openings, or window-spaces. Only tools needed for assembly are hammer, wrench, and screwdriver.

Among the many advantages of Steel-Krame Construction for better-built buildings are: Use of conventional building materials over the Steel Frames; no skilled help required; lowest-cost means for making additions to buildings, even though Steel Frames were not originally used; greater flexibility in design—not limited to standard lumber lengths; foundation and framing are termite-proof; better insulation permitted; comparable in cost to conventional construction.

These prefabricated Steel-Frames will be made available in peace-time by “SOUTHERN STATES” an experienced, 30-year-old organization, and one of the largest in the building-materials industry, whose interlocking galvanized Steel Roofing, Steel Shingles, and many other building materials have established a reputation for quality.

You, as a progressive architect, builder, contractor, or building-supply dealer will want to complete your post-war plans with Steel-Frame Construction. Write today for our new booklet: “PREFABRICATED STEEL BUILDINGS.”
Give me the clean one on the bottom, Miss...

So...

turnover works in reverse?

Customers are notoriously choosy people. They're downright stubborn when it comes to accepting soiled merchandise at regular, unstained prices. You can't blame them for picking from the bottom of the pile... merchandise which has been protected against the settling of airborne dust and dirt!

However, a lot of the country's best stores have solved this problem with Westinghouse Precipitron*. While periodic dry dusting or vacuum cleaning only succeeds in churning the dust and setting it in motion to resettle again, Precipitron collects it.

Precipitron sets an electronic trap for airborne particles—it removes more than 90% of all foreign particles in the air—and operates 5 to 10 times more efficiently than mechanical filters. In many commercial businesses, in industries and many manufacturing operations—wherever clean air is important—Precipitron performs effectively and economically.

You can easily find out more about this remarkable Westinghouse development by calling any Westinghouse Office. Or write Westinghouse, P. O. Box 868, Pittsburgh, Pa.

WHAT PRECIPITRON DOES

Ordinary mechanical filters permit varying sizes and kinds of dust and dirt to pass through the circulatory system—but PRECIPITRON electrostatically cleans air, even eliminating tobacco smoke particles!

The results of the "Blackness Test," shown at right, indicates clearly what PRECIPITRON can do. Here are actual photographs of the test—where 2900 cubic feet of air, in each instance, were drawn through a cloth area for a 60 minute period!

The effectiveness of PRECIPITRON, demonstrated here, will save the loss of many thousands of dollars resulting each year from damage by airborne dust and dirt in the home, factory and store.

THE COSTLY NUISANCE OF DUST BANISHED BY PRECIPITRON, FROM...

Homes, Hotels and Apartment Buildings
Laboratories and Hospitals
Retail Stores, Banks and Office Buildings
Theatres, Restaurants and Night Clubs
Mills, Factories and Machine Shops

*Trademark registered in U.S.A.
S.R.P. gives iron, steel and other metal surfaces protection against the formation of rust, stopping trouble before it starts. And by actually penetrating through and combining with previously formed rust on old work, S.R.P. puts an end to any further rust formation.

Piping, fences, structural members and sheet metal surfaces — inside and out — need the kind of extra protection that S.R.P. supplies. Application is easy — no expensive preparation is needed. After wire-brushing to remove loose scale or any foreign matter, S.R.P. is applied by brush or spray, just like paint. Firm rust need not be removed.

Write Dept. AF for free bulletin on S.R.P.
For floors that help eyes see better...

For Light-Reflecting Concrete Floors

Salvage Light

TESTS SHOW that light-reflecting concrete floors—made with Atlas White portland cement instead of with regular gray cement—salvage light rather than waste it. By comparison with floors made of gray cement, they reflect 60% more light!

Send for a copy of the book, "Light from Floors." Write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N.Y.

BOHANNON BUILDING TEAM

(Continued from page 138)

steel's place as No. 1 war shortage, the site cutting yard meant making use of the last scrap of lumber. Its facilities for grading and sorting enabled Bohannon to buy ungraded lumber by the boxcar. And getting any kind of lumber, when San Lorenzo construction started in the spring of '44, was something like a miracle. In the second place, site assembly promised many postwar economies over its competitor—factory production. Argued Bohannon:

"Lumber and bulk raw materials can be more economically shipped and handled than when assembled into finished units. Site fabrication does not necessitate investment in a costly plant, whereas a factory requires a substantial capital outlay, extensive warehousing and storage of parts, long in advance of final erection on the site. Precutting equipment is mobile and can be economically moved from job to job."

Whatever the construction economies that war need brought, mammoth San Lorenzo is anything but minimum war housing, and Bohannon expects it to have a long and useful future. From the beginning, Bohannon had fought for war housing designed for family living as the only way to cut down costly labor turnover. And although San Lorenzo was built to conform to the wartime restrictions of materials, plan, costs, amount of floor space, its construction compares very favorably with top prewar standards. Specifications included continuous concrete foundations, 4 by 6 in. girders, 2 by 6 in. floor joists for spans up to 8 ft., 1 in. subflooring, cedar shingles, foundation walls protected by sprayed paraffine, inside walls of plaster over perforated gypsum lath. There were tile floors in the bathroom and linoleum over felt in the kitchen and breakfast alcove, a living room fireplace, and heavy gauge wiring on a three-circuit system in anticipation of postwar

(Continued on page 146)
Because they are easier to open,

let in more light,

save maintenance cost,

stay tight and trouble-free

in school buildings *

Use Windows of **ALCOA ALUMINUM**

Fifteen years of actual use... highly successful use... have clearly demonstrated the merits of aluminum windows. In a number of large cities they are the standard window specified for all new school construction. The manufacturers of aluminum windows offer you a selection of types and styles that should meet any need your plans call for. The Aluminum Window Manufacturers Association has established standard specifications for these windows. To get their literature and the new 1945 specification book, write **ALUMINUM COMPANY OF AMERICA**, 1866 Gulf Building, Pittsburgh 19, Penna.

*Milo H. Stuart Memorial Building, Arsenal Technical Schools, Indianapolis, Indiana, Pierre & Wright, designing architects. A. A. Bohlen & Sons, supervising architects.*
PARTIAL LIST OF DISTRIBUTORS

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BUTT'S ELECTRICAL SUPPLY CO.
Charleston, S.C.
DUTTON LAINSON COMPANY
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Oklahoma City, Okla.
JENKINS WHOLESALE DIVISION
St. Louis, Mo.
JENKINS WHOLESALE DIVISION
Wichita, Kan.
LIQUID GAS EQUIPMENT CORP.
San Francisco, Calif.

ALCAZAR GAS
DALCO APPLIANCE, DIVISION OF
DALLAS SUPPLY CO.
San Francisco, Calif.

A. J. LINDEMAN & HOVISON CO.
MILWAUKEE 7, WISCONSIN

THE SHERIDAN
THE BILTMORE

GOODWILL...
That's 70 Years Deep

"And here is the kitchen". The L&H range you so thoughtfully installed likely will be enthusiastically acclaimed by your clients. Generations of housewives have depended on L&H for the "last word" in cooking convenience — for the modern range of their day. In many families, a modern L&H range is traditional.

Your good judgment in selecting L&H ranges is supported by goodwill that was 70 years in the making — that is universally recognized by life-long users of L&H products. Modern as always, new L&H models will have improved time and labor-saving devices, temperature and time controls — features to excite the admiration of even old friends of L&H. Here is the clue to the range that best fits your plans!

You will want to know the complete story of L&H ranges. Send us your name now. When we have resumed civilian production, you will receive a colorful presentation of the advanced L&H ranges — an interesting and informative exposition in keeping with a modern line well in the foreground of its specialized field.
Step in, gentlemen! Here are 32 pages of new ideas—new ways to plan homes for tomorrow's better living. Built on an entirely different principle, "Today's Idea House"—just published by Ponderosa Pine Woodwork—shows how to use doors and windows functionally...to satisfy a wider range of human needs and desires. Dozens of illustrations help tell the story...and it's a story you can use as a major planning aid. A copy of "Today's Idea House" is yours for the asking—mail the coupon!

In the new Ponderosa Pine booklet, "Today's Idea House," dozens of illustrations show new ways to give tomorrow's home owners more beauty...more privacy...more light and air...more economy with stock woodwork. Don't fail to get your copy!

PONDEROSA PINE WOODWORK
Dept. MAF-6, 111 W. Washington Street, Chicago 2, Illinois
Please send me a free copy of "Today's Idea House."

Name

Address

City ___________________________ Zone ______ State ________

JUNE 1945
Yes, 5,000 years ago architects, engineers and contractors knew about clay pipe and used it. This pipe, lacking all the improvements of modern vitrified clay, but the same in principle, was found in ancient Babylon.

You may not reasonably expect a sanitary sewer, highway, airport, railroad, public building, factory or home to last 5,000 years. But the economy of using Clay Pipe for any kind of sewerage or drainage is something that you can expect, because properly installed Clay Pipe will insure future generations the use of the job you do today.

The reason for the long life of Vitrified Clay Pipe is the fact that it is chemical-proof and abrasion-proof. Clay Pipe is impervious to acids, alkalies, industrial wastes, gases and the grinding abrasion of moving sand and gravel. It will not corrode, decompose or crumble. Clay Pipe is strong, durable, economical and easy to use. Consider final costs as well as first costs, and you will find this true: "It Will Pay to Use Clay."

WRITE FOR INFORMATION

Through its technical engineering staffs, the Clay Pipe Industry carries on constant research to improve products and to adapt them to current construction practices. For latest information or engineering literature, write to:

NATIONAL CLAY PIPE MANUFACTURERS, INC.
111 W. WASHINGTON ST., CHICAGO 2, ILL.

BOHANNON BUILDING TEAM

(Continued from page 142)

use of household appliances. Warm air gas floor heaters were installed, with automatic water heaters placed in utility closets off the kitchen, and these are large enough to accommodate automatic home laundry units when they become available. San Lorenzo was financed by a $7 million FHA-insured loan from the Bank of America and the American Trust Co.

But it was in neighborhood planning that Bohannon got a chance to do a maximum of what he had always aimed for. The 300-acre tract was laid out in lots with a minimum 50 ft. frontage and a depth of 100 ft. Each lot was planted and landscaped before the buyer moved in. The street system was planned with few main traffic arteries, and a circulating grid system to minimize traffic. Because of urgent need, housing went ahead first, but community facilities are now nearly finished. Playgrounds are equipped and a nursery school is in operation. The San Lorenzo Sun began publication in February. A supermarket (James M. Mitchell, San Francisco, architect) is almost finished, and leases have been closed for most of the stores and service units in the community shopping center. Construction started in January on a 15-classroom school (Dragon & Schmidts, Berkeley, architects) which will be ready for the fall term, and construction of a movie theater (Alex A. Cantin, San Francisco, architect) will soon begin. Two churches are in an advanced stage of planning.

Bohannon believes that neighborhood building means, not just immediate provision of all necessary facilities, but also allotment of adequate space where additional facilities can be developed as need arises: enough room for churches, clubhouses, baseball diamonds, swimming pools, teen-age and child-care centers. Many communities are unsatisfactory, he says, because they were laid out by subdividers and builders who set aside land for community purposes and used more than was necessary for streets. "The successful developer is not a mere subdivider of land or builder of houses. He is a creator of complete communities. Once a new tract of land is subdivided, streets improved and houses built, the daily lives of all the families living within its boundaries are cast into a permanent mold. There is no substitute for planning—good communities don't just happen!" Bohannon has demonstrated to his own satisfaction that intelligent planning can provide park, playground, community center, school and church sites, reduce the amount of land used for streets and still have room for as many dwellings as the unplanned subdivision.
on garage doors for the traditional type home

When residential building starts again we shall see, no doubt, many interesting innovations. But, we shall also see, in the predominance of familiar type new homes, how deep is America's loyalty to the traditional.

And, because many of these traditional type homes will have single or double attached garages located well toward the front of the structure, the doors of those garages must be considered as an integral part of the architectural design of the facade and treated accordingly.

A logical choice for such installations is the Crawford Door shown above. It has the simple, harmonious design and the quiet dignity that blends with traditional motifs. It has the substantial Crawford construction, familiar to builders and architects for 15 years. And, postwar, it will have the engineering improvements born of Crawford's wartime experience in building 14,000,000 fine precision parts for aircraft. It is a good door to specify.

Crawford Door Co. 401 St. Jean Ave., Detroit 14, Mich.
in floors, too...

IT'S THE Finish

BRUCE

America's Beauty Floors
THAT COUNTS!

IT'S THE NEW FACTORY FINISH ON BRUCE FINISHED FLOORING THAT WILL MAKE IT A WINNER FOR POSTWAR BUILDING

8 WAYS BETTER THAN ON-THE-JOB FINISHES!

1. Smooth Sanding — Each strip sanded to perfect smoothness on multiple drum, precision sanders. No sander marks.

2. Prime Condition — Finishing starts immediately after sanding, so no "raised grain." Moisture content of flooring is right.

3. Perfect Filling — Highest quality silex filler is rubbed into wood as flooring moves down the finishing line.

4. Thorough Sealing — Bruce Finish penetrates into wood pores . . . seals them against dirt and wear. Enhances beauty of wood grain.

5. Infra-red Drying applies heat uniformly . . . welds finish into a tough, even film. No "unfavorable drying weather" at the plant.

6. Extra Buffing with high-speed brushes burnishes finish into wood . . . provides a harder, smoother surface to receive wax coat.

7. Superior Waxing — Special wear-resistant wax is applied evenly, then polished over and over with brushes and buffers.

8. Proper Seasoning — Finishing done weeks before flooring is used—so no hazard of finish being walked on too soon.

Yes! It's the Finish that Counts in Floors!

New Bruce Finished Floors will give homebuilders everything they want: Extra beauty . . . Extra wear . . . Extra cleaning ease! They will give the building industry a modern material that can be used and recommended with confidence for postwar building. Announcement will be made when the new Bruce Finished Flooring is available.

E. L. BRUCE CO. MEMPHIS, TENN.
World's Largest Maker of Hardwood Floors

BRUCE FINISHED FLOORS

JUNE 1945
BLUEPRINTS FOR YOUR HOUSE of TOMORROW

YOU MAY HAVE CHANGEABLE WALLPAPER
The combination of junior and jam will hold no terrors for post-war parents. Repapering a room will be as easy as pulling down a shade.

BUT -
Your Heating Plant will be KOVEN WATERFILM

There promises to be many wonder­ful improvements in the post-war period but even then there will be no heating system that can rival the economical heating satisfaction given by the KOVEN WATERFILM BOILER. This fast steaming boiler combines all the newest scientific improvements to provide quick heat, even room temperature and a plentiful supply of domestic hot water. The WATERFILM is especially built for use with oil, stoker or gas. Its patented construction and smart design, which can't be duplicated by any other boiler, makes an attractive addition to any basement room. The WATERFILM boiler is available in a variety of models...suitable for use in industrial plants, apartment houses and large or small homes. The sectional series for apartment houses or industrial plants can be taken through a two foot door thus eliminating expensive rigging and alteration costs. Call or write KOVEN for complete details.

WATERFILM BOILERS, Inc.
154 OGDEN AVENUE JERSEY CITY, N. J.
PLANTS: JERSEY CITY, N. J. • DOVER, N. J.

3 PLANTS TO SERVE YOU!

At PENN GAL­VANIZING you have the facilities of 3 plants working 24 hours a day, 7 days a week, to take care of your demands for QUALITY HOT DIP GALVANIZING of your iron and steel products. Furthermore, you are assured of the PENN­izing process as perfected by PENN through long experimentation.

PEN­
GALVANIZING CO. PICKLING AND PAINTING

HOT DIP GALVANIZING PICKLED AND PAINTED IRON AND STEEL PRODUCTS FURNISHED

PLANTS: No. 1. 2201 E. Tioga St. No. 2. 2400 E. Tioga St.
No. 3. 3548 N. Sepivve St.

JAIL & PRISON EXPERTS
Backed by 65 years experience we can assist you with your
PLANS - SPECIFICATIONS - COST DATA

FRIES & SON
Steel Construction & Engineering Co.

THE ARCHITECTURAL FORUM
Timely tip about your client's
"under-foot" overhead

Carey ELASTITE ASPHALT FLOORINGS
are economical to begin with and go light on maintenance for life. They're built extra tough to stand up under constant severe service in industrial or commercial use.

They're attractive, comfortable to stand or walk on, easy to lay.

Underwriters' Laboratories, Inc., list them as fire resistant. They're also electrical and chemical resistant... vermin and termite-proof.

In our own Research Laboratories the performance of Carey Asphalt Floorings under special service conditions is constantly analyzed to assure complete satisfaction in use. Specify Carey Elastite Asphalt Floorings. For data or engineering service, write—

THE PHILIP CAREY MANUFACTURING CO. LOCKLAND, CINCINNATI 15, OHIO

Coreyduc • Industrial Insulations • Rock Wool Insulation • Asbestos Shingles and Siding • Asphalt Shingles and Roofings
Built-up Roofing • Roof Coatings and Cements • Waterproofing Materials • Asphalt Tile Flooring • Pipeline Felt
Expansion Joint • Asbestos Wallboard and Sheathing • Corrugated Asbestos Roofing and Siding • Miami-Carey Bathroom Cabinets and Accessories

IN CANADA: THE PHILIP CAREY CO., LTD. OFFICE AND FACTORY: LENNOXVILLE, P. Q.
In this heyday of emancipated form and esoteric contemplation of the abstract there has been acutely lacking a thorough, realistic analysis of the structure and function of the graphic image in all fields of design—not only for the allegedly retarded public mind but also for uninitiated professionals who have to continue earning their living as artists. *Language of Vision* is just such a book. Its purpose is to explain to the observer not only what he sees, but how he sees contemporary art—not in terms of esthetic criticism of scientific technology but by the reconstruction of his mental and emotional participation in the organization process. Mr. Kepes' book stands on the no-man's-land between such highly specialized works as Dr. Lukiesh's *Light, Seeing and Vision* and the Museum of Modern Art's excellent works on contemporary painting and photography.

Sigfried Gideon, who wrote the introduction to *Language of Vision*, says, "The public, including those who govern and administer it, is still lacking the artistic, that is the emotional training corresponding to our period. Both are plagued by the split which exists between advanced methods of thinking and an emotional background that has not caught up with these methods... Gyorgy Kepes, as we all do, regards art as indispensable to a full life. His main object is to demonstrate just how the optical revolution—around 1910—formed our present day conception of space and the visual approach to reality. He shows how this development was differentiated in many ways of expression, from cubism to surrealism, forming together the multi-faced image of this period. He shows why modern artists had to reject a slavish obedience to the portrayal of objects, why they hated the 'trompe l'oeil.'" If it is possible to bridge with words and illustrations the gap between the emotional immaturity of the average reader and the highly advanced expression of most contemporary artists, Mr. Kepes does so. This is, however, a subject of great controversy since a great number of modern critics and artists believe that full emotional appreciation of art can only be attained through natural first-hand experience. Right or wrong, Mr. Kepes' attempt to educate his readers is careful, thorough and practical. Step by step he leads the way through basic analysis and reconstruction of the plastic elements: line, plane and color to a revaluation of the outstanding means of artistic expression of this century.

The result is a lucid and factual briefing that will probably start many a future patron on his way. The book is, however, primarily geared to advertising rather than "Art pur."

Though in conclusion Mr. Kepes pleads, "If social conditions allow advertising to serve messages that are justified in the deepest and broadest social sense, advertising art could contribute effectively in preparing the way for a positive popular art, an art reaching everybody and understood by everyone." This commercial note should not disturb nor discourage the lay reader. *Language of Vision* offers in extremely practical terms a survey of twentieth century graphic art in general. By virtue of the absence of any long haired treatment, it can be recommended for general reading without reservation, as the following comment on Picasso's "Guernica" will show: "Picasso, stirred to a fury of indignation by a human drama caused by the regressive social forces and their significance today, in a visual projection of the discrepancy between life as it is and life as it should be, represents human figures in a distortion of pain and suffering. Mouth and lips, nose and nostrils are shaped by pain in positions far from empirical reality and yet close enough so that they are recognizable in familiar terms... Textures break up the surface like bayonets tearing a living body. But all these violent plastic forces are organized as a visual progression in which each part demands the other, and can live only through the help of the other. (Continued on page 154)
NO BLISTER PROBLEM HERE
NOW OR LATER!

Ruberoid Air-Vent Felt being applied to the roof of Shibe Park, Philadelphia’s big league baseball stadium.

It is no longer necessary to worry about blister trouble on smooth-surfaced built-up roofs.

Ruberoid’s Air-Vent Felt* controls the blisters and air pockets that cause lifting and bulging... and in the simplest possible way!

Patented Air-Vent Felt has pinpoint perforations—punched alternately from top and bottom—that form “Outlet” and “Inlet” valves. When Air-Vent is laid, the air or vapor below is forced out through these tiny “Outlet” valves. At the same time asphalt seeps through the “Inlet” valves giving a better bond between the layers of felt. As a result Air-Vent adheres to the mopped surface much better than ordinary felt, and once down it stays put! ... no blister problems because there are no air bubbles to expand and lift the felt from below.

Ruberoid Air-Vent Felts are available in both Asphalt and Asbestos types... both proved in practical performance. Ask your approved Ruberoid contractor, or write for full specifications.

The RUBEROID Co., Executive Offices: 500 Fifth Ave., New York 18, N. Y.
ASPHALT AND ASBESTOS BUILDING MATERIALS... THERMAL INSULATIONS
BOOKS

(Continued from page 152)

One shape takes over the direction of another shape; one tone value repeats or contrasts a foregoing value in the living rhythm of the integrated whole. . . ."

America, most reluctant convert to the wiles of the dynamic technique in advertising, can well use a shot in the arm. Advertising posters represent the greatest link between art and the common man. If this medium remains keyed to the esthetic highwater mark of Alka-Seltzer and other notable examples, it can take no advantage of its cultural opportunity and obligation. With Language of Vision the average reader will learn what can be expected of advertising art while enlarging his own understanding of modern artistic expression.

As an artist and a teacher at the School of Design in Chicago, Mr. Kepes is admirably equipped to fuse the interest and understanding of popular and commercial arts. If Language of Vision deserves any criticism this could only be for its use of learned but tedious English. It is an outstandingly designed and illustrated book, beautifully printed and bound—one that would never divulge the rigors of wartime

PLANNING TO BUILD. By Thomas H. Creighton. Doubleday Doran.
228 pp. Illustrated. 5⅛ in. by 7¾ in. $2.50.

General Sales Offices:
420 North La Salle St.
Chicago 10. Illinois

AMERICAN SKEIN and FOUNDRY COMPANY

Patented New Clamping Ring Eliminates Bolt Holes Through Flashing—Provides Perfect Seal

New type of clamping ring eliminates bolt holes through flashing and provides space for sealing lower edge of flashing. Body, cast iron, painted or galvanized. Flashing ring clamped securely with four brass bolts.

These adjustable seepage floor drains for showers, receptors, tile floors and gutters are also used for terrazzo, mosaic, concrete and composition floors.

For water testing of flashing pan and connections and for plugging during building construction standard iron pipe plug can be screwed into drain body. "P" traps furnished when ordered. All Boosey Strainers tapped male and female standard iron pipe thread.

A Drain to Fit Every Type Installation

For other types and sizes of adjustable strainers see page 91 of Boosey Catalog No. 32. If you do not have detailed information, send for complete Boosey Catalog No. 32.

Our children have been frightened by formidable school-houses.

We need a new type of school.

Triple glazed sash helps keep the house warm.

You will be comfortable at lower room temperature with radiant heat, if you don't look at the thermometer.

Here is a popular primer for those who have looked forward to erecting a home, church, hospital or factory in postwar America. The author states on the jacket that "The boy who builds a doghouse is an architect," but this is no homespun volume devoted exclusively to either homes or doghouses. It is a comprehensive book, as all-inclusive as the title of the fourth chapter, "Shelter for Dogs" (Continued on page 158).
Shops . . . cafeterias . . . theaters . . . filling stations . . . these and many other types of businesses will bid for new customers after victory with brighter, more colorful fronts. Make sure your clients modernize with the facing material that’s ideal for the job. Specify porcelain enamel.

The wide range of colors in acid-resisting porcelain enamel permits you to use the smartest color schemes. And porcelain enamel stays attractive. It can’t rust or wear out. Its glassy finish is easy to clean, which cuts upkeep costs.

Light in weight, porcelain enamel is quickly and firmly installed. Neither atmospheric acids nor weather can stain or corrode it. It does not fade. And it withstands all but the severest abuse.

While Armco does not supply porcelain enameled panels, for your clients’ lasting satisfaction specify that the porcelain enamel be fused on ARMCO Enameling Iron. For years it has been the most widely used metal base for this exacting purpose. The American Rolling Mill Company, 1561 Curtis Street, Middletown, Ohio.

FOR EXPORT: THE ARMCO INTERNATIONAL CORPORATION

SPECIAL-PURPOSE SHEET STEELS
Shower bath convenience is part of modern living!

Include a Bathe-Rite shower cabinet in your "Homes of the Future!"

Health authorities endorse frequent shower bathing as a positive means for promoting better living. The convenience and pleasure of auxiliary shower facilities should be included in all plans for homes designed for modern living.

"Bathe-Rite" shower cabinets for post-war are designed in standardized sizes on the modulus of 4. Place "Bathe-Rite" in your new or remodeled home plans now. Suitable for all types of structures. Simple to install, durable in construction, attractive in styling. Illustrated catalogue sent you upon request. See our postwar catalogue in Sweets.

Bathe-Rite cabinets are available now in 32" x 32" and 30" x 30".

*Colovolt Cold Cathode Industrial Fixtures*

Here is the new Colovolt industrial fixture, one of a complete line of industrial and commercial "packaged" units. Equipped with the standard 93" Colovolt 10,000 hour lamp, Colovolt fixtures may be used singly or in continuous line lighting in multiples of 8 feet. Instantaneous starting, no flickering, guaranteed for 1 year except for failure due to breakage are extra advantages of the Colovolt Cold Cathode low voltage fluorescent lamp. The long life expectancy of Colovolt lamps may be realized even when constantly turned on and off, and pre-scheduled re-lamping, with no loss of production or time, is now possible with Colovolt installations.

Contact your electrical wholesaler or jobber, or write us for full details and prices.

General Luminescent Corporation
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Less heat-waste up the stack with Johnson Oil Burners

Johnson Boiler-Burner Units capture and use an exceptionally high percentage of the potential heat in every gallon of oil they burn ... a fact which directly affects fuel consumption and the price of heat.

If you're looking for real fuel economy (and who isn't) it will pay you to investigate the super-efficiency, the dependability and the fine engineering that have been built into Johnson Burners for 42 years.

There's a size and type that's exactly right for any heating problem, be it big or little, industrial or domestic. Ask us about these fine burners that use low-cost oil and get the most out of it. Some types of equipment are available right now.

May we tell you about it?

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Oyez! Oyez! Oyez!

K & M SPRAYED "LIMPET"
solves another acoustical problem

You are free to express the quiet dignity of a court room, or the beauty of a fashionable cocktail lounge, when you use K&M Sprayed "Limpet" Asbestos. This amazingly adaptable material can be sprayed on a ceiling to any thickness and will readily conform to the most intricate architectural design.

K&M Sprayed "Limpet" Asbestos not only absorbs sound by its porosity, but also reduces unwanted noise through diaphragmatic action. It is light, strong and extremely fire-resistant and can be painted repeatedly without destroying its effectiveness. For example, Limpet has a noise reduction coefficient of .70 for a 3/4" thickness... even after application of two coats of paint.

The low cost per unit of sound absorption makes K&M Sprayed "Limpet" Asbestos economical to use. Its low thermal conductivity (.31 at 75°F) is a Plus Value which is especially desirable for insulation reasons. Write for further details.

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Whether the Factory Buildings you are designing call for a whale of a lot of ventilation or selective heat and smoke removal

specify Swartwout AIRMOVER

The “open roof” method of industrial ventilation

This modern improvement in industrial ventilation is most flexible, providing complete large scale air movement where you need it, or serving restricted “hot spot” areas as desired. Uses no power; can be regulated to exhaust any portion or full exhaust as required.

AIRMOVER exhausts large quantities of heat, smoke and fumes rapidly through its short-air-travel, low-air-friction construction. It’s only 32" high, built in rectangular units that can be placed on any type roof. Standard units are 10' wide but can be made any width to meet special requirements. No special structural support needed—therefore low installation cost. Industrial buildings all over the country have been equipped with outstanding success. Write for information.

THE SWARTWOUT CO., 18511 EUCLID, CLEVELAND 12, OHIO

(Continued from page 154)

...and Doges,” would imply.

Mr. Creighton begins by warning his lay readers not to set out half-cocked in the imminent orgy of building. “Buildings stand for a long time,” he cautions. His fellow architects, who could guide them through this hectic period, he evidently holds in low esteem. He treats them, in fact, with the same humor and condescension that some critics reserve for chiropractors: “There’s nothing more impressive than an architect acting as interpreter of his own drawings to an earnest builder in the presence of an awed client. It’s one of the thrills in life you don’t want to miss, like hearing a singer just barely make high C.”

Scattered throughout the book are pungent observations on practically every personality and topic pertinent to building. Frank Lloyd Wright: “. . . his desire to have a house hug the ground and belong to it.” City Planning: “Short of complete government control which we are not going to have, short of revolution, which we are not going to have, there can be no complete planning. Paternalism and politics, profits and privileges combine to defeat any ideal fulfillment of whatever solution the city planners may suggest.”

By far the best thing about the book are the illustrations by the author (see cut). These are clever, clear and informative. Somewhat less successful are the rather labored and inappropriate attempts at humor. For example, in forecasting a building boom that will include churches as well as hospitals: “Our ex-soldiers will be disillusioned veterans of a great deal of ruthless killing. They won’t make good Sunday school teachers. But it is probable that more of them will go to church than did before they were inducted, and added to the increased church goers at home they will make more pews in the churches necessary.”

He dramatizes the need for more hospitals by telling us, “There is a story at Bellevue Hospital in New York City that the superintendent, on a tour of inspection, opened the door of a linen closet and found a patient asleep therein.”

Aside from this peculiar striving for laughs and a glib and inappropriate use of the word phoney, the author is serious enough and occasionally inspired. He looks forward triumphantly to a period of prolonged building activity ahead. . . “The building industry brags that it can employ two million people as soon as it is given the signal to go ahead without restriction. That’s an important factor as the armed services begin to unload. We are awakening to the fact, which should have been obvious long ago, that disrepair, overcrowding, ill health and poor education cost more money than their removal. And—don’t blush now—we are developing a social consciousness. We realize many things as social obligations that we would have considered pampering a decade ago. We haven’t gone through a long depression and fought two wars to learn nothing. Some of our new understanding of human needs will be translated into building in the next few years.”

CHARLOT MURALS IN GEORGIA. University of Georgia Press, Athens. 178 pp., 8 in. by 10¼ in. $6.00.

Today, in the art book field as well as in every other field of publishing, we have a writer’s market. The flood of books on painting techniques, on French impressionists, on all the claptrap of easel painting and its trimmings, has become almost a log-jam. And somehow (Continued on page 162)
Join the illustrations together and you get an idea of this tremendous structural steel job. Engineering ability plus plant flexibility made it possible to fabricate the steel, deliver the huge tonnage to the site, and have it erected on schedule.

The complete facilities of 3 separate structural fabricating plants are available on large buildings or even on smaller buildings, if time is the determining factor and the building must be erected super fast.

A quarter century engineering experience and complete facilities for erecting as well as fabricating the steel are available to you.

SEND YOUR PLANS AND SPECIFICATIONS TO US FOR QUOTATION.

Your structural steel projects will be intelligently handled here, from quotation to finished erection. Allied is qualified to head your list—to figure your plans and specifications on all steel structures.
New angles on Precision in Wood

These are "knees," supporting angles for a collapsible lifeboat. They are made of 15 or more 1/20"-thick oak veneers laminated with a waterproof, heatproof, moldproof CASCOPHEN synthetic resin glue. The shape of each knee is made within close tolerances and is slightly different from the others, to follow the curve of the hull.

These knees are light, completely durable, and practically unbreakable—with just enough "give" to withstand the twisting strains of a boat.

They are also economical. Wide sheets of veneer are used, and the resulting molded panels are simply sliced like a sausage, producing a number of identical members.

Remember these angles when you design the framework for a building—or a chair. There is no limit to size or shape. We will be glad to answer any questions about the glue or the gluing procedure.

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B EFORE LONG we will again take sheets of steel and fabricate them into movable steel partitions and wall lining by precision manufacturing methods. We call them Masterwalls . . . they are the result of over 30 years of research, experiment and just plain hard work. These partitions have been designed to be moved at the drop of a hat . . . without dirt or muss . . . without interruption of work routine . . . and with complete re-use of parts. They are economical, good looking and long lasting. That is why we like to think of them as the premier movable steel partition.

But to make building interiors flexible you need more than just a partition that can be moved around . . . you need somebody to move it. That is the reason for Hauserman Service . . . floor plans changed overnight by the largest, best trained, best equipped partition field service organization in the country.

So, remember, when you want to “engineer” flexibility into building interiors specify Hauserman and you specify the best. Masterwall Catalog 45 tells the complete story. Why not write for it?
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WHEN the war is over, or when present restrictions are relaxed, Lawson Bathroom Cabinets will again maintain their position of leadership, backed by 129 years of manufacturing experience.

Lawson Bathroom Cabinets definitely set the tempo for smart styling, beauty and sound construction. Their high reputation for utility and high value is nation-wide!

The Lawson line has always been so complete and the range of prices so wide that the right Cabinet could easily be found for every type of building, to fit every budget. And each Cabinet in every price range was made to the same high standard of quality!

You may expect great things of the Lawson line to come, for it will combine the traditions of the past with the finest developments of the future!

WORLD'S LARGEST BUILDERS OF BATHROOM CABINETS

THE F. H. LAWSON CO.
CINCINNATI 4, OHIO

presentation of the thin, clear stream of really vital art gets lost somewhere in the clutter.

If art has any function at all, it must be as an embellishment to life—much of which goes on in houses, in buildings, in architecture. But in the art world and the book world and even the architectural world, this fundamental concept of art has been lost sight of. There are pages of dilettantism to confuse an eager public, but there is little basic attempt to show people how to make their surroundings more pleasant, more livable, happier.

A recent book from an obscure press (which we understand nearly went broke printing this fine job of layout and typography), Charlot Murals in Georgia, is a scientific presentation of fresco and mural technique as well as a chatty story of the vicissitudes of getting such work done in the deep south. Charlot, whose heart's blood has gone into the book, was one of the stimulating forces in the great Mexican renaissance of mural art 15 or so years ago, when the rich, vital concepts of Orozco, Rivera, Siqueiros and others poured out onto the walls of the Ministry of Education and elsewhere, under the enlightened patronage of the liberal Vasconcelos, Minister of Education. Perhaps not as great a muralist as some of his colleagues in Mexico, Frenchman Charlot has a greater intellectual understanding of the true problems of mural painting as related to architecture. And although some of his figures (blown up in large detail on the pages of the book) bear too great a resemblance to Disney's, his effort to bring painting down to a common, understandable level even at the expense of borrowing from another vital art form of today, the movies, is commendable.

If students avoid copying Charlot's murals and devoutly study his foreword explaining the esthetics of mural painting, as well as the wealth of excellent plates giving the progress of mural technique, details of painting, etc., this book will be an invaluable guide to art schools and even to the great mass of American painters who have recently attempted murals without so deep an understanding of its problems.


On the other side of the esthetic fence we find a group of books just released by Watson-Guptill in their "how-to-do-it" series. The one that will probably make the biggest splash is "Masks," by W. T. Benda. For, to quote the foreword, "No devil-dancer, with any sort of respect for himself, would ever have dreamed of running through his routine with a naked face"—there are a lot of people looking for this sort of escapism from reality, and "masks are magic."

Strangely enough, although this book stems from an entirely different social concept from that of Charlot's broad approach, there are curious similarities between some of the plates of masks and some of the figures in Charlot's murals. There is some good technical stuff, too, on how to make masks; but let us hope the (Continued on page 166)
Press a button, count 60 and the side of this building has risen out of sight.

Open quicker. Open wider. These demands are increasing for modern industrial buildings. The Robertson Vertical Lift Door can be as wide and as high as a whole wall. But, regardless of size, the door opens in a matter of seconds. The door shown opens in 60 seconds.

The leaves nest above the truss, within a special facade, leaving maximum ceiling and floor space unobstructed. Architectural features of the door are completely variable. Any skin material may be used.

The engineering skill which originated this door under the name Ferguson, has been combined with Robertson engineering and management. Robertson engineers will be glad to co-operate in adapting the Door to your requirements. A Robertson representative can furnish all data, or you may write for Robertson Door literature.

**Quick Facts**

- Any height. Any width. Can be opened in seconds.
- Maximum floor and ceiling area of building retained; overhead equipment—lights, monorail, cranes, etc.—can come up to door.
- Not obstructed by sand or snowdrifts.
- Fully counterbalanced; electrically or manually operated.
- All leaves reach peak at same time. May be stopped at any point, saving heat. Safety device available to halt descent if door touches on object.
- Door may be divided into independent sections, still leaving an unobstructed opening.
- Lowest leaf can conform to ground slope.
- Skin may be of various materials to suit architectural design: fenestration, sliding pilot doors, heat and sound insulation available.
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Scientists of U. S. Rubber Company fathered this newcomer...to provide better, safer wiring for countless new electrical installations...in homes and factories, on farms, in communications services.

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Watch this lusty baby grow. You'll be hearing a lot about Nubun, and his success in the busy peaceful days ahead.

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A FEW MINUTES' observation of Mac "in operation" around the Paranite plants will give you the answer. For **maximum** is this hard-working man's favorite adjective—and he has an inborn ability to make things operate with maximum efficiency, at maximum speed; a constant determination to produce wire and cable of maximum quality. That's why we changed the spelling to **M-A-C-S-I-M-U-M**!

The facts behind this word also spell many good reasons why industrial engineers, architects, and electrical contractors—the men who really know—specify Paranite so consistently for dependable wiring. They have learned from experience that there is a "Mac-mum" margin of safety in this fine wire and cable—accurately drawn to size under most careful supervision—subjected to repeated physical and electrical tests during fabrication—insulated to meet requirements far above average specifications—packed for shipping only after rigid final inspection.

**If it's PARANITE it's right!**

**PARANITE WIRE AND CABLE**  
Division of **ESSEX WIRE CORPORATION**  
Fort Wayne 6, Indiana

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reader does not get any delusions as to the real place of mask-making in our unmyriastic, unesoteric modern world of art. Even Benda himself says on page 41, "At any rate (masks) made you think of the Spanish Inquisition, of the Ku Klux Klan, or of our racketeers . . ." But there is a great probability that people will gobble up a book like this; and it is to be regretted that all the technical knowledge and understanding of this subject, as given in this book, isn't tied in somehow to its real place in the art world. There is just as good stuff of this kind in a lot of department store windows—sculpturally, even better, sometimes—and it isn't nearly so recherché.

Taubes' book on oil painting techniques has a more modest approach: "What in the world," questions the foreword, "is there to say on the subject which you have not already said?"

To tell the truth, there is plenty that has not been said, for this is an age of experiment in new materials and techniques, in oil painting as well as architecture. But Taubes hasn't gone in for any of the tricks being tried out by modern painters, such as mixing sand with paint for texture. This is a simple, elementary book for beginners, as pedestrian as such books must be. In fact, one chapter is even called, "Painting A Portrait Step-by-Step."

The book on watercolors purports to deal with "the making or painting of watercolor pictures themselves," but actually it is less concerned with technical information than with presenting a sort of hodgepodge of reproductions, biographical data on the painters, and in some cases their own rather interesting comments on how they work.


This new and revised edition of one of a series of "Practical Books for Home Study and Classroom," is also a bible for the heating or air conditioning engineer. Full of meaty material on types of insulation materials, methods of installation, economics and efficiencies of insulation, jam-packed with tables of transmission coefficients, condensation information, acoustical data, etc., the book is well documented too with detail drawings.

As the author points out, this is not a new subject, but one that has grown tremendously during the last 20-25 years due to (a) commercial ballyhoo on the part of large manufacturers and (b) increasing need for new methods of insulation in newly developed mechanical refrigeration. And although the writer, now Technical Secretary of the Insulation Board Institute, has served formerly under two of the biggest insulation material manufacturers, he keeps the true scientist's objectivity in presenting the facts. He gives a handy list of all the commercial materials on the market, with their advantages "according to the manufacturer." He keeps away from the touchy point of relative evaluation of these various products.

There are not many changes in this new edition over the 1941 edition. Only five new materials have been added to the list. And there is a revision of the transmission coefficients and tables in Chapter V, brought up to date and reprinted from the 1944 Heating, Ventilating & Air Conditioning Guide of the American Society of Heating & Ventilating Engineers. On page 167 there is a new table showing approximate temperature differentials between breathing level and ceiling.
This NEW BULLETIN is a preview of the most important developments in Boiler Engineering.

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For any boiler problem involving low or high pressures write Titusville.

JUNE 1945
Only steel can provide steel's permanence

The economical permanence of steel-framed buildings cannot be questioned. Stran-Steel has added mass-production economy to home and industrial building. It has taken its place as a universal building material of unlimited adaptability. Whether used in single residences, multiple dwellings, apartment houses or commercial structures, Stran-Steel has brought new efficiency and new flexibility to building design.

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THE HILTON HOTEL

GUEST COMFORT still comes first. Hotels of today and tomorrow are and will be designed, built and operated to insure that comfort.

This explains why Modine Convection Heating, providing even room temperatures day and night...in mild or severe weather...is being specified for so many modern hotels now on the drafting boards.

Quickly responsive to automatic or manual temperature control, Modine Conectors warm up rooms without delay. The compact copper heating unit circulates heated air rapidly and evenly. No uncomfortable overheating. No necessity to open windows and waste fuel. Individual damper control enables guests to modulate temperatures for personal comfort.

Modine Copper Conectors are distinctly different from unsightly, space-wasting conventional radiators. Attractive in appearance but remarkably unobtrusive...Modine Conectors blend harmoniously with room decoration and furnishings of any period. Recessed in the wall or fully exposed, they conserve valuable floor space.

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Look in your phone book for Modine representative's name — "Where to Buy It" Section.

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JUNE 1945

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This explains why Modine Convection Heating, providing even room temperatures day and night...in mild or severe weather...is being specified for so many modern hotels now on the drafting boards.

Quickly responsive to automatic or manual temperature control, Modine Conectors warm up rooms without delay. The compact copper heating unit circulates heated air rapidly and evenly. No uncomfortable overheating. No necessity to open windows and waste fuel. Individual damper control enables guests to modulate temperatures for personal comfort.

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Rationing, price and wage controls have held prices down ... but the next step is up to you!

The silliest man (or woman) in America today is the one who thinks he’s ahead of the game when he finds a way around the rules of rationing.

Why is he silly?
Because every time you pay more than ceiling prices, every time you buy rationed goods without stamps, you are breaking down the very controls that have kept your cost of living lower in this war than in World War I.

What else can you do to keep prices down? Tuck away every dollar you can get your hands on. Put it safely away into War Bonds, life insurance, banks.

Why? With more money in people’s pockets than goods to spend it on—every unnecessary thing you buy tends to push prices up.

Save. Don’t spend. It’s common sense for today—safety for tomorrow.

A United States War message prepared by the War Advertising Council; approved by the Office of War Information; and contributed by this magazine in cooperation with the Magazine Publishers of America.
71% of Postwar Home Buyers Will Be Able to Afford Electric Kitchens!

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... Planned, Functional Kitchens Are Capturing Mrs. America's Heart!

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Electric Kitchen Inquiries Pour In!
Proof of the interest in, and consumer preference for, the planned electric kitchen is seen in the thousands of requests each month for the Hotpoint Planning Guide "Your Next Kitchen." Many prospects, inspired by Hotpoint's hard-hitting advertising campaign, are purchasing war bonds now for postwar building. The response has been tremendous and the campaign is continuing.

Plan Now for Profitable Postwar Building
A pent-up purchasing power of over a hundred billion dollars will be available in America when Victory comes. Your new home market is unlimited... plan now to design and build homes with modern, functional kitchens. You'll find they speed turnover and reduce financial costs in speculative building. Another profitable market is the remodeling of homes... still another is the replacing of old, worn appliances with a complete all-electric kitchen.

Write Hotpoint Today
Hotpoint's expert staff of kitchen designers is ready to offer you suggestions on any kitchen planning or construction problems. Write for details of the "Hotpoint Kitchen Planning Service."

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REFRIGERATORS • RANGES • WATER HEATERS • HOME FREEZERS • WASHERS AND IRONERS • CLOTHES DRYERS • DISHWASHERS • GARBAGE DISPOSALS • CABINET-SINK • STEEL CABINETS

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JUNE 1945
The City Garden is a design trend in contemporary architecture aimed at better living conditions in crowded areas. It satisfies the new design approach for a bird's-eye perspective of future urban structures.

The hanging gardens of Babylon built by Nebuchadnezzar to imitate the hills of Persis were covered with pines, cypresses and cedars.

Roof design is needed to create utilitarian and recreational uses for acres of wasted roof and terrace space in our crowded cities.

The trend toward wedging nature and urban architecture by landscaping terraces, courts and roofs, is good art as well as sound business. Progressive industrialists find recreational facilities on commercial rooftops increase working efficiency. Realtors get better rentals from apartments with terraces and garden courts. Cooperative backyard gardens make urban living more enjoyable and landscaped areas in low cost housing pay dividends to the community in healthier citizens.

Landscaping urban structures is not new but part of an old urge to see green foliage and watch it grow. Nebuchadnezzar, to satisfy such a desire, built the hanging gardens of Babylon for his favorite, Amyrtis, designed in imitation of the steep hillsides of Persis, her native country. The gardens were supported on arches three stories (about 75 ft.) above the palace level and thus—as the historians tell us—broke the monotony of the featureless, level country.

The Greeks had a word—"hypaethral," which means open to the sun—for their own type of solar house. The Greeks, and later the Romans, built their houses around open courts which gave them sun, foliage and privacy. Roman architects also awed their public by landscaping such buildings as Hadrian's mausoleum in Rome. A new word for urban gardens is "roofscape.

The modern classic in hanging gardens, Rockefeller Center, which covers two and a quarter acres, is claimed to be five times as big as ancient Babylon's. Ralph Hancock, landscape architect who designed the gardens, says, "The days of penthouse gardening in boxes are over, and miles and miles of roof space in every metropolis remain to be reclaimed by landscape gardening."

There has been no large scale development to justify this prophecy, largely because few operators could afford the expense. There has been, however, a steady increase in the number of urban gardens on a more modest scale.

A bird's eye view of any city reveals the poor design of roofs and the immeasurable acreage of wasted roof space. Because so little has been done in the past, the postwar development of this unused space is virtually unlimited. The stylistic Mansard and Colonial (Continued on page 174)
Schools equipped with Lupton Metal Windows have ample natural ventilation, easily controlled to eliminate drafts. Lupton Metal Windows assure abundant day-lighting... combine weathertightness with easy operation and simplicity of design. For over 40 years the name Lupton has been the distinguishing mark for the highest grade construction in Metal Windows.

See our Catalog of Post War Types and Sizes in Sweet's for 1945, or write today for reprint.

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E. Allegheny Ave. at Tulip St., Philadelphia 34, Pa.
Member of the Metal Window Institute
EARTH will last indefinitely if properly fertilized twice a year, but it pays to install the best top soil to offset difficulties in plant propagation. Good drainage is essential for satisfactory results. In large gardens drain tile is used in addition to the sub soil fill. The picture above shows one of the gardens in Rockefeller Center.

BACKYARD GARDENS prevent neighborhood decay and protect rentals. Cooperative effort by property owners creates a better living environment for tenants. Gardens carefully planned with hardy trees, shrubs and grass are not prohibitive in cost or upkeep.
Why FREIGHT ELEVATORS are important!

Behind this busy scene, freight elevators are constantly on the job... keeping supplies and even the trucks themselves moving on schedule... without bottlenecks... without confusion.

For intensive service, the elevators should be high speed, automatic in operation and provided with power operated doors. Such equipment will compensate for some of the time lost in loading and unloading operations.

If conditions require, freight elevators can be dispatched to predetermined floors to suit any cycle of operation. Also, they do not necessarily require regular attendants.

Your nearest Otis representative is now available to assist you and your Architect in making preliminary elevator plans and studies. For the finest in vertical transportation tomorrow, call your Otis representative TODAY!

ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES

JUNE 1945
Here is a line of casement units with full 28" sash openings. Heights run from 2' - 4½" up to 4' - 5½".

These attractive stock-size units are helpful in solving many problems of design and proportion.

Pella special design hinges provide an extra long 3½" plate for screwing into the solid wood top and bottom sash rails. Butt plate is riveted to the welded steel inner frame of Pella casement units. Hinge extends to allow washing from inside. Tamper-proof when closed. A special mortise and tenon sash joint gives greater gluing surfaces. Joints are also steel-dowelled. Sash is made from genuine White Pine full 1¾" square and toxic-treated. Pre-war installations have demonstrated these Pella casements to be thoroughly practical on all counts.

PELLA 3-LIGHT WIDE SASH easily supports weight of 300 lb. man without springing sash "out-of-true."

FREE FOR YOUR FILE!
22 separate pages of scaled Pella casement details for all types of installations. Send for your FREE set today. Write: ROLSCREEN COMPANY, Dept. A-65, Pella, la.

DUAL GLAZING—a single panel type that mounts on inside of sash. Inconspicuous. Easily removed for cleaning.

ROLSCREENS—the original roller-type inside screens. The ultimate in screen efficiency and convenience.

ROOF GARDEN soil depth for annuals and perennials should not be less than 10 to 12 in., for shrubs not less than 20 to 24 in. and for trees not less than 3 ft.

consideration. 1) Trees, plants and shrubs must be selected to meet the unusual conditions of high wind and dryness. 2) The roof surface must be specially prepared to receive the earth fill. 3) The roof must be designed, or in the case of an existing building investigated, for the earth load.

High wind is the roof garden's greatest enemy. Most rooftops are exposed and offer little protection. Walls and fences are one solution. They protect plants from wind but are undesirable in many instances because they cut off the view. Low planting is another possible solution to the wind problem.

Arbor vitae, cedars, cypress, boxwood (except for English), maples and pines do not thrive in rooftop gardens. Bitter experience with New York winters has led skyscraper garden planners to narrow their selection of usable trees. The willow and the flowering crab-apple rank high on the approved list of hardy trees. Other trees which have been used and found satisfactory are hawthorne, Norway maple, Oriental plane, honey locust and elm. The Douglas fir is one of the hardiest evergreens for rooftop gardens. The size of the trees planted will depend partly on the size of the service elevator or the ability to hoist them up the side of the building.

(Continued on page 180)
A Forward Step to Increased Shoe Sales

Any step that increases sales is a step in the right direction. That's why more and more shoe retailers are including air conditioning in their modernization and expansion plans. Cool shopping comfort insures proper fitting—meaning satisfied customers who return to buy again and again. "Packaged" Air Conditioning, pioneered by Chrysler Airtemp, provides clean, cool, properly dehumidified and gently circulated air to all areas throughout the store. Flexible and easy to install, these dependable, trouble-free and time-tested Chrysler Airtemp units, with the hermetically sealed compressors, can be used singly or in multiple. Chrysler Airtemp air conditioners can be installed with or without a duct system. Specify "packaged" cooling to help your clients add summer profits. • Airtemp Division of Chrysler Corporation, Dayton 1, Ohio.


CHRYSLER AIRTEMP
HEATING • COOLING • REFRIGERATION
Dear Mr. Aspinall:

I thought you would be interested in knowing that 31 years ago the Claypool Hotel was equipped throughout with Sloan Valves. They have given entire satisfaction and to-day are in just as good condition as they were when installed. I cannot recommend too highly the performance of these valves.

With seasons greetings and every good wish, I am

Cordially yours,

THADDBUS EV SNODGRASS
EXECUTIVE OFFICER
CLAYPOOL HOTEL

"The Doorway to Hoosier Hospitality" is a slogan difficult for any hotel to live up to in these strenuous days of war. But the Claypool is carrying on traditionally—backed by the performance of such mechanical equipment as Sloan Flush Valves.

Even after serving faithfully for 31 years, Mr. Snodgrass reports that the "Sloan Flush Valves of the Claypool are just as good as when installed."

With unequalled dependability of operation and with maintenance costs as low as ¼ of 1c per Valve per year, your choice of Sloan will assure you of the best in Flush Valves.

Remember—there are more Sloan Flush Valves sold than all other makes combined.

SLOAN VALVE COMPANY • CHICAGO 24, ILLINOIS

The Sloan Valve Company has been awarded the Army-Navy "E" three times for excellence in War production.
How the roof space of a group of office buildings might be put to functionally cooperative use is suggested in this sketch of a business "neighborhood" in 194X, which has been planned by Oscar Stonorov and Louis I. Kahn, prominent Philadelphia architects.

Limited roof areas of the individual office buildings are planned so that their uses are complementary to each other. On the tallest structure is placed a sub-post office with facilities to land fast mail helicopter planes. Another roof accommodates a garden restaurant, and a third features midday recreational facilities for the neighborhood...

Thus, variety of ground use finds its corollary in intelligent utilization of roof area, which if served by special express elevators, would establish new commercial values for the roofs of office buildings.

This project extends the pattern of roof functionalism as it has already been developed at New York's famed Rockefeller Center, where Barrett Roofs serve a variety of purposes—from observation decks to rooftop gardens. Here as elsewhere, Barrett Roofs have demonstrated their complete adaptability to new building techniques. These coal-tar pitch and felt roofs offer the maximum in dependable, long-lasting protection. Standard since 1854 for flat roof construction, they are destined to play an even greater part in post-war building.
For hedge planting the evergreen Asiatic yew (taxus), which comes in upright, spreading and bushy varieties, has been found most satisfactory. Forsythia and lilacs can be grown if their location is not exposed to the wind. Privet, the non-flowering variety, is probably the most widely used of any shrub for hedge purposes.

Vines are widely used in rooftop gardening because they cover large vertical areas and are used as a background for other planting. The most satisfactory results have been obtained with wistaria, bittersweet, Chinese lace vine, honeysuckle and morning glory. Ivy, with the exception of the climbing Boston variety, must be replaced after severe winters. And the Boston ivy has the disadvantage that it defoliates in winter.

For general planting bulbs and root plants are uniformly successful, although it is reported that high winds sometimes whip the tops off tulip plants. Petunias, heliotrope, English daisy and pansies flourish as bedding plants up to July, when most gardens exposed to the hot sun, without protection, begin to wither. Roof gardens must be watered daily because of the double drying effect of wind and sun on the shallow beds of soil.

Insects find rooftop garden foliage just as appetizing as any other type and must be controlled by spraying. One gardener reports a full catalogue of garden insects, including the bizarre praying mantis.

Soot, until smoke abatement practices are enforced, must be endured. It makes foliage look dull and lifeless. In Rockefeller Center, where the gardens are kept with meticulous care, the foliage is "laundered" with high pressure sprays. Soot also collects on the soil and forms a hard cake which must be broken up by frequent cultivation.

**STRUCTURAL CONSIDERATIONS**

In roof and terrace gardening it pays to use the best composted top soil to offset the difficulties involved in plant propagation. In large gardens it is worth while to get the earth in place before the building is finished. Soil does not need replacement if properly nourished with fertilizers about twice a year. The soil placed in the gardens of the British and French buildings in Rockefeller Center in 1933 is still there.

Landscaping need not be elaborate or prohibitive in upkeep. Pleasant outdoor-living effects can be achieved on roofs and terraces with a minimum of (Continued on page 184)
HOW A CORNER OF THE GARAGE BECAME A Luxurious Bath

There's post-war significance—for new building as well as remodeling—in the story of Weisway adaptability which these pictures tell. They show how architects will be able to meet the insistent and growing demand for more bath facilities in homes of every size.

Added baths in limited floor space—odd corners made into prized comfort spots—are practical and readily achieved possibilities through the use of Weisway Cabinet Showers. Striking proof of this is given in the remodeling job illustrated here, where the necessary space was found in the garage, which adjoined the existing bath room.

Besides saving space, leakproof Weisways afford fullest enjoyment of shower bathing. As a result of war-time experiences many thousands—yes, millions—of men and women have come to prefer this modern way to bathe—in clean, running water.

When restrictions are lifted the time-tested Weisway line will offer a range of models suitable for homes of every size and price class. In the meantime Models "V" and "V deluxe" are available to meet immediate needs.

HENRY WEIS MFG. CO., INC.
602 OAK STREET, ELKHART, IND.

Weisway CABINET SHOWERS
Flush . . Streamlined Surfaces!

GREATER OPPORTUNITY FOR UNUSUAL DESIGN!

MORE ATTRACTIVE Doors . . . Cupboards . . . Secret Panels!

Many outstanding buildings and thousands of better residences throughout the world reveal the streamlined distinction and finer artistic effects made possible by the use of SOSS INVISIBLE HINGES. These hinges are a significant mark of building progress. Definitely they are the modern hinge. A hinge, itself, is never sightly—it is strictly a thing of utility, not of ornamentation—therefore it should remain out of sight. These quiet, smoothly operating Soss hinges are INVISIBLE HINGES. They permit the architect to carry out a selective motif without having unsightly, broken surfaces with which to contend. And the absence of any visible protruding metal allows separate parts to blend into each other like one piece . . . one unit.

Write today for the Soss "Blue Prin" Catalog. It will be sent to you free on request.

SOSS MANUFACTURING COMPANY, 21767 HOOVER ROAD, DETROIT 13, MICHIGAN
**Why is \textit{A} ready for use...**

**while \textit{B} is incomplete?**

\begin{itemize}
  \item Consider two buildings of identical appearance. Plans for both were begun at the same time. Yet one is ready for use while the other still is days — perhaps weeks — from completion. Why?
  \item Because, in the initial stages of design of building \textit{A}, the architect supplemented the electrical know-how of his engineer and specification writer with the specialized knowledge of "John Watts" — a qualified electrical contractor.
  \item To expedite the construction of every building you design, check with "John Watts" early. His organization has the latest product information and the installation know-how — plus on-the-spot knowledge of local codes, power supply, and working conditions — to give your electrical people valuable help on plans for wiring, lighting, signaling, and power-driven apparatus — for industrial, commercial, or residential buildings.
  \item Well informed electrical contractors — the "John Watts" everywhere — obtain equipment and supplies via Graybar. This sound practice means you can count on them for the newest and best in "everything electrical".
\end{itemize}

\textbf{Graybar Electric Company, Graybar Building, New York 17, N. Y.}

\textbf{IN OVER 80 PRINCIPAL CITIES}
planting in boxes combined with permanent architectural features. Sun shelters, garden-type paving, decorative walls and fences can form a low-upkeep setting for shrub planting that requires little care. Gardening in boxes is less expensive because no special preparation of the roof surface is necessary.

Drainage in roof gardens and garden box culture is extremely important. Without adequate drainage, conditions are created which approximate those of a small swamp. Earth should never be placed in direct contact with unprepared roof surfaces. A layer of cinders or brickbats should be installed, 2 in. for earth up to 12 in. in depth, 4 in. for soil up to 2 ft. in depth, and 6 in. for soil 3 ft. deep. In larger gardens rows of agricultural drain tile are placed every 25 ft. For the same reasons drainage holes and cinders should be provided in garden boxes. Slope should be provided in the roof deck so that water will run off to drains.

The waterproofing roof surface for earth installation consists of a built-up waterproof membrane placed on the roof deck construction. This membrane is then covered with a protective coat of 2 in. thick concrete. At vertical surfaces, membrane waterproofing and concrete should continue 6 in. above the soil line. Counterflashing should cover the joint between wall and roof waterproofing.

The concrete protection for the waterproof membrane where earth comes in contact with a vertical surface can be reduced to a cement plaster coat 1 in. thick. In some instances 4 in. of brick is installed to protect the membrane. The cement coat or brick is installed to keep the membrane from being pierced by ordinary digging operations which might cause costly leaks. For play and walk areas a wearing surface of brick, tile, canvas or impregnated fibre board should be used.

Structures in all cases must be designed for a wet earth load. Dry compacted earth weighs 90 to 100 lbs. per cu. ft. Wet compacted earth weighs 100 to 115 lbs. per cu. ft. Where garden boxes are used, the concentrated load of the boxes must be figured in the roof design.

An indication of the national interest in plants and cut flowers is the estimated $3 million paid each year to florists. To date little attempt has been made to turn this plant interest into architectural channels. Urban gardening offers a wide field for its exploitation.

FLOWERING SHRUBS, trees and grass, in city gardens give maximum results and require less attention than flowers. The cultivation of annual and perennial flowers adds to gardening labor and cost.
Now you can specify

"One Piece"
Copper or Brass
Pipe Lines

WITH

Silbraz Joints

WITH THE "SILVER RINGS"

Silbraz Joints—the modern threadless method of joining copper and brass pipe and tubing—provide the nearest approach to the ideal of a one-piece pipe line yet attained.

An insert of silver brazing alloy incorporated in the bore of the fitting or valve is melted by the heat of the oxyacetylene torch and flows out between the pipe wall and bore of the fitting. The brazing alloy which is free flowing at 1300° F readily penetrates the lap area between the pipe and fitting, providing a strong, tight joint.

The result is, in effect, a one-piece pipe line that withstands excessive vibration—even at high temperatures—and the joints exceed the strength of the pipe and fitting.

Bronze fittings and valves for making Silbraz Joints in plumbing and heating lines, gas, fuel and process lines are produced by leading manufacturers and are available in all important centers.

Specify Silbraz Joints to insure fullest satisfaction wherever the plans call for copper or brass pipe or tubing.

*Registered U. S. Pat. Off.

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The educational needs of any community are ever-changing. And they're unpredictable, for you can never tell when it may become desirable to expand or subdivide schoolroom units or to convert a school from one type to another... as from grade school to junior high, or academic to vocational.

Now here at last is a practical, proved way to give schools that needed flexibility... money-saving flexibility which allows quick alteration in the size, arrangement, or type of schoolrooms!

Three Johns-Manville materials are united to form Unit Construction for Schools—all under one specification... one manufacturer's responsibility:

1. Movable Walls... 100% salvageable, quickly erected or relocated.
2. Acoustical Ceilings... eliminate distracting noise, increase class efficiency.
3. Resilient Floors... quiet, easy to walk on, easy to clean.

But what if a school is never altered or converted? Even so, these J-M materials are an integral part of the structure and give long-enduring satisfaction in many other ways. For instance, all the constituent parts are durable... hard to mar... shock-proof... easier and more economical to maintain. And their attractiveness inspires pride... contributes an atmosphere of cheerfulness and appealing beauty.

Write for further information and details on this important advance in school construction. Address: Johns-Manville, 22 East 40th St., New York 16, N. Y.
Here are the three elements combined to form UNIT CONSTRUCTION FOR SCHOOLS:

**Movable Walls** — The keystone of flexibility in Unit Construction is the J-M Transite Wall. It can be disassembled and relocated as educational needs require. One-unit rooms, for instance, can be speedily converted into two-unit rooms, or vice versa. Made of fireproof asbestos-cement, practically indestructible materials, the movable panels are used not only to form the rigid, double-faced partitions 4" in thickness, but also to finish the interior of the outside walls as well.

**Acoustical Ceilings** — Important factor in helping to overcome the handicap of distracting noise, Johns-Manville Acoustical Ceilings are beneficial both to teacher and student alike. They give the desired degree of quiet for effective teaching, eliminate frequent causes of nervousness, and are proved aids to concentration. An exclusive J-M patented construction system permits interchangeability of flush-type fluorescent lighting and acoustical ceiling units.

**Colorful, Resilient Floors** — J-M Asphalt Tile Flooring completes the Unit Construction System. Made of asbestos and asphalt, the units will withstand the kind of hard wear and abuse that must be expected in any school building. Not only are they durable, J-M Asphalt Tile

Floors are pleasantly comfortable and quiet underfoot, thereby reducing the disturbing effects of noisy footsteps in classrooms, corridors, gymnasiums, etc. Individual units permit easy alterations or repairs. Made in a wide variety of plain and marbleized colors.
End the Triple Menace

with THREADLESS, SILBRAZ* JOINTS

Shock! Vibration! Corrosion! Yes, a Silbraz Joint made with Walseal® valves, fittings and flanges “has what it takes” to overcome this triple threat to copper tube (iron pipe size) and brass pipe lines—and for keeps.

Why? Because patented Walseal valves, fittings and flanges get their extra stamina from a ring of silver brazing alloy built right into each port... an alloy that when heated with an oxyacetylene torch flows out between the pipe wall and the fitting, making a joint that is stronger than the tube or pipe itself.

In thousands of installations, these Walseal products have proved beyond dispute that they make a “one piece pipe line”... a pipe line that does not creep or pull apart under any shock, vibration or temperature to which the copper tube or brass pipe can be safely subjected.

Write today to Dept. 84 for Catalog 42 giving complete data on Walseal products, as well as on the entire Walworth line.

Make it a “one-piece pipe line” with WALSEAL

WALWORTH
valves and fittings

60 EAST 42nd STREET, NEW YORK 17, N. Y.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

Soft and safe as a powder puff—but too tough for heat or cold

Not irritating to the skin or harmful to clothing, Cotton Insulation is simplicity itself to install. It's an easy one-man job. Just unroll it like a rug.

Though snowy light in weight and soft as down, it lasts a lifetime and has never been known to pack or settle after installation. Government tests have established Cotton Insulation as superior to any other known material—superior in lightness, in resiliency, and in insulating efficiency.

Not alone do cotton's amazing qualities make it the insulation of tomorrow—its easy adaptability to existing structures makes it the insulation of TODAY. For full information regarding cotton insulation, just send for the book, "COTTON INSULATION"
CORNER INSTALLATION OF
ANDERSEN COMPLETE WOOD WINDOW UNITS

On sultry nights, this bedroom picks up the smallest breeze from two directions with its wide Windowall of Andersen Casements. And at the opposite end of the year this same Windowall is weathertight—insulated against the most disagreeable weather.

Yes, Andersen Windowalls truly function both as windows and as walls, permitting the designer of future homes an increased opportunity for more and larger windows.

This bedroom Windowall is in a many-windowed modern home designed for his own use by Architect E. Richard Cone, St. Paul, Minnesota.

Andersen Casement Unit No. 10458, Sash opening size, 8'1" and Unit No. 4428, Sash opening size, 3'1-3/4", both units with horizontal muntin bars. For additional details, consult Sweet's Catalog, or write Andersen Corporation.

Andersen Corporation
BAYPORT, MINNESOTA
Conservation of Space
Efficiency in Service
both depend on

The installation of STREAMLINE Copper Pipe and Solder Type Fittings under normal water conditions assures many, many years of trouble-free, efficient service at low cost. Copper and bronze do not rust. STREAMLINE Pipe is made from pure copper. STREAMLINE Fittings are manufactured in copper and bronze.

Conservation of space is a very important consideration, especially in large public buildings and hotels. The more space that can be utilized, the more income produced. Since STREAMLINE Fittings are not connected by flaring or threading, no room is required for wrench play to tighten the Fittings into place, nor need any allowance be made for protruding valve stems, which on threaded pipe, must be swung in an arc to secure. Valves and fittings are installed in a minimum of space, they are located exactly where required, and soldered.

Copper Pipe loses less heat by radiation than ferrous piping, particularly if the surface is kept polished, although copper itself is a very rapid conductor of heat. Therefore, it naturally follows that there is considerably less heat loss when the heated element, water or steam, is being conveyed from the point of generation to the points of distribution through copper pipe of uniform, unclogged, internal conducting area.

Plan on specifying and installing STREAMLINE Copper Pipe for your postwar construction—or for replacement.

STREAMLINE
PIPE AND FITTINGS DIVISION
MUELLER BRASS CO.
PORT HURON, MICHIGAN
Employes need fresh, cool water, too

Hot and thirsty, the cowboy welcomes a deep drink from a clean, cool mountain stream.

Your war-busy employes welcome a fresh, cool drink from a Westinghouse Water Cooler. By locating coolers convenient to work areas you can cut time losses.

Westinghouse offers various models of highly efficient, long-life, easy-to-maintain Water Coolers. Westinghouse Explosion-proof Coolers are specifically designed for use in oil refineries, synthetic rubber plants or wherever a spark is a hazard.

The Westinghouse hermetically-sealed refrigeration system is the secret of the cooler's dependable service and low operating cost.

Ask your Westinghouse supplier about models available now.

Inventions may change source of domestic energy and revolutionize the sound recording industry.

LIQUID HEAT is a revolutionary idea recently developed which will possibly change domestic heating practice. The main theme is that the home should be equipped with one source of power. Instead of independent power plants in refrigerators, boilers, cooking ranges, water heaters and appliances the home heating plant would be similar to that of an automobile where cigar lighter, heater, battery, lights, horn, etc., all operate from a single power source.

The basis of the new system is a chemical known as tetra-cresyl silicate which will absorb heat up to 817°F. when circulated in residential boilers of the present type at atmospheric pressure. This contrasts with water which becomes vapor at 212°F. and shows the possibilities in the liquid as a medium for conveying heat. It is claimed that the heated fluid—a secret formula—can be used for heating water, cooking, toasters and flat-irons. In fact, it can be used in any appliance that utilizes heat including steam and hot water boilers.

The problem of high temperatures in piping was solved with insulation of fiber glass 2 in. thick and with special cement joints. In fabrication, slip joint fittings were found most satisfactory, brazed at 1,300°F. with silver solder to insure tight joints at high temperatures. In the experiments where union connections were required, metal to metal ground joints were used. Joint compounds were found to be unsatisfactory.

A preliminary comparison in operating costs of the new heating method, which is called Liquid Heat Consolidated Unit, against the cost of the usual combination of services now employed, showed a saving of about 48 per cent in favor of liquid heat. The fuel used was No. 1 buckwheat anthracite coal, at $7.50 a ton, with a heat release at 72 per cent efficiency.

The process was invented and developed by Orion O. Oakes of the John B. Pierce Foundation. The early stages of the work were carried out by the John B. Pierce Foundation in conjunction with the NHA Office of Product Research and Development. However, the contract between these two agencies ended August 24, 1944. Since that time the Foundation has been carrying out further research on "liquid heat" without government cooperation. The Foundation states that while the idea is revolutionary no extreme interpretations should be made as to the final results.

NEW RECORDING - REPRODUCING technique is announced by the Armour Research Foundation. The invention, if claims are sustained, opens new use horizons for sound recording and reproduction. The technique is revolutionary in that it records sound magnetically on spools of wire as fine as a human hair. A feature of the device is that the sound can be played back immediately after rewinding the spool. The recording wire needs no processing before playback and as far as can be determined, will not deteriorate with age or use.

(Continued on page 192)
"The Navy is never 'at sea' about Insulation!"

When the Navy considered insulation for its famous Quonset huts, it chose KIMSUL.

It knew that these huts must protect Navy men, equipment and supplies from cruel and punishing elements. They must withstand both the humid, scorching heat of the tropics and the penetrating sub-zero cold of the arctic. On a thousand shores, Quonset huts must provide comfort, utility and safety for a Navy ashore.

Shipping and storage space being so valuable, insulation for this exacting task must compact to the minimum of bulk and weight. And that is where KIMSUL stands apart from all other insulations.

Like a closed accordion, KIMSUL comes compressed to only one-fifth of its installed footage. It takes but one-fifth the storage space, one-fifth the shipping space, one-fifth the handling . . . yet this insulation provides an all-over blanket of protection with a "k" factor of only 0.27.

KIMSUL, the only insulation with many layers of protection in one blanket, is doing an outstanding job for the Navy in the "world's largest housing project." It will do just as fine a job for the homes that you design or build, giving home owners lasting protection and greater fuel economy.

Take a tip from the Navy—specify KIMSUL!
Suggested postwar uses of the recorder cover a wide field in educational, industrial, commercial and entertainment usage. Machines for office dictation and transcription are planned. Pocket recorders will make dictation possible anywhere. In cooperation with the telephone company a recorder could answer the telephone and take messages.

The magnetic wire sound recorder was invented by Chicago-born Marvin Camras while he was a student in electrical engineering at the Illinois Institute of Technology. It was later developed and perfected by the Armour Research Foundation, where Camras is now an associate physicist.

The idea was first suggested in 1896 by Valdemar Poulsen, a Danish physicist. The magnetic wire sound recorder was invented by Chicago-born Marvin Camras while he was a student in electrical engineering at the Illinois Institute of Technology. It was later developed and perfected by the Armour Research Foundation, where Camras is now an associate physicist.

The idea was first suggested in 1896 by Valdemar Poulsen, a Danish physicist. The magnetic wire sound recorder was invented by Chicago-born Marvin Camras while he was a student in electrical engineering at the Illinois Institute of Technology. It was later developed and perfected by the Armour Research Foundation, where Camras is now an associate physicist.
### IF WE WERE IN THE MARKET FOR HOSPITAL COMMUNICATING AND SIGNALLING EQUIPMENT

Here's what we'd want to know about each source of supply.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Are they experienced?</strong></td>
<td>Connecticut Telephone &amp; Electric is one of the oldest names in communications ... a pioneer since the early days of the telephone.</td>
</tr>
<tr>
<td><strong>Are Hospital Systems a principal product, or just a sideline?</strong></td>
<td>A principal product for many years.</td>
</tr>
<tr>
<td><strong>Are they abreast of the times?</strong></td>
<td>As prime contractors for Signal Corps and Air Corps communications, C.T. &amp; E. engineers are closely associated with every improvement in their field. None will be overlooked in our post-war hospital equipment.</td>
</tr>
<tr>
<td><strong>Who uses their equipment?</strong></td>
<td>Over 600 leading hospitals use C.T. &amp; E. systems. We will gladly supply their names.</td>
</tr>
<tr>
<td><strong>Is their line complete?</strong></td>
<td>For details, write for Bulletin 102, describing the C.T. &amp; E. Hospital line. Hospital executives and their architects will be particularly interested in CONNECTACALL two-way nurse-patient systems, Doctors' Registry and Paging Systems, and Special Interior Circuits.</td>
</tr>
<tr>
<td><strong>Can they help us with modernization as well as new construction?</strong></td>
<td>Yes. Hundreds of C.T. &amp; E. systems have been installed in existing hospital buildings.</td>
</tr>
<tr>
<td><strong>Can they give us authoritative engineering help?</strong></td>
<td>C.T. &amp; E. Advisory Planning Service is famous for its extensive practical assistance. We invite you to sample it without obligation. Write today.</td>
</tr>
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</table>

**CONNECTICUT TELEPHONE & ELECTRIC DIVISION**

**GREAT AMERICAN INDUSTRIES, INC.**

**MERIDEN, CONN.**
YOUR POSTWAR

OIL-O-MATIC

OIL BURNER

WILL BE AS GOOD

TO LOOK AT

AS IT IS

TO LIVE WITH

WILLIAMS

OIL-O-MATIC

HEATING

BLOOMINGTON, ILLINOIS

Hang on to the War Bonds you buy if you want to hang on to the liberty you love.
Several years ago, Revere set out to discover why many old-time sheet copper installations have stood up better than some of the modern ones—despite refinements in copper as well as in the technique of installation.

The reason, discovered and confirmed by painstaking work in the Revere laboratory, is simply this—any sheet copper installation must have enough columnar strength to expand, when heated, without buckling. Alternate buckling and straightening, with expansion and contraction due to outdoor temperature extremes, is the real cause of failure.

From these findings, Revere has been able to reduce the principles of sheet copper construction to a matter of engineering design, with the assurance of satisfactory performance.

Details will be described and illustrated in a new booklet now being prepared. Upon request, we will place your name on our list to receive a complimentary copy when issued. Write the Revere Executive Offices. Revere materials are handled by Revere Distributors in all parts of the country. For help with difficult problems, call on the Revere Technical Advisory Service, Architectural.
head. There is no stylus or other mechanical device in the recording head. The input of the microphone is converted electronically into a magnetic field. The field magnetizes the wire and leaves a reproducible magnetic record of the sound fed into the microphone.

To play back, the wire is run through the recording head in the same direction as when recording sound. Sound can be removed from the wire as easily as it is recorded. A demagnetizing coil, also in the path of the wire and placed so that the wire reaches that point before entering the recording head, can be energized by throwing a switch. As the wire passes through the coil, any message already on it is blanked out by a high frequency electro-magnetic field which leaves the wire in a magnetically neutral state. Simultaneously, as the wire enters the recording head, a new message can be recorded.

The wire can be produced in quantity and at costs low enough to compete with ordinary disk type records. The "packaging" of the magnetic wire recorder was done by Product Designers of Chicago. At the present time thirteen companies have been licensed to manufacture the recorder but due to war activity the Army and Navy have limited production to their own use.

NEW PRODUCTS

STORAGE ROOMS

Can be enlarged at any time by the addition of wall panels.

Drinkwater portable storage rooms provide quick and safe storage for many items. They serve as temporary or permanent storage units for food, supplies, tools, etc. They are constructed with substantial wood frames (1½ in. thick) mortised and tenoned, with all joints glued. The frames are covered with heavy galvanized wire screening. The panels interlock in such a way that rooms or batteries of rooms can be quickly assembled or dismantled without the use of tools, screws or nails. Complete units, with ceiling panels, are rat and mouse proof as well as pilfer proof. The illustration shows a two-room combination consisting of 3 ft. by 6 ft. and 3 ft. by 3 ft. connected storage rooms with a common wall between the two rooms. The manufacturer states that the complete installation time for a 6 ft. by 6 ft. room from uncrating of all parts to the complete setup is 30 minutes.


ABRASIVE WHEELS

Impart cushion-like action for special finishing jobs.

These solid polishing wheels, marketed under the trade name of Norflex, are available in three types; cork resinoid,
JUST looking at the outside, as Defoe's little feathered home-builders are, can't possibly convey any idea of the comforts and advantages which are being perfected for your postwar home!

- Many new features that will save hours of tiresome housework are among the advancements in functional design, planned by Defoe's Housing Division for homes of tomorrow, large and small. These scientifically planned Defoe home-units will offer not only beauty and individuality of design but also the financial advantages made possible by modern mass production methods.

- And remember that today, while you're investing in War Bonds to do your part in defeating the Axis ... you're also steadily building up a nest-egg that will help finance your future home, when you're ready to build!

Housing Division - Defoe Shipbuilding Company, Bay City, Mich.

Back the Attack - Buy War Bonds

Defoe Ships for Victory
Servants for Peace

June 1945
Every Watrous Flush Valve has this simple
Water-Saver Adjustment

... and it means EXTRA SAVINGS TO WATROUS OWNERS

Flush valves save water. That is one of the big reasons why they are so widely used today.

Some flush valves save a great deal more water than others because they can be readily adjusted to the actual needs of the fixture on which they are installed.

Fixtures vary in their water requirements—frequently as much as one gallon or more per flush can be saved by proper adjustment. In a building with 200 flush valves this saving could amount to 1,168,000 gallons annually. Water savings like this mean appreciably lower water bills, lower pumping costs. Judge the savings for your buildings from table below.

When you specify Watrous Flush Valves, you make it possible to obtain maximum water savings on every fixture—because every Watrous Flush Valve, in both diaphragm and piston types, is equipped with a Water-Saver Adjustment.

This simple screw driver adjustment requires only a few seconds—there is no need to take the valve apart, or even shut off the water. It assures greater water savings to Watrous owners, and is one of the reasons why the selection of Watrous Flush Valves is a source of constant satisfaction over the years to everyone concerned.

<table>
<thead>
<tr>
<th>Building with 100 Flush Valves</th>
<th>Building with 500 Flush Valves</th>
<th>Project with 1000 Flush Valves</th>
</tr>
</thead>
<tbody>
<tr>
<td>When average of ½ gal. saved per flush</td>
<td>292,600 gallons</td>
<td>1,460,000 gallons</td>
</tr>
<tr>
<td>When average of 1 gal. saved per flush</td>
<td>584,000 gallons</td>
<td>2,920,000 gallons</td>
</tr>
<tr>
<td></td>
<td>5,840,000 gallons</td>
<td></td>
</tr>
</tbody>
</table>

THE IMPERIAL BRASS MANUFACTURING COMPANY
1238 W. Harrison St., Chicago 7, Illinois

For complete information on Watrous Flush Valves see Sweet's Catalog or write for Catalog No. 416-A. Also ask for Bulletin No. 47 giving a summary of "Architects' Views on Flush Valve Applications."
GB REVOLVING DOORS AT ROCKEFELLER CENTER
More than 60 GB revolving doors have been installed to date in the beautiful buildings of Rockefeller Center.

U. S. POST OFFICE AT PHILADELPHIA, PA.
Revolving doors and metal work by General Bronze.

GB ALL METAL REVOLVING DOORS

GB revolving doors are a worthy addition to your finest buildings. These handsome, easy-operating doors embody features developed in thirty-five years' experience in fabricating non-ferrous metal products for the building industry. They are engineered to meet modern requirements and can be detailed to harmonize with the architectural treatment of the entrance.

GB revolving doors have been specified by many of the country's foremost architects for their finest buildings. Hundreds of installations in notable buildings all over the United States are constant reminders of their excellence. As soon as metals are released for building, they will again be available. Plan now to use them. See our catalog in Sweet's.

GENERAL BRONZE CORPORATION
34-17 TENTH STREET   LONG ISLAND CITY 1, N. Y.

SIX CONSECUTIVE ARMY-NAVY "E" AWARDS
fiber resinoid and resilient rubber. They differ from the conventional grinding wheels in that they are designed to remove only a relatively small amount of material such as burrs and sharp edges, or to polish a surface that is already to size rapidly and economically.

The fiber resinoid type of polishing wheel consists of uniformly sized abrasive grains mixed with cotton fibers and held together with a resinoid bond. The mixture is pressed to the desired size of wheel or stick. The resilient rubber wheels are made with a comparatively soft rubber bond which imparts to the wheel a cushion-like cutting action. The cork resinoid type are made up of abrasive, resinoid bond and finely divided cork, the latter providing a soft polishing action.


SMOKE STACK

Built on skyscraper principle new smoke stack offers advantages.

The newly developed Durabilt Stack consists essentially of a hexagonal steel structure, adequately braced throughout its length to resist high wind load, shock, lighting and earthquakes. Horizontal and vertical members are attached to the steel structure and these support anchor- and - tile - retaining castings. Each tile forming the inner wall is individually retained. The outer tile is supported by means of channels at definite spacings. An outstanding feature of the stack is its insulation. This fits snugly and securely between the tile and retainer castings, providing low radiation loss and helps to keep the temperatures within the stack uniform, thereby increasing efficiency by improving draft.

Sectionally supported, there is no cumulative load upon the fire brick lining, less foundation is required and weight savings of approximately one-third are made possible.

The outer casing of the stack can be of tile, sheet steel, or Transite. Air space is provided between the insulation and outer tile throughout the stack. Vents are located at the bottom and top of the stack. The stack is easy to erect, easy to repair, and crackproof. Safety railings and ladders can be installed easily and full insurance coverage can be obtained. Its cost is comparable to a heavy-duty stack and it can be erected in any height from 50 to 300 ft.

Manufacturer: Chicago Fire Brick Co., 1467 Elston Ave., Chicago 22, Ill.

FLUORESCENT LUMINAIRE

May be individual, continuous, direct ceiling or suspension mounted.

This luminaire is one of several currently being announced in the A series of units. It is the A-3440 Permaflector Fluorescent Luminaire. This shielded type 4-40 w. fluorescent fixture has Satinol contrasting glass panels which are easily removed for maintenance. Claims made for the new unit include controlled lighting, simple maintenance and flexible mounting.

Postwar volume and profits will be in quality builders hardware according to building experts whose job it is to get the facts and forecast future trends.

They reason this way: the public, after Victory, will have had its fill of substitute merchandise in every field. During the war, they reason, unknown brand names and inferior quality have been better than no names or no material at all. But that’s a situation that will correct itself fast when superior merchandise and a huge backlogged buying power come together!

As a manufacturer of quality builders hardware for just short of a century, P. & F. Corbin will play a large role in this quality-conscious market in the days to come. “Good buildings deserve good hardware”... and today is not too soon for everyone who appreciates good builders hardware to check his plans with ours. Let us know your requirements... early!

P. & F. Corbin
THE AMERICAN HARDWARE CORPORATION, SUCCESSOR
NEW BRITAIN, CONNECTICUT • SINCE 1849
There are two lines of Pittco Metal — each distinctively styled

Since its introduction several years ago, the Pittco De Luxe line of store front metal has won a hearty endorsement from architects. Careful planning of the line as a whole, all at one time, resulted in unusual unity of design—a harmonious relationship between each Pittco De Luxe unit and all the other members in the line. And the extruded method of manufacture assures rugged strength, clean, sharp profiles, lasting color and perfect finish. This unrivalled combination of characteristics accounts for the continued popularity of Pittco De Luxe. It is first choice with architects whose clients demand sales-winning store fronts which reflect high quality.

Recently, Pittco Premier was introduced to satisfy the need for a lightweight, moderately priced line of store front metal. The same careful planning and harmonious styling which have made Pittco De Luxe so popular are evident in the Premier line. Pittco Premier also was designed as a unit... each piece styled to complement and heighten the beauty of the other members with which it is used. Pittco Premier can be set easily and quickly from the outside, effecting a substantial savings in setting time. And the self-adjusting clip always maintains a firm grip on the glass, no matter what its thickness. These practical advantages plus the high degree of architectural beauty in the Premier line promise success comparable to that already attained by Pittco De Luxe.
New MAZE-LITE Fluorescent Reflectors Bring Amazing New Illumination to The Adler Company, Cincinnati, Ohio

His remarkable contrast story very clearly shows the advantages of good SEEING-LIGHT. The Lighting Division of the Cincinnati Gas & Electric Company of Cincinnati, Ohio, made a survey of the original job, then recommended an entire new lighting system, using GUTH MAZE-LITES in a definite layout pattern. Installation was sold by the F. D. Lawrence Electric Company, also of Cincinnati.

GLARE, GLOOM AND DEPRESSION keynote the "BEFORE" Photo. Note how bright the incandescent lamps flash against the dark background. Worker's morale is depressed by contrasts. Accidents are more likely because of blinding of eyes due to "bright spots and dark corner" contrasts.

BETTER, FASTER work is accomplished in the re-lighted area. Eyes see quickly, more surely, and there is less nervous fatigue. The "AFTER" photo clearly demonstrates these advantages of good SEEING-LIGHT.

INSTALLATION DATA

The original wattage was increased but 4.7 times, to obtain 18 times the "Before" illumination. The "Before" job used 3 KW, with 150-watt lamps at various "spots" throughout the plant, and provided an average of only 5 foot-candles. By engineered and scientific arrangement, the new GUTH MAZE-LITE installation provides 90 foot-candles as installed, and will furnish 70 foot-candles, in service.
FLUORESCENT LIGHTING FIXTURE

Industrial unit can also be used as an exposed troffer for other installations.

Construction of this fluorescent unit is very similar to the No. 1626-C series except that the reflector is narrower and deeper, and is finished in white Flurache both inside and out. Available with or without louvers, the primary purpose is to illuminate areas where long, continuous lines are to be used, as over benches where precision work is done. The louvers are steel and provide 25° crosswise and 15° lengthwise shielding. They are supported at four points and may be swung down for maintenance. Starters are grouped on the top of channel near one end, and ballast mounts on top at center. Units are available for two and three 40 w. fluorescent lamps in louvered and unlouvered models. They can be hung individually or in continuous lines by means of chain, conduit, or cable. Units can also be wired for pull switch if desired. Dimensions: Length, 48 in., width 11 3/4 in., height to top of ballast 7 3/8 in.

Manufacturer: Curtis Lighting Inc., 6135 West 65th St., Chicago 38, Ill.

CABLE CLAMP

Invented by James J. Pasela and E. Stanley Knockel, Glenn Martin Company employees, this new device makes it possible to measure accurately the load of any cable. Suggested by the old seafaring trick of looping a rope around a capstan, the new clamp features a dual pulley whose diameter is such that tension on the cable is relieved and the clamp bears only a small part of the strain. This avoids damage at the crimping point and a consequent false breaking point. Additional feature is an automatic locking bolt, an ingenious scissor mechanism consisting of two cross slots so arranged that a pull of the cable urges the locking bolts into a firm clamping position at the ends of the cable. The self locking bolt replaces 12 hand-adjusted bolts found in previous types of cable clamps. Designed originally for 1/16 in. to 1/2 in. cables, it can be adapted to accommodate any size cable and to fit any type of machine.

Manufacturer: Glenn L. Martin Co., Baltimore, Md.

TERMINAL BLOCK

New type of solderless, wire to wire connecting device.

Developed as a time-saving, space-saving, and material saving war time necessity, Bee Terminal Blocks offer so many advantages that large peace-time uses are expected by the manufacturer. The terminal block is a connector strip with

(Continued on page 200)
Any Home is a BETTER Home
When It’s Equipped with a

GarWood

HEATING UNIT

Take a well-built home equipped with a finicky heating unit... frequent breakdowns... chilly rooms... overheated rooms. The result? Unhappy owners. A comparable home equipped with the proper heating unit will draw praise for the architect and acknowledgment that "the builder knows his stuff". Good heating equipment is a vital part of any home. That's where GAR WOOD comes in. Actual surveys have proven that Tempered-Aire provides excellent heating performance with savings in fuel consumption ranging as much as 50% below the average for the community. Gar Wood will offer a complete new line of oil or gas-fired Tempered-Aire and Boiler Burner Units for homes of all sizes. Get in the habit of recommending Gar Wood Heating Equipment for your homes. Ask the Gar Wood Dealer in your community to notify you when the new post-war models are available.

BUY MORE BONDS
...and keep them.

GAR WOOD INDUSTRIES, INC., HEATING DIVISION
7924 ROIOPELLE STREET
DETROIT 11, MICHIGAN

HOISTS and BODIES . . . WINCHES and CRANES . . . TANKS . . . ROAD MACHINERY . . . MOTOR BOATS
"This guy thought all asphalt tile was alike."

"But I told him he should see how Kentile tests for indentation—the standard lab. test at 77° F., you know."

"Well, you're getting warmer, anyway."

"That's just a little over room temperature. But even though Kentile rates so high on indentation it is so flexible it can even be installed on good wood floors—it's soft enough to sort of 'snuggle' on to almost any surface."

"Hmm, you're getting sharp, I think."

"Oh, Kentile has the sharpest, straightest edges you've ever seen. Those tiles absolutely seal-set against each other—and they're installed remarkably fast."

"I am glad something is fast."

"And Kentile is color-fast, too. The pigment goes right thru to the back. There's the Greaseproof Kentile too."

"Oh, Kentile is never slippery. Anyway, this bird was so impressed by my knowledge of details he said I could do the post-war redesigning for his whole chain of stores."

"So is Kentile!"

"Pretty slick!"

"Oh Harold, you're wonderful."

If you, too, want to woo and win clients by proving you're well informed, send for the complete, full-color Kentile catalogue—sent you without obligation. Write to David E. Kennedy, Inc., 80 Second Avenue, Brooklyn 15, N. Y.
HHS is a section of the Mariners’ Museum, Newport News, Va., and clearly demonstrates the display value of Michaels Time-Tight Cases. Distinctive, exclusive Interlocking Frames, no exposed screws, and other unusual construction features, make Michaels Time-Tight Cases increasingly popular. More expensive, it is to be displayed, Time-Tight Cases will meet your requirements. There are Table Cases, Wall Cases, Aisle Cases, Suspended and many other products of ferrous and non-ferrous metals.

JUNE 1945
practically any desired number of terminal posts, with each terminal post capable of handling from two to eight wires in the smaller ranges. One type, Series A-200, has terminal posts staggered in V formations, whereas in type Series A-300, terminals are set straight in line. The binding post stud has a slotted channel. The wires are held in this channel between a top clamp which is clamped into the nut, and a lower clamp which is secured to the base. This arrangement locks every wire to a wire in a vibration-proof and low-resistance connection. No lock nuts, washers, lugs or other accessories are required. This obviates soldering, crimping and pressing, and no special tools other than an ordinary socket wrench are required.

Manufacturer: L. S. Brach Manufacturing Corp., Newark 4, N. J.

LISTENING DEVICE
For private reception without disturbing others.

The streamlined and improved Husha-tone is a miniature, molded plastic extension speaker for individual listening. Its flat disc shape, 4 3/16 in. by 11/16 in., makes it ideal for under pillow use in bed. Hermetically sealed it can be cleaned in disinfecting solutions not over 120°F. A light weight "Bimorph" crystal element insures uniform response and high sensitivity. Its tone quality is comparable to large cone-type speakers, and it produces sufficient volume with only .01 w. power consumption.

Manufacturer: Brush Development Co., Cleveland, Ohio.

QUADRANT DAMPER
Designed in a modern pattern for light industry and dwellings.

The device comes in 3/4 in. and 3/4 in. sizes, and is attractively plated with rust-resisting cadmium. Features claimed for the product are ease of installation, dependability of operation and ruggedness of construction.

Manufacturer: Western Air Devices, Inc., 1349 E. Vernon Ave., Los Angeles, Calif.

PORTABLE FIRE EXTINGUISHER
Engineered carbon dioxide extinguisher is faster and more easily controlled.

The Alfite Speedex, using carbon dioxide as the fire extinguishing agent, is engineered to more speedily extinguish small oil or electrical fires. The Speedex operating valve lever is directly above the carrying handle and can be instantly opened by hand grip pressure. It is quickly closed by releasing the hand when operator is changing his position.

(Continued on page 212)
You should have seen these buildings before they got their Waterfoil "Raincoats"

Yes, they were pretty shabby structures—not much credit to the owners or to the community. If your building exteriors need restoration now, make them look like new and protect them for the future with Waterfoil—a product of the Horn Research Laboratories. Manufactured of irreversible inorganic gels, Waterfoil bonds both physically and chemically to masonry forming a dense hard coating. Easy to apply, Waterfoil lets the masonry breathe as it should but helps to impede water penetration. Free from oil, cement, lime, casein or glue. Send for the Waterfoil literature today.

A. C. HORN COMPANY
Established 1897
Manufacturers of Materials for Building Maintenance and Construction
Long Island City 1, N. Y.
Houston, Texas
San Francisco, Calif.
Many of the homes of tomorrow are sure to display lustrous, light-flooded panels of Insulux Glass Block.

And here's why!

Panels of Insulux transmit and diffuse light better than ordinary construction yet provide privacy along with light.

Furthermore—panels of Insulux reduce heat loss and condensation.

And they're easy to clean and to keep clean.

Panels of Insulux can be used to brighten dark corners all through the house—to add new beauty to an entry way, kitchen, dining room or bath.

For technical data, specifications, and installation details, see our section in Sweet's Architectural Catalog, or write: Insulux Products Division, Dept. B-21, Owens-Illinois Glass Co., Toledo 1, Ohio.
In all the post-war dreams there's one feature you always find... completely automatic heating. And it's one feature that's already a reality! Thrush Forced Circulating Summer-Winter Hot Water Heat is Tomorrow's heating system, here today. Are you telling the people of your community its advantages of greater economy, real home comfort and year-round Domestic Water supply? Are you getting it drawn in the blueprints and written into the specifications of the homes being planned? Are you recommending it for modernization work now? These are profit opportunities you should not overlook. If you are not familiar with Thrush equipment, see your wholesaler today or write Dept. H-6 for more information.

H. A. THRUSH & COMPANY • PERU, INDIANA

Summer-Winter Hot Water Heat!
BUILDING REPORTER

(Continued from page 208)

For continuous operation the D-yoke ring is slipped over the operating lever while it is depressed. Available in 15, 10 and 4 pound capacity, the units are approved by Underwriters' and Factory Mutual Laboratories. Manufacturer: American-La France-Foamite Corp., Elmira, N. Y.

DOMESTIC WARM AIR REGISTER
Insures even distribution of air, eliminates balancing dampers in duct work. The manually operated Vol-U-Trol register for use with domestic forced warm air heating systems, is designed to provide a wide range of easily adjustable diffusion settings, and control of the air supply volume at the register. The curved extension front together with the individually adjustable diffusion vanes permits adjustment so that any shape room can be blanketed with air regardless of register location. An operating lever projecting through the center of the register changes the amount of opening of the volume control blades, thus placing control of the air supply volume at the register and eliminating the need for balancing dampers in the duct work. An adjustable lock allows the register to be closed by the operating lever and reopened to the previously determined point without further adjustment. Manufacturer: Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., So., Minneapolis, Minn.

"FUEL-SAVER" BOILERS
FOR QUICK REPLACEMENT

F OR years "Fuel-Saver" Boilers Type C have met the requirements for low cost heating in office and apartment buildings, hotels, schools, theatres, industrial plants, etc. Their design and construction makes them especially suitable for post-war heating requirements:

QUICK STEAMING
Due to rapid and positive internal water circulation.

MAXIMUM HEAT ABSORPTION
Due to effective distribution of heated gases.

EASE OF CLEANING
Due to accessibility of heating surfaces.

"FUEL-SAVER" Boilers have cut fuel costs in thousands of heating installations.

Complete range of standard sizes rated in accordance with S. H. B. I.—15 lb. A. S. M. E. standard—for hand, stoker, oil or gas firing.

Type C twin section—a heating boiler in halves. For installation where Type C one piece cannot be carried through existing passages.

Type KD—knocked down—a heating boiler designed for shipment so that sections can be carried through a door or window. Eliminates expensive cutting or patching of building. Reduces time out when in need of steam.

Every International Representative is a competent boiler man able to assist in solving heating problems.

Write for bulletin describing Type C and Type KD boilers. See Sweet's Architectural File.

THE INTERNATIONAL BOILER WORKS CO.
HEATING DIVISION
220 BIRCH STREET — EAST STRoudsburg, PA.

HEATING BOILERS TYPES C, KD, DD, K
POWER BOILERS TYPES CR, FR, LFR, LFS

RADIANT HEATING
Baseboard radiation provides 3° floor-to-ceiling temperature gradient.

The Base-Ray Heat Panel, resembling a typical wood baseboard, will be available postwar for all types of hot water heating jobs in modernization and new residential construction. It can also be used with two pipe steam and vapor installations. The panel is a hollow cast iron unit, 7 in. high and 153/8 in. wide, connected with the usual heating boiler. Easily installed on the outside walls, it can be painted to match the woodwork of the room. Panel sections are joined by means of push nipple construction with short tie bolts. Valves, elbows and traps are connected to the panels at bottom opposite ends, as with tube type radiators. These connections are concealed by a neat metal enclosure which is flush with the front and top of the units. Base-Ray Heat Panels deliver radiant rays at ankle height keeping the floor warm and comfortable. Tests have proved the floor to ceiling temperature differential is less than 3° in zero weather. The units will be manufactured in 12 in. and 24 in. lengths and will be shipped assembled up to 10 ft. Manufacturer: Burnham Boiler Corp., Irvington, N. Y. (Technical Literature, page 220)
"How to push a Button...and SELL A HOUSE!..."

"That's right!... Just show Mr. Groom and Mrs. Bride how much convenience, comfort, and safety is added to their new home by an Avco Automatic Door Opener ... and you've got your post-war house half sold before you leave the driveway and enter the dwelling!..."

Garage doors open or close, lights go on or off, at the touch of a button. Yard and house entrance lights can be hooked in at slight additional cost. At any hour, in any weather, here is new convenience, comfort, safety!

See for yourself, as forward-looking architects and builders in great number are already doing, what this new device will mean in living convenience ... how much it can add in sales appeal to homes you plan or build for sale!

AVCO
Automatic
DOOR OPENERS

Any standard type garage door will take an Avco Automatic Door Opener. Cost is low. Installation simple. Construction sturdy. Once installed, a button in the car and another in the house do the whole job!...
A new twist... and presto—reinforcing bars that fight!

A unique CECO production line twists Ceco reinforcing bars into Army screwposts. Screwposts that, when strung with barbed wire, stand grim sentry duty in jungle outpost and German field.

This simple yet ingeniously contrived fabricating process will, in a little over 2 years, have turned out 3 1/2 million of these reinforcing bars that fight. Just another example of Ceco engineering skill in steel fabrication. And to be expected... for in peacetime Ceco is the country's largest independent fabricator of reinforcing bars for reinforced concrete construction. A Ceco coast to coast warehousing service which guarantees builders in reinforced concrete the bars they need, cut, bent, bundled and tagged, and delivered on schedule, ready for speedy installation. Ceco's 30 years of engineering experience in reinforced concrete construction means "know how", so always consult a Ceco trained-in-the-field engineer before you plan to build!

Complete list of Ceco engineered products for reinforced concrete construction includes: Meyer Adjustable Type Steelforms, Reinforcing Bars, Column Spirals, Welded Fabric, Bar Chairs, Spacers and accessories, Column Clamps and Adjustable Steel Shores.
CECO STEEL PRODUCTS CORPORATION
Concrete Engineering Division—5701 W. 26th St., Chicago, Ill.

Manufacturing Division: All types of residential and industrial steel windows, steel doors, metal frame screens, metal lath, metal weatherstrip, steel joists and steel roof deck.

Sheet Steel and Wire Division • Highway Products Division

MAKES THE BIG DIFFERENCE IN CECO CONSTRUCTION PRODUCTS
DAYLIGHT ENGINEERING is an important element in classroom design. Provide plenty of well-distributed natural daylight by specifying large windows and light-colored walls and ceilings. Prevent the "shut-in" feeling that leads to restlessness, by placing window sills low enough to permit a view of the outdoors.

THERMOPANE, the L-O-F windowpane that insulates, makes large windows thoroughly practical, whatever the climate. It does away with the need for putting up and taking down extra sash for insulation.

More daylight . . . greater cleanliness . . . a surface that doesn't need refinishing in spite of frequent soiling and washing—these characteristics of glass are good reasons why it is being specified more and more for new schools and for wider use in modernization of existing structures.

The versatility of glass is a valuable aid to school architects. You can have glass that is transparent, translucent or opaque. Colorful or colorless. With a smooth finish, or in decorative patterns. Tempered, for resistance to impact and thermal shock. For the right glass for every use, see your L-O-F Distributor. Libbey-Owens-Ford Glass Company, 1565 Nicholas Building, Toledo 3, Ohio.

Why GLASS is a "Natural" for many uses in School Buildings

VITROLITE, colorful L-O-F structural glass, is an ideal wall surface for shower rooms. Water won't harm it, and it never needs refinishing. It keeps its lustrous, easy-to-clean surface.

INSTRUCTIVE EXHIBITS along hallways increase students' interest and pride in their work. Provide display cabinets with glass doors for handiwork of art, mechanical drawing, manual training, home economics and other classes. Glass keeps exhibits clean, protects them from handling.

LIBBEY-OWENS-FORD
a Great Name in GLASS
Announcing

LONE STAR MASONRY CEMENT

AFTER years of intensive research, the Lone Star Cement Corporation now takes genuine pleasure in announcing a significant forward step in Masonry Cement. Significant — because this modern masonry cement furnishes important plus properties all along the line—in plasticity, in water-retention, in strength, in bond, and in all the other qualities which add up to really great job performance. Trying is believing—specify Lone Star Masonry Cement for your next job.

LONE STAR CEMENT CORPORATION

3 QUALITY CEMENTS

LONE STAR PORTLAND CEMENT
for quality concrete in all types of construction

'INCOR'* 24-HOUR CEMENT
America’s FIRST high early Portland Cement — saves time, cuts costs

LONE STAR MASONRY CEMENT
The modern masonry cement, for really great job performance

Your fireplace designs may emphasize either modern smartness or quaint charm, but they will all feature room-wide, smoke-free heating efficiency if they are planned around Majestic Circulator Fireplace Units. Majestic's adjustable frame and grille openings make it adaptable to any plan. Its patented "Radiant Blades" nearly double the radiating surfaces of the ordinary fireplace. Insulation-sealing angle irons, built-in damper and scientific proportioning assure unexcelled performance.

Write for details today.

THE MAJESTIC COMPANY
1001 Erie St., Huntington, Indiana

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If a retaining wall "pulls away", it's bound to cause dissatisfaction. LUX-RIGHT AREAWALLS STAY PUT. They never sag. This means a neat, trim foundation line on every job. No complaints. No back-calls.

LUX-RIGHT AREAWALLS are made of heavy gauge, special corrugated steel, completely HOT-DIPPED GALVANIZED AFTER fabrication. Maximum rust resistance. Two types: Straight and Round. All standard sizes. See your distributor-dealer, or let us send you free folder.

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ACCURATE LIQUID LEVEL INFORMATION AT A GLANCE, WHEN YOU WANT IT—

WITH LIQUIDOMETER TANK GAUGES

"THEY'RE ALWAYS DEPENDABLE"

100% automatic.
No pumps, valves, or auxiliary units needed to read them.
Models available for either remote or direct readings.
Accuracy unaffected by specific gravity of tank liquid.
Approved by Underwriters' Laboratories for gauging hazardous liquids.
Write for complete details.

THE LIQUIDOMETER CORP.
36-30 SKILLMAN AVE., LONG ISLAND CITY, N.Y.
New FOR POST-WAR...

COMFORT-CONDITIONED HOMES

Double-duty warm-air-type heating systems, which will cool the house in Summer, as well as heat it in Winter! This is one of the remarkable heating and ventilating achievements to come after the war. D & H Anthracite, with its steady, even heat, is the ideal fuel for such systems. To give your clients comfort-conditioning, specify Anthracite-burning equipment in plans for post war homes.

★ Clean—no soot. Healthful—even temperatures; no fluctuation between "hot-and-cold, on-and-off" periods. Economical—more heat, at less cost. Convenient—amazing advances in automatic equipment ahead.

"The Fuel of the Future"

THE HUDSON LACKAWANNA COAL COMPANY
SCRANTON PENNSYLVANIA

TUNE IN D & H ANTHRACITE'S SUNDAY MORNING WORLD NEWS 9 A. M. EVERY SUNDAY, CBS
How Up-to-Date are you on ALUMINUM?

A postwar plan for Main Street, Niles, Michigan . . . remodeled and rebuilt. Designed by Ketchum, Gina and Sharp, Architects for the Kawneer Company.
GREAT NEW ALLOYS
are ready to help
rebuild Tomorrow's
"Main Street"

OFF THE $1,000,000,000 a year that authorities estimate will be spent during each of the first postwar years, a considerable percentage is already earmarked for rebuilding towns and villages.

Thanks to great new Reynolds aluminum alloys, today’s advanced architectural ideas can be transformed into tomorrow’s structures ... combining beauty, corrosion-resistance and lightness with unit strength greater than many types of steel.

For structures, roofs, doors and fixtures—inside and outside . . . these new alloys open up new horizons, give greater freedom of design to the architects and contractors who will build postwar America.

R301—Reynolds armor plate alloy—tomorrow’s new sheet and plate alloy. Typical tensile yield strength of 60,000 p.s.i., superior workability, high corrosion-resistance, excellent spot-welding properties.

R303—Developed primarily for extrusion and forging stock with a higher tensile strength than any alloy ever before used. Available also in sheet form. Splendid corrosion-resistance.

Whatever your problem Reynolds will gladly help you solve it. See catalog in Sweet’s or write for Catalog No. 104 “Reynolds Aluminium. Its Important Role in Architecture.” Reynolds Metals Company, 2528 South Third Street, Louisville 1, Kentucky.

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REYNOLDS
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INGOT • SHEET • SHAPES • WIRE • ROD • BAR • TUBING • PARTS • FORGINGS • CASTINGS • FOIL • POWDER

JUNE 1945
TECHNICAL LITERATURE

(Continued from page 212)

WOOD BEAMS Mechanical Properties And Design Procedure For Glued Laminated Beams Composed Of Two Wood Species. Bulletin No. 11, 55 pp., 6 in. by 9 in.

This booklet is a report of research on the advantages and disadvantages of laminated glued beams. The study covers selection of woods to be used, principles of design, tests on beams and the properties of the cross sections of laminated beams. Included also are tables, design formulas and illustrations. The study points out an important economy in beam construction. Cheaper, lighter woods can be used for core material where stresses are lower. Denser more expensive woods are only used where stresses in the beam are high. University of Michigan, School of Forestry and Conservation, University of Michigan, Ann Arbor, Mich.

BATHROOMS Planning Your Bathrooms. 28 pp., 8½ in. by 6 in.

This booklet in color contains fixtures, bath and powder room plans and sketches of bathroom arrangements. It is subdivided into the following divisions: planning, remodeling, fixture groups, ideas, selecting fixtures, accessories, building materials and color treatments. The booklet covers all types of bathrooms including a double-delf bathroom and suggestions for the remodeling of under stair closets into powder rooms. Briggs Manufacturing Company, Detroit 11, Mich.

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FLAMMABLE LIQUIDS The Revised Edition of The National Fire Codes for Flammable Liquids, Gases, Chemicals and Explosives, 1945, 6 in. by 9 in. $3.00.

Of particular value during war times, this book conveniently assembles the many standards dealing with fire hazards. It is of particular use to those responsible for safeguarding human life, private and public property from the fire and explosion hazards inherent in flammable liquids, gases, chemicals and explosives. Contents by chapters are: flammable liquid storage and handling, oil and gasoline burning equipment, liquefied petroleum gases, utilization of flammable liquids, gases, refrigeration and fumigation, explosives and nitrocellulose materials, tables of properties, flash point tests, and appendix. National Fire Protection Association, 60 Battery-march St., Boston, Mass.

INCINERATORS Municipal, Industrial and Residential Incinerators, 8 pp., 8½ in. by 11 in.

This bulletin is the first published by the Morse Bouler Destructor Company to include Kerner Incinerators, a line recently taken over by this company. The bulletin is well illustrated with photographs of various installations. Tables give sizes and capacities. The range of sizes includes incinerators for stores, warehouses and factories and ready built “set on floor” units. Also included is a line of hopper, fire and ash doors. Morse Bouler Destructor Company, New York 17, N. Y.

PILE DRIVING. How to Sink Piles Without a Pile Driver, 4 pp., 8½ in. by 11 in.

This pamphlet describes the jetting process of sinking piles and explains how the La Bour Pump is applicable to this form of pile driving. The La Bour Co., Inc., Elkhart, Ind.


This pamphlet describes in detail the results of tests on various types of slab floors. Four concrete floors laid on the ground and three concrete and one wood floor laid over crawl spaces were tested for heat-transfer properties in a special structure provided for the purpose.

(Continued on page 228)
THIS DROP OF WATER WAS MIGHT HAVE IS THE DANGEROUS ONE!
IT LEAKED OUTSIDE THE DRAIN ... INSIDE THE BUILDING

NON-CLOG TRIPLE DRAINAGE DRAIN PROVIDE COMPLETE PROTECTION AGAINST FAULTY DRAINAGE

Sediment container removed for cleaning

Sediment container in place, strainer fits properly into position

Strainer cannot be replaced without sediment container being in place—no chance of forgetting to put it back

There is no other drain that offers the protective drainage feature of the Josam Non-Clog Triple Drainage Drains. Their "three-way" performance not only assures continuous, uninterrupted floor drainage in spite of accumulated debris, but also provides positive protection against leakage. Sediment container intercepts debris, allowing clear water to flow into drain line (normal drainage). If water seeps into floor around drain, it is returned directly into drain line... does not spread into floor or walls (double drainage). Even if sediment container becomes filled with debris, drainage continues through holes in auxiliary rim, signalling need for cleaning (triple drainage). Besides, as illustrated at left, the features of this drain are a positive guard against carelessness in cleaning and replacing sediment container. Don't shorten the life of the buildings on which you are working by taking chances with floor drains that do not have these exclusive features. Give them added years of life and service by specifying Josam Non-Clog Triple Drainage Drains every time!

Josam Manufacturing Company
390 Empire Blvd., Cleveland 14, O.

 Josam Manufacturing Co., 302 Empire Blvd., Cleveland 14, O.
Please send me illustrated booklet on the Josam line of "Triple Drainage Drains".

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SIMPLICITY...

Remember in high school? . . . How you held a Franklin Palm Glass and watched the warmth of your hand cause the volatile liquid to pass from the lower to the upper bell?

Dunham Differential Vacuum Heating is as simple as that! It is based on the law that water boils at a lower temperature under vacuum, and that the higher the vacuum, the lower the temperature at which vapor will rise.

The Dunham System reduces to utter simplicity the problem of control. It maintains comfort-level temperatures, with minimum supervision and maintenance, under all conditions. And it accomplishes this with fuel savings of 25% to 40%, as compared with ordinary systems.

May we send you Brochure 632 entitled "High Altitude Heating"? Just write on your letterhead to C. A. Dunham Company, 450 E. Ohio St., Chicago, III.

Limitless Design and Construction

Possibilities

Because of its unique and exclusive features, the No-Sag* Spring permits a designer to expand his post-war scope. For No-Sag Springs make possible the creation of furniture and furnishings that fit into the most progressive type of post-war building design and construction. The advantages of No-Sag Springs lie in their maximum spring surface—maximum efficiency in a minimum of space—the suspension principle of springing that eliminates perishable materials such as webbing and twine-ties—and their adaptability to any design or construction requirements.

NO-SAG SPRING COMPANY

KAY MANUFACTURING CORP.

Executive Offices:
21590 Hoover Road, Detroit, Michigan

Executive Offices:
Foot of Warren Street, Brooklyn, N. Y.

Permanent Display Quarters: American Furniture Mart, Chicago

OUR ENGINEERING DEPT.
is available for consultation. We will even spring up and upholster, free of charge, any sample frame you send us—and return it with complete construction specifications.

Write to Dept. A for "Progress" booklet describing the numerous applications of these unique springs.
At the W. F. Hall Printing Company, Chicago, mammoth rotary presses print four superimposed colors on both sides of a web of paper traveling at high speed.

To eliminate smearing or smudging at maximum operating speeds it was necessary to install a gas drying oven which operated at 1500°F. However, this raised the temperature of the paper to a point where it was no longer possible to maintain a high standard of accurate color register.

The problem was solved by installing two 70-ton Trane Turbo-vacuum compressors to cool the paper to normal room temperature...accomplished by supplying chilled water from the versatile Trane Turbo-vacuum compressors to rolls, around which the heated paper passed after the drying operation. These water cooled rolls restored the paper to the normal temperature necessary for the extremely accurate color register.

This is just another case where Trane, manufacturing engineers of cooling, heating and air handling equipment, has been called upon to solve an unusual problem in industry.

For the architects, engineers, contractors, builders of America who are planning today for tomorrow’s building and processing, Trane has the products, the knowledge, and the production facilities. When you have a cooling problem, whether for comfort or process, call on Trane first.
Modernizing a School with Light

THE PROBLEM:
How to relight a school building which had been allowed to run down. This picture at the right shows one of the dingy classrooms with its lighting system "20 years behind the times."

THE LIMITATIONS:
First and foremost, money. Funds had to be raised to swing the job since the school board did not have the money. Second, for the same reason, the installation must provide minimum cost operation. And rewiring must be kept to a minimum.

THE PLAN:
This typical classroom layout, drawn up by lighting engineers of Birmingham Electric Co., employs fluorescent lighting, with two continuous rows of Wakefield GRENADEIRS. Through these units, considerable saving in wiring time was made, since wire could be run along as an integral part of the fixture. This also reduced to a minimum the ceiling outlets necessary (required about one-third the outlets needed for previous types of lighting). Separate switch controls were provided for the units nearest the window and for the inner row.

THE ANSWER:
Pictured here is a standard 30' x 20' classroom in which is installed two rows of Wakefield GRENADEIRS (No. PG-2483) each row containing six units. This provides an average of 20-35 footcandles. Each unit is equipped with two 40-watt fluorescent lamps. Rows are spaced ten feet apart. Notice that the transverse louvering of the units ties in with the seating arrangement of the pupils. Four 30-watt germicidal units were also installed. The result — a lighting system that is already serving as a model for other school installations. For further details, write the F. W. Wakefield Brass Company, Vermilion, Ohio.
Another Example of

JOHNSON Individual Room CONTROL

Royal York Apartments, Columbus, Ohio.
Mr. Robert W. Schiff, owner.
Mr. M. H. Terry, manager.

TEMPERATURES IN EACH APARTMENT
CONTROLLED SEPARATELY!

Too warm! Windows thrown open! Result—fuel wasted! Naturally, some families want more or less heat than others. When each apartment dweller controls the temperature to suit his own needs, comfort is assured and fuel is saved. That is why a Johnson thermostat was installed in each of the 72 apartments in the Royal York when this exclusive building was built in 1938.

In keeping with finer living, Johnson Automatic Temperature Control for individual rooms offers the apartment dweller the comfort of a private home... Apartment owners and managers discover many direct and indirect benefits.

Years of experience with Johnson Room-by-Room Control clearly indicate that such facilities will be an important consideration in post war plans for buildings in which people live and work.

Johnson is nation-wide. Direct branch offices in principal cities afford practical cooperation in solving temperature control problems. Johnson designs, manufactures, installs and services with its own full-time personnel. Ask a Johnson engineer from a nearby branch office. There is no obligation, of course.

JOHNSON SERVICE COMPANY
MILWAUKEE 2, WISCONSIN
DIRECT BRANCHES IN ALL PRINCIPAL CITIES
Ground temperatures were observed at various depths down to 13 ft. below grade. The report is illustrated with diagrams and cross sections and some factors are suggested for estimating floor heat losses. Dept. of Commerce

Chief purpose of this handbook, one of the most complete manuals on radiant heating published to date, is to serve architects and engineers as a working manual. Detailed procedure is listed for figuring heat losses and piping requirements, designing the coils, supply and return mains. Factual data is presented on the relative merits of locating the coils in the floor and ceiling. Included is a full-page drawing of a floor type radiant heating system for a representative structure in which both continuous coils and grids are used to advantage. The book records in picture and text 23 typical installations covering a wide range of structures from the monumental type to low cost houses.

The advantages of even temperature distribution is shown in a series of cross section drawings and graphs. In addition to chapters on the theory, history and achievement of radiant heating in more than a thousand installations functioning in the U. S., the handbook devotes twelve pages to answering 34 common questions on radiant heating. Typical questions are: what effect will heat have on wood floors? and, will heat loss to the soil be excessive with floor coils in a basementless house? The book represents a thorough coverage of an important subject. A. M. Byers Company, Pittsburgh, Pa.

A complete folder on the Kinnear line of doors. The material is divided into six sections, steel rolling service doors, steel rolling fire doors and window shutters, Rol-Top sectional overhead doors, Bifold doors, rolling metal grilles and special applications and special type doors. The booklet is well illustrated and contains tables and scale details to aid in the proper selection of doors. The Kinnear Manufacturing Co., 174 N. Wacker Dr., Chicago 6, Ill.

If you are planning the modernization, renovation and new installation of elevators and dumb waiters—if you are confronted with perplexing lifting and lowering problems—tell us about them. Our engineering staff is at your service now ready to help and show you how Sedgwick elevators and dumb waiters reduce costs by making the vertical movement of men, material and merchandise safer, surer, more economical.

And we would like to reserve your copy of our new booklet "Standard Specifications for Sedgwick Elevators and Dumb Waiters." Write on your company letterhead—tell us how many you want—and we will make your service ready to help and show you how Sedgwick elevators and dumb waiters reduce costs by making the vertical movement of men, material and merchandise safer, surer, more economical.

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requests for literature

John Y. Sloan, architect, and John A. Beane, engineer, 296 Delaware Ave., Buffalo 2, N. Y. request literature and catalogues for an AIA file.

The Walker Art Center, 1710 Lyndale Ave. So., Minneapolis, Minn., is opening a Consumer Education Library and would like to receive manufacturers' catalogues dealing with home and neighborhood planning and design, home equipment, interior finishes and furniture.

Lakewood Inc., P.O. Box No. 944, Salisbury, N. C. (Att. of W. C. Heilman) would like to receive literature on prefabricated houses and equipment for prefab houses.

F. H. Wheeler & Co., Ltd., electrical engineers and contractors, 39 Victoria St., London, S.W.1, England, would like to receive literature from firms supplying materials and fixtures for lighting equipment and installations.
Standard Specifications for

DOUGLAS FIR

FACTRI-FIT DOORS

EASY TO SPECIFY - - MADE TO FIT STANDARD HARDWARE
- - THEY MEAN A BETTER INSTALLATION EVERY TIME!

Douglas Fir doors specified FACTRI-FIT reach the job completely machined—trimmed to exact size, gained, bored or mortised, ready to hang. The work is clean-cut, attractive, precise. There's less danger of marring or "butchering". And remember! Those doors will be available for ALL jobs the moment war restrictions are lifted today, of course, they can be specified only for essential building. Send for catalog showing the complete line— now.

FACTRI-FIT sizes; Doors pre-fit to exact net book standard stock sizes listed in the U. S. Commercial Standard 73-45. This means, for instance that a 2'-6" x 0'-0" Factri-Fit door is furnished exactly the specified width and length. Factri-Fit doors are scuff-striped for protection. Grade-marked for easy identification. Included in the line are basic 2-panel lay-outs, adaptable to all types of building.

FACTRI-FIT Gaining: 7" from top of door, 11" from bottom. Standard butt on 1 3/8" doors is 3 1/2" x 3 1/2" — on 1 3/4" doors. 4" x 4". square corners. Center gaining, recommended for heavy construction, is equal distance between other two. In routing, lips are left on to be knocked out by carpenter for right or left hand swing.

FACTRI-FIT lock Bore. All boring for locks to center knob 36" from bottom of door. Machine specifications that will be standard for all completely-machined Factri-Fit doors unless otherwise specified: Diameter of bore-in, 1 15/16"; length of bore-in, 3 3/4" from edge; face plate, 1" x 2 1/4" x 1/8"; square shape; cross bore, 5/8" diameter on 2 3/8" center. Virtually all nationally-distributed bored-in type locks will fit these specifications. Trend today is to bored-in locks. Doors can be ordered mortised, or machined to other specifications, on special order.

Douglas Fir

DOORS

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Tacoma 2, Washington

THE NATIONAL ASSOCIATION OF FIR DOOR MANUFACTURERS
The Wheeler, Osgood Company,
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Gentlemen:

In a talk today with your salesman about our opinion of factri-fitted TRU-SIZED doors, he remarked that you would like our personal opinion of them.

Speaking for the local branch of W. P. Fuller & Co., we have successfully used TRU-SIZED and machined doors on several emergency housing jobs, and thoroughly believe they were responsible for considerable saving in valuable time. They also contributed to a better job, and in our opinion were more economical than the old type of door installation, and in fact some of our large local builders in Tacoma have demanded TRU-SIZED doors for the above reasons.

Undoubtedly, the examples we are seeing today of better installations; better buildings; made possible through the use of TRU-SIZED and machined doors, will carry over into the post-war building era.

The dependability of a completely finished product like TRU-SIZED and machined doors, we believe will receive ready acceptability in the future on the part of the carpenters and builders.

Yours very truly,

W. P. FULLER & Co.

By

B. G. YOUNG. Manager

More and more builders are telling their jobbers, "Send us Tru-Sized Doors—they save time and money, and we get better finished jobs." Each Tru-Sized Door is a high quality product, finished to exact book opening size and ready to hang—no sawing—no planing—no fitting required. Time saved in installation averages 55 minutes per door and this saving can be increased to 70 minutes if doors are ordered fully machined for locks and hinges.

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Tacoma 1, Washington.

Please send me free literature and detailed guide sheet for ordering Tru-Sized Doors.

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YOU WRITE THE HAPPY BEGINNING!

Tomorrow's new home buyers will be wise buyers. They will expect from you what you always have wanted to give them ... homes with more comforts!

The problem of heating probably will be left more completely in your hands. And Bryant gas heating, backed, postwar, by the nation's most complete line of gas home heating equipment, often will supply your best answer. You will have a far wider choice of efficient, automatic gas-operated units, ranging from individual room heaters to complete central heating installations, equipment to accomplish zone heating for the large residence or to tuck away in a closet of the small basementless home.

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LET THE PUP BE FURNACE MAN
In our current advertising to the prospective home builder we say—

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"Make sure then for the home you are planning that hardware is given the consideration it deserves. Bring this matter up to him before specifications are written."

"Make sure then for the home you are planning that hardware is given the consideration it deserves. Bring this matter up to him before specifications are written."

Home builders rely on you to give proper consideration to this permanent construction item. They will expect you to advise them on how much will assure adequate hardware.

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Write for a copy of McKinney's new booklet, "Details and Data on Hinges."
CABOT'S and Gloss Collopaques

Design Problems Made Easy...
SIMPLIFIED DESIGN OF STRUCTURAL STEEL
By HARRY PARKER
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A clear, concise presentation of the basic principles and modern methods of structural engineering. This book covers the design of the most common structural steel members that occur in building construction, and by applying the fundamentals of mechanics to seemingly difficult structural problems, the solutions are greatly simplified. The inclusion of all necessary tables eliminates the necessity for additional reference books. Features illustrative examples, problems and their solutions.


(1945) 226 Pages Flexible Binding $2.75

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AF-645
You’re going to be asked if there are wars are over. You’re going to walk along streets and work in offices and eat in restaurants where the air makes you feel like a million dollars. You’ll feel like those P-38 “Lightnings” must feel that are built in factories where the air is “made up” as carefully as a doctor’s prescription.

You’re going to benefit from what companies like Worthington—an old hand at air conditioning—have done during the war... in aircraft factories, synthetic rubber plants, in research laboratories. Air Conditioning by Worthington will someday be everywhere, more efficient and more economical.

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A talk with a Worthington sales engineer does not obligate you in any way, but it may convince you that there’s more worth in Worthington.

Worthington Pump and Machinery Corporation, Air Conditioning and Refrigeration Division, Harrison, N. J. Specialists in air conditioning and refrigeration machinery for more than 30 years.
A product designer did... producing a new and improved grommet design using a special flame resistant Lumarith* CA formulation.

There are sound reasons why Jan De Swurt of Victory Manufacturing Company turned to Lumarith plastics when he developed the "Des-Grommet" for use on U.S. naval vessels. In abrasion tests using braided metal cable the Lumarith grommet showed less deterioration than did grommets made of lead, and caused far less wear to the braided cable than steel grommets did.

By taking full advantages of the physical characteristics of Lumarith, the Des-Grommet is designed to be self-locking, capable of blind installation (from one side of partition), and adjustable to as many as five different wall thicknesses. A special non-burning formulation of Lumarith CA (cellulose acetate) was used to meet Maritime Commission requirements for fireproof material.

The use of Lumarith in place of metal reduces production time and manufacturing costs. Grommets are injection molded in a matter of seconds—using multiple cavity molds. Finishing and polishing operations are reduced to a minimum. No machining, plating or enamelling is required.

The development of the Des-Grommet is a good example of the right approach to plastics. It is the type of project that the technical staff of Celanese is prepared to help you accomplish with your product. Your inquiries are invited. Celanese Plastics Corporation, a division of Celanese Corporation of America, 180 Madison Avenue, New York 16, New York.
One Door or More...

In large or small governmental, industrial, or commercial installations, the "OVERHEAD DOOR" with the Miracle Wedge may be depended upon for continuous, trouble-free operation. Built as a complete unit to fit any size opening, the superior materials and expert construction of this quality door insure perfect performance in all weather and all climates. When wartime restrictions are removed, The "OVERHEAD DOOR" will again be obtainable for home garages.

TRACKS AND HARDWARE OF SALT SPRAY STEEL

THE

OVERHEAD DOOR

TRADE MARK
WITH THE
MIRACLE WEDGE

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Any "OVERHEAD DOOR" may be manually or electrically operated.
Sold and installed by Nation-Wide Sales—Installation—Service.