HOW TO GET FLOORS THAT
LAST LONGER AND WON'T DUST

Concrete Floors

WITH LONE STAR CEMENTS

LONE STAR CEMENT CORPORATION

HEAVY-DUTY concrete is the right solution of many floor problems. This new Floor Book outlines practical construction methods, with clear-cut specifications for both new work and repairs. Also gives sound reasons why ‘INCOR’ 24-Hour Cement assures stronger, denser, more durable concrete, by curing THOROUGHLY in 24-48 hours, saving 5-7 days... with these advantages:

EXTRA WEAR—NON-DUSTING
—floors that stand up under hardest use

NO MARRED FLOORS
—dense, hard surfaces overnight

NO BUSINESS TIE-UP
—new floors for old over a week-end

FAST RECONVERSION
—place concrete today, use it tomorrow

Write for copy of Concrete Floor Book—address Lone Star Cement Corporation, Room 2207, 342 Madison Ave., New York 17. You will find this new book unusually practical and helpful.

LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD’S LARGEST CEMENT PRODUCERS:
15 MODERN MILLS, 25-MILLION BARRELS ANNUAL CAPACITY...OFFICES: ALBANY - BIRMINGHAM - BOSTON
CHICAGO - DALLAS - HOUSTON - INDIANAPOLIS - JACKSON, MISS. - KANSAS CITY, MO.
NEW ORLEANS - NEW YORK - NORFOLK - PHILADELPHIA - ST. LOUIS - WASHINGTON, D. C.

18 Years' Outstanding Performance... ‘INCOR’... America's FIRST High Early Strength Portland Cement

APRIL 1946
CECO EXPANDS

In construction products CECO ENGINEERING
ITS MANUFACTURING PLANT TO BETTER SERVE YOU

In 1946 Plant Enlargement exceeding 50% starts a development Program encompassing 14 Plants and 23 Sales Offices Coast to Coast

Ceco's great expansion program is already underway. From coast to coast, Ceco plants, warehouses and offices will be enlarged by hundreds of thousands of square feet. Expansion of the great plant in Chicago is already far along and should be completed by summer. The enlarged plant will be one-fifth of a mile in length. Expansion of other plants will follow as rapidly as conditions permit... This means just one thing to you—even greater service than in the past. As Ceco looks to the future, they have one supreme goal—to make available to you an adequate supply of precision-engineered construction products—where you want them—when you want them.

Now CECO Engineering Means More Than Ever Before

Ceco construction products of every class have always been famous for their perfection and precision engineering, for Ceco builds small with the same skill it builds big. Now, with our new expansion program, you can count on even greater availability of Ceco products, together with the skilled technical engineering service that is always at your command.

CECO STEEL PRODUCTS CORPORATION
MANUFACTURING DIVISION
5645 WEST 26TH STREET, CHICAGO 50, ILLINOIS
Concrete Engineering Division,
Merchant Trade Division, Highway Products Division
Offices, Warehouses and Fabricating Plants in Principal Cities

makes the big difference

A Partial List of CECO Products

Metal Windows and Doors
Metal Frame Screens
Metal Weather Strips
Steel Joists, Steel Roof Deck
Metal Lath
Reinforcing Steel
Highway Products
Double-Drain Roofing

Mail This Handy Coupon For FREE Ceco Catalogs

CECO STEEL PRODUCTS CORPORATION
5645 West 26th Street
Chicago 50, Illinois

Please send me catalogs checked below:

☐ Windows and Doors ☐ Steel Joists
☐ Screens ☐ Steelforms

Name: ..................................................
Address: ..............................................
City: ................................................... State: ..........................
Here's something new in all-weather driveway ideas, that will eliminate sessions with snow-shovel, cinders and salt after every snowfall ... and that every client whose garage driveway is on a grade will welcome. It's Byers Snow Melting.

In the driveway pictured, the slope was 15°, and the lightest fall of snow would of course mean difficulty in getting cars in and out. A Byers Snow Melting installation completely solved the problem.

A 4-inch crushed rock fill was laid as a foundation, on which a grid of Byers Wrought Iron pipe was placed. This consisted of two 2-inch header pipes, with twelve lengths of 1 1/4-inch pipe running between them. A 2-inch supply main from the boiler runs through an insulated tile conduit to the top header, while a 2-inch return line taps the foot of the grid on the opposite corner. A fill-pipe is installed in an underground box with removable traffic plate at the highest point in the grid, and an air vent included at the same location. Water is heated by a gas boiler, and circulated by pump. Provision is made for draining, but since anti-freeze protects the system to -10°, this has never been necessary. Several heavy snowfalls have already given the installation some real service-tests, and not a flake has remained on the driveway.

This is only one of several such installations and owners have been uniformly enthusiastic. In one, a half-inch of ice was removed in 20-minutes, and a 15-inch snowfall in two hours . . . at an estimated cost of 60-cents for gas. Installations are currently on the boards or projected in loading platforms, sidewalks around metropolitan buildings, and airport runways.

Wrought iron plays an extremely important part in making a successful installation. Its rate of heat emission is high. It can be safely embedded in concrete, for it expands and contracts at practically identical rates with this material. It can be easily formed and welded. And it has unusual resistance to the corrosive conditions that are encountered.

Our Case Study No. 4, "Byers Snow Melting Systems," will give you some interesting information. Ask for a copy. And remember Byers Wrought Iron Pipe is available in quantity for any project.


"ETERNALLY YOURS"—professionally-produced 16mm sound motion picture. An entertaining saga of the wrought iron industry, available to technical groups. New, authentic, informative. Write Modern Talking Picture Service, Inc., 9 Rockefeller Plaza, N. Y. 20, N. Y.
THE QUALITY OF HOUSING WILL BE STRAINED .......................... 71
An Editorial, by Kenneth K. Stowell

SCHOOL TRANSFORMATION FOR THE NORTHEAST .................. 72

DISPORTING IN FLORIDA SUNSHINE ................................. 82
Marcel Breuer, Architect

LOOK HOMeward, HOUSING! ........................................... 86
By Vernon De Mars

SHOW PLACE LIKE HOME .............................................. 90
Fritz B. Burns Research House, Los Angeles, California

SALES ROOM FOR BLOOMER DISPLAY ................................ 100
Showroom and Offices for Empire Bloomer Company, New York City. José A. Fernandez, Architect

SHOWROOM FOR COSMETICS .......................................... 102
Offices and Showrooms for Mem Company, New York City. Hans Weiss, William Basser, Designers

AIR LINE OFFICE WITH A LIFT ........................................ 104
Ticket Office for Eastern Air Lines, Boston. Marcel Breuer and Hugh Stubbins, Jr., Architects Associated

BUILDING TYPES STUDY NO. 112 ... COLLEGE DORMITORIES .... 106
WHAT DO THE COLLEGES REALLY WANT? ............................ 107
By Hugh Stubbins, Jr.

FACTORS IN DORMITORY PLANNING .................................. 109

PLEASANT LIVING ......................................................... 110
Sorority House, Berkeley, Calif. Gardener Dailey, Architect

COMPACT DORMITORY PLAN ........................................... 112
Colby College. Jens Frederick Larson, Architect

PLANNING FOR DORMITORY FOOD SERVICES ......................... 118
By Mary de Garmo Bryan

DORMITORY MAINTENANCE ............................................... 122
By Style and by Common Sense. By Lewis S. Beach

TIME-SAVER STANDARDS ... Dormitory Plan Elements ............. 127

THE RECORD REPORTS ... News from the Field ....................... 7

HOME BUILDERS CONVENTION ........................................ 20

CONSTRUCTION COSTS INDEXES ......................................... 23

FOR BETTER BUILDING ................................................ 26
News of Materials, Equipment and Methods

MANUFACTURERS' LITERATURE ........................................ 32

REQUIRED READING ..................................................... 132

INDEX TO ADVERTISEMENTS ........................................... 196
One of the big reasons why flush valves are so widely used is that they save water.

While this is generally true, the full savings possible with flush valves are never realized unless attention is given to one simple fact.

You get maximum savings only through the use of flush valves that can be adjusted to the actual water needs of the fixtures on which they are installed.

Fixtures vary in their water requirements and frequently as much as one gallon per flush can be saved by individual adjustment.

In a building with 200 flush valves, this saving would be 1,168,000 gallons per year—and that's real savings in dollars and cents. Figure your savings in the table below.

With Watrous Flush Valves you get maximum water savings on every fixture because every Watrous Flush Valve, in both diaphragm and piston types, has the Water-Saver Adjustment.

This simple screw-driver adjustment, taking only a few seconds, is one of the reasons why the selection of Watrous Flush Valves is a source of constant satisfaction over the years to everyone concerned.

**Estimated Annual Savings of Water Obtainable Through Proper Regulation of Flush Valve to Actual Water Needs of the Fixture.**

<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 1/2 gal. saved per flush</td>
<td>291,000 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>
</tbody>
</table>

For complete information on Watrous Flush Valves see Weir's Catalog or write for Catalog No. 46A. Also ask for Bulletin No. 471 giving a summary of "Architects Views on Flush Valve Applications."
THE RECORD REPORTS

All Washington Busy on Housing Problem• Wage-Price Policy Set • Lumber Ceilings Lifted • Construction Volume Forecasts Are Shifted • Wyatt Program Draws Fire

In these invigorating days of spring and approaching baseball, Uncle Sam has been knitting his brows over his own team in the 1946 building season. With Wilson Wyatt as his top-flight manager, he has drawn blueprints of strategy and mapped an unparalleled year for the nation's "spotlight" industry—but the going may be tough.

The city of Washington itself has been a beehive of preparation—from the White House to Capitol Hill to NHA. The whole governmental team, comprising every unit with any construction connections whatever, has been throwing its plays to fit the Wyatt Strategy. To cite a few examples:

**Bureaus Aid Expediter**

Civilian Production Administrator John D. Small, muscled with WPB's wartime powers, drew up regulations "drastically curtailing commercial and industrial construction work" and warned that "anyone who now starts construction runs the risk of not being permitted to finish the job."

He maneuvered the reopening of three blast furnaces and the stepping up of output among others to increase foundry products for housing as well as other critical public needs.

**Some Programs Deferred**

The Inter-Departmental Committee on Construction agreed to defer federal programs which would compete with housing for men and materials. It threw support to community facilities such as streets, sewers, waterworks and other utilities essential to new homes.

This over-all group—representing the Federal Works Agency, Agriculture, Commerce, Interior, the War Department and NHA—decided to restrict other federal activity to roads, flood control, reclamation and river-harbor projects.

General E. B. Gregory, of the War Assets Corporation, told Wyatt, in an official communication, that "an important step... would be... a program to utilize surplus plants in the manufacture of prefabricated houses." He suggested that "airframe plants are especially suited to this work because of their wide bays and high clearances."

**FHA Sets Fee**

FHA's Raymond M. Foley advised buyers to help combat inflation by using FHA-insured mortgage loans. He put into effect a policy of charging a minimum $10 fee for an appraisal under "conditional insurance commitments on new homes."

FPHA Commissioner Philip M. Klutznick reported the assigning of tens of thousands (the figure had surpassed 80,000 early in March) of surplus war housing units to cities and colleges to house veterans and their families, and told of the programs in the conversion and moving of tens of thousands of additional units.

**Congress Gets Busy**

Congress hustled along its housing ideas in the first days of spring, agreeing here and there with the Wyatt wishes, elsewhere tearing them to pieces and tossing them to the four winds. Biggest furore came over price ceilings on homes; question arose, too, over subsidies to speed the production of building materials. Many hesitated to see subsidies used even in an emergency.

Both the Patman Bill on emergency controls and the broad Wagner-Ellen-der-Taft National Housing Bill for a long-time program moved to the forefront of discussion.

**Wyatt Marshals Forces**

Meanwhile, Expediter Wyatt was swinging into the building emergency with a wartime tempo. He marshaled his forces and arranged his controls almost as rigidly and forcefully as the War Production Board had done before either Germany or Japan fell.

Even his personnel he stepped up into wartime fervor by packing them into an early morning mass meeting in a large Washington theater and advising them in detail of the task ahead, a "record-breaking job never done in history before." Many went back to increased working hours while the rest of the government departments continued to enjoy a five-day week.

**Wage-Price Policy Set**

Coincidentally, the Truman administration was fitting to specific industries and instances its new wage-price policy. Details weren't easy to work out and warnings elbowed their way into public attention along with detailed instructions and regulations.

To the building trades, the National Wage Stabilization Board issued the following official statement: "Wage increases in the Building and Construction Industry which have not received the prior approval of the Wage Adjustment Board are still illegal and are still subject to the penalties prescribed by the Stabilization Act."

It was explained that direct wage control in this industry had been continued after V-J Day because of special inflation.

(Continued on page 10)
In the evolution of building design, fenestration has assumed greater and greater importance. Window areas have become larger, more functional. And the glass used to glaze them has become correspondingly more important. That is why so many architects rely on Pittsburgh Polished Plate Glass as a glazing material today.

This glass assures windows of outstanding beauty and clarity for public buildings of all kinds... from clinics to recreation centers. Providing clear, undistorted vision and brilliant, polished surfaces, Pittsburgh Plate Glass is available in various types and colors to meet specialized needs. Architects: Elizabeth and Winston Close.
Sanitation in public building washrooms is often determined by the material used for walls and partitions. Carrara Structural Glass is a modern material that permanently retains its polished beauty and excellent sanitary properties. It is easy to keep clean. It will not check, craze, stain, nor fade. It is impervious to water and pencil marks. Ten colors of Carrara are available to help the architect achieve attractive washroom designs. Architects: Marr & Holman.

Architects are finding many new design possibilities for entrances since the development of Herculite Tempered Plate Glass. Sturdy, handsome doors of crystal-clear Herculite help to create entrances that are distinctive and impressive. In the application shown, inner and outer doors are of Herculite, with an over-door panel of lustrous Polished Plate Glass.

Windows of many mullions are often a desirable element of design in large buildings. And Pennvernon Window Glass has consistently proved itself eminently satisfactory for glazing the many small openings that such mullioned windows present. Pennvernon has a degree of clarity, beauty and freedom from distortion exceptional in a sheet glass. And for this reason is well suited for use in buildings such as this hospital in Richmond, Va. Architect: Baskerville & Son.

We believe you will find much to interest you in our new illustrated booklet of ideas concerning the use of Pittsburgh Glass in building design. Send the coupon for your free copy.

* Design it better with

Pittsburgh Glass

PITTSBURGH PLATE GLASS COMPANY

APRIL 1946
tionary problems involved. The new wage-price policy did not change the situation.

That OPA ideas would gain rather than lose out in the over-all shifts in price policy was indicated when Chester Bowles was boosted into Collet's post as Stabilization Director. But Bowles knew that his course would be difficult since many close advisers to the administration held opposite views.

Lumber Ceilings Lifted

Paul Porter, after he took Bowles' OPA seat, went along with the Bowles policies. Interesting are some of the Agency's concurrent pricing actions. Effective February 25 was a "complete revision" of ceiling prices for prefabricated homes made mostly of wood. The change permits prices based on current material and labor costs instead of those in 1942, plus 36 per cent mark-ups for manufacturers and 10 per cent for re-sellers.

OPA got authority from the Stabilization Office, one of Collet's parting contributions, to allow an increase of $3.25 per thousand board feet in the average mill price of Southern pine lumber. Tied to production goals set by the Civilian Production Administration, the increase may be continued beyond August 15 if output for the first half of the year is sufficiently high.

It was at this time that OPA was working, too, on establishing mark-ups for direct mill shipments on Douglas fir, Western pine and other softwood lumber in order to improve distribution of construction lumber, particularly to small retail yards.

Other OPA changes: oak, pecan and miscellaneous hardwood flooring, 10 per cent increase in manufacturers' ceilings; plaster lath, a temporary four-month boost in ceilings of $4.00 per thousand pieces.

In anticipation of Congressional price control action, the OPA made ready a Building and Construction Price Division with Gordon Rieley, of Cleveland, as director.

"Expeditious and maximum cooperation with the national housing programs" was cited as the purpose of the new division, which took over pricing of most building materials and of prefabricated building equipment. It controls lumber prices at the distribution yard level.

Federal Forecasts Shift

Impact of the Wyatt drive to defer industrial and commercial construction, with pointed attention to theaters, brought a readjustment of federal forecasts of construction volume for 1946. The Commerce Department's alert Construction Division, which earlier had estimated a $7.5 billion total, upped the figure to $9 billion and reshuffled the

(Continued from page 7)

NEW BUILDING

Store Modernization

Construction will be started soon on the first phase of the $5,000,000 building and modernization program of Frederick & Nelson, Seattle division of Marshall Field & Company. Architects are John Graham, Seattle, and Skidmore, Owings & Merrill, Chicago.

In the initial stage of the program, expected to take about two years to complete in its entirety, will be included the partial construction of the sixth, seventh and eighth floors, installation of wide escalators with special safety features, and new, fast elevators. Selling area on the main floor will be increased more than 20 per cent by the removal of the freight concourse from the first floor to the basement level. Filling in the light well on the north side of the building and removal of store offices to the new upper floors also will add several thousand feet of space on each floor.

Other improvements included in the first phase will be an entirely new lighting and ventilating system on the main floor. Later, lighting throughout the entire store will be improved and the ventilating system will be extended to other areas of the store.

Station Master's Office

A new three-story extension to the station master's office at Pennsylvania Station, New York City, has been completed.

The extension includes a public reception room, the station master's general and private office, other office space, wash rooms, utility rooms, control room, announcement board, and information booth. The exterior is finished in Tennessee marble, with ornamental details in bronze. Acoustical ceilings, asphalt tile floors and fluorescent lighting are used throughout. Architects were McKim, Mead & White, of New York City.

(Continued on page 13)

A special entrance for the Men's Shop is planned by Frederick & Nelson, Seattle

ARCHITECTURAL RECORD
The new Nesbitt "Package" for health, comfort and utility includes Nesbitt Syncretizer Unit Ventilators and Nesbitt Convectors integrated with steel shelving. School planners, architects and engineers can draw this modern classroom ensemble into their blueprints and write it into their specifications today. Nesbitts now make all the units of this complete "Package"—Nesbitt Syncretizer Unit Ventilators, Nesbitt Convectors and Nesbitt Steel Classroom Shelving Units.

Long a neglected problem in schoolroom layout, the provision of adequate storage space is here disposed of in the modern manner of combining utility and beauty.

Two factors put the Nesbitt "Package" well within the reach of every school:

1. The durable steel shelving units (in various widths) are made by production line methods.
2. The fuel savings of "Syncretized Air" prove in most cases to be sufficient to pay, within a reasonable time, for the installation of Nesbitt Syncretizers.

If you have school building or modernizing plans on your desk, let us discuss with you the place in those plans for the Nesbitt "Package."

Made Exclusively by JOHN J. NESBITT, INC.
State Road and Rhawn Street, Philadelphia 36, Pa. • 11 Park Place, New York 7, N. Y. • Sold by Nesbitt and American Blower Corporation

APRIL 1946
Survey after Survey Shows Women PREFER Electric Ranges

Wire Your Houses For Electric Ranges

PROOF of the overwhelming trend toward Electric Cooking is found in survey after survey made by such leading national magazines as *Woman's Home Companion, *McCall's, *Household, *Successful Farming and *Country Gentleman.

Women prefer the convenience, cleanliness, dependability and economy of modern Electric Cooking.

Cash in on this growing demand. Wire the homes you build for Electric Ranges. Built-in, the cost of such wiring is negligible — the selling power tremendous.

Electric Range Section, National Electrical Manufacturers Association,
155 E. 44th Street, New York 17, N. Y.

12 ARCHITECTURAL RECORD
THE RECORD REPORTS

(Continued from page 10)

amounts for each type. It boosted resi-
dential construction from $2.25 to $4.57
billion, sliced "non-residential private"
activity from $3.45 to $2.85 billion, and
public construction from $1.80 to $1.58
billion.

In working out its figures, CD as-
sumed that in the non-residential cate-
gory work already under way would not
be stopped, that enough materials
would be produced to meet unrestricted
requirements, that construction costs
would remain roughly at existing levels.

Store Remodeling Urged

Another unit of the Commerce De-
partment advised owners of small and
medium sized stores to draw plans now
for modernization and remodeling so as
to be ready when suppliers can fill orders.

New Credit Wrinkle

A new wrinkle in housing credit comes
from Jesse Jones' old bailiwick — the
Reconstruction Finance Corporation.
That multi-billion dollar agency is ex-
tending its blanket participation
agreement with banks (loan guarantee up to
75 per cent) to cover loans to contractors
and other businesses interested in
building residences.

News of this decision came as the
Federal Home Loan Bank Administra-
tion reported that non-farm mortgage
financing reached $5.6 billion last year,
but that the reduction of interest
rates has been, by the end of the year.
Present expansion plans are intended to
enable the company to produce at the
rate of over 26,000 houses in 1947.

The houses are designed to incorporate
the new central utility unit which is being
manufactured by the Ingersoll Steel Di-
vision of Borg-Warner Corp. (see p. 162).
Also featured is the use of W eldtex, a
striated plywood designed by Mr. Deskey
and developed in collaboration with the
U. S. Plywood Corp.

How Many Prefabs?

Shortly before Wilson Wyatt made public
his program calling for 850,000
permanent prefabricated houses in 1946
and 1947, Prefabricated Homes completed
a survey of leading prefabricators to as-
certain their estimated 1946 production
total. According to the results, 37 pre-
fabricators alone expect to produce about
131,175 houses in 1946, and after 1946
the majority of prefabricators expect to
double or treble annual production. Of the
41 prefabricators who stated the price range
on their houses, the largest
grouping is within the $2,000 to $3,500
classification. The survey also indicates
that the majority of prefabricators will
market their houses through dealer or-
ganizations, intend to assume responsi-
bility for erection of houses, and will de-
vote the houses to the site in panel form.

WHAT THEY SAY...

A bout the Wyatt Program

"We believe...it will be a serious
mistake to devote an excessive share of
construction facilities to the production
of housing; for this will inevitably result
in a lack of places of employment, schools,
hospitals and community facilities which
will seriously interfere with job opportu-
nities and the welfare of the veteran and
the total cost of house and land. Paint-
ing, plumbing, heating, electrical work,
general contractor's overhead, and land
make up the remainder. A compre-
henive approach to cost reduction requires
that every effort should be made to re-
duce the cost of each of these items,
however small."

PREFABRICATION

New Corporation

Formation of a new corporation to
design, manufacture and distribute com-
pletely equipped factory fabricated houses
at erected prices to the owner ranging
from $4,997 to $5,891 has been announced
by Donald Deskey, industrial and archi-
tectural designer.

The new corporation, Shelter Indus-
tries, Inc. (630 Fifth Ave., New York 20,
N.Y.), has already started production in
its East Coast manufacturing facilities,
and volume production is expected to
make houses available at the rate of 200
per month before the end of the year.

Present expansion plans are intended to
enable the company to produce at the
rate of over 25,000 houses in 1947.

The houses are designed to incorporate
the new central utility unit which is being
manufactured by the Ingersoll Steel Di-
vision of Borg-Warner Corp. (see p. 162).
Also featured is the use of W eldtex, a
striated plywood designed by Mr. Deskey
and developed in collaboration with the
U. S. Plywood Corp.

The houses are designed to incorporate
the new central utility unit which is being
manufactured by the Ingersoll Steel Di-
vision of Borg-Warner Corp. (see p. 162).
Also featured is the use of W eldtex, a
striated plywood designed by Mr. Deskey
and developed in collaboration with the
U. S. Plywood Corp.
Adlake Aluminum Windows offer many advantages for so little more. Elimination of excessive air infiltration, finger-tip control, no warping or sticking—thanks to an exclusive combination of nonmetallic weatherstripping and serrated guides. What's more, they're beautifully designed for lasting architectural appeal and efficiency. We believe you'll find it well worth while to get full information about Adlake Windows before specifying or detailing any window.

**The Adams & Westlake Company**

*Also window makers to the transportation industry*

*Established 1857 - Elkhart, Indiana - New York • Chicago*
When the waste lines of a building become clogged because of inadequate or faulty drainage, its life is choked off. Water supply must be stopped... tenants are inconvenienced... damage occurs... and an expensive repair operation is often required to restore the building to normal. To prevent this from happening, specify Josam Non-Clog Triple Drainage Drains. Their exclusive features shown below provide for uninterrupted drainage... a safeguard against clogged drain lines. Why take chances when the drains cost so little compared with the investment in a building? Specify the best—Josam!

**Plan for Constant Action**

...Only **Josam** Non-Clog Triple Drainage Drains Provide This Exclusive Protection

1. **Normal Drainage**
2. **Double Drainage**
3. **Triple Drainage**

Exclusive "three-way" performance not only assures continuous, uninterrupted floor drainage in spite of accumulated debris, but also 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). Another exclusive feature is that the strainer fits into the sediment bucket. After being cleaned, sediment bucket must be replaced, otherwise strainer will not fit into place... a positive safeguard against carelessness in cleaning! For complete information on the many types of Non-Clog Drains send coupon below.

**Josam Manufacturing Company**

Executive Offices, 302 Empire Bldg., Cleveland 14, O. Manufacturing Division, Michigan City, Ind.

Representative in all Principal Cities

Josam-Pacific Co., 765 Folsom Street, San Francisco, California
West Coast Distributors

Empire Brass Company, Ltd., London, Ontario
Canadian Distributors

See our Catalog in Sweets. Member of the Producer's Council

**Further Information Free**

Josam Manufacturing Co., 302 Empire Bldg., Cleveland 14, Ohio

Send me complete illustrative details on Non-Clog Triple Drainage Drains.

Name ____________________________

Firm ____________________________

Address ____________________________

City ____________________________ State ________
A New Bathroom Cabinet

with important features never before offered

1 Two Personal Compartments for every day needs.

2 Utility Shelf, for cosmetics or shaving equipment when in use.

3 "Safe-T" Compartment, for poison drugs and other adult items . . . out of reach of children. Opens by pressing button on top of cabinet.

4 Tooth Brush Holder, inside the cabinet.

5 Razor Blade Disposal.

The Parkway has adjustable glass shelves, full-length piano hinges and a No. 1 polished plate mirror in chrome frame. The bonderized all-steel cabinet is zinc-coated, finished in white baked enamel; swinging panels, chrome with white enamel trim.

New home builders will appreciate the exclusive features of the Parkway. It is in perfect harmony with today's beautiful bathrooms. For remodeled homes, it's a tonic for jaded bathrooms.

Include the Parkway in your designs today for the homes of tomorrow. Circular and prices on request.

Faries Manufacturing Company

DECATUR, ILLINOIS

THE RECORD REPORTS

(Continued from page 13)

... the proposed program would obstruct and hinder the building construction industry in the United States by preventing labor and material from being used in any type of building except housing and by throwing out of work a large number of veterans who are building construction men and shop workers ...” — Board of Governors, New York Building Congress, Inc.

"The only way to insure the necessary increase in the output of scarce materials and equipment needed for home building is to make adjustments in price ceilings. ... Under the premium-payment subsidy plan, the manufacturer would be faced with the fact that every increase in efficiency would be accompanied by the risk of having the subsidy reduced or removed, thus giving him no reason to strive for lower costs.” — Douglas Whitleck, The Producers' Council, Inc.

"There are two paths to take in making housing available to veterans. Putting the subsidy into brick and nails is one. It will result in a distortion of the whole housing economy, in the attempt to keep housing below the advancing price levels of the rest of the economy. The other path is to recognize candidly that there is a high price level and that there will continue to be as long as there is deficit spending by the government. The direct course to follow, then, is to help the veteran directly to meet the price level . . . The subsidy should be in the form of a credit which . . . could be used as part of the down payment on a home or issued as certificates to pay a portion of rent over a period of time.” — National Association of Real Estate Boards.

ARCHITECTS FOR UNO

The American Institute of Architects has announced a committee of 16 leading architects to assist in developing means of obtaining the finest talent the profession can produce throughout the world to design the new UNO capital.


(Continued on page 18)
The Tyler, one of a series of Pittsburgh Reflector Company's new Fluorescent Luminaires, is especially designed to meet the requirements for a highly efficient and flexible luminaire adaptable to a wide range of applications.

The Tyler and its companion units, The Wilson, The Jefferson, The Madison and The Van Buren, are outstanding fluorescent luminaires... but they represent only a small segment of the diversified line of Fluorescent and Incandescent Lighting Equipment designed by Pittsburgh Reflector Company to meet every lighting requirement—interior and exterior ... commercial, industrial and institutional.

If you want up-to-date illumination, take full advantage of the "planned lighting" possible with Pittsburgh Permaflector Equipment. Your nearest Permaflector Lighting Engineer will gladly give you every assistance in choosing the best lighting for your needs. And remember—Pittsburgh Permafectors are simple to install, easy to maintain and provide maximum lighting efficiency... as well as flexibility of application.

Pittsburgh Reflector Company

OLIVER BUILDING • PITTSBURGH 22, PA.
MANUFACTURERS OF PERMAFLECTOR LIGHTING EQUIPMENT DISTRIBUTED BY BETTER ELECTRICAL WHOLESALERS EVERYWHERE
Permaflector Lighting Engineers in All Principal Cities

APRIL 1946
IDEAL for large dimension tracing sheets calling for extra long lines of unvarying width. Rectangular-shaped, HI-DENSITY Lead sharpens to a super-efficient chisel point that delivers greater line production between repointings. Test this exclusive EBERHARD FABER time-saver at any accredited "Van Dyke" Dealer.

Chisel Point Leads come in degrees: 6H, 4H, 2H, HB, 2B, 4B. Round Leads in 18 degrees from 9H to 7B.

THE RECORD REPORTS

(Continued from page 16)

AID FOR VETERANS

Industrial Design

The Society of Industrial Designers, Room 672, 55 W. 42nd St., New York 18, has inaugurated a program of aid to veterans interested in preparing for the field of industrial design. Veterans wishing guidance and information concerning the field are invited to talk with the executive secretary and to consult the large collection of university catalogs which the Society has assembled. In addition, a simple job placement program has been established for veterans who feel qualified for immediate positions in the field.

Construction Industry

The Committee on Opportunities for Veterans in the Construction Industry has issued a booklet, "Opportunity Unlimited," outlining the industry as a whole and its component parts. Specific information on qualifications for the various fields, such as architecture and engineering, apprentice training, salaries, sources of information, and government benefits, are included. A separate chapter is addressed to the employer.

A similar booklet, "New Career Opportunities in the Building Industry," has been issued by the Johns-Manville Corporation.

Air Conditioning

To meet the need of a thorough educational program in engineering, production, sales, service, and factory management for its employees and for its returning veterans, York Corp. has opened its Institute of Refrigeration and Air Conditioning, a school with a potential capacity of 1,000 students annually. It will provide courses ranging in duration from a five-year cooperative engineering course run in conjunction with Pennsylvania State College, to a two-week "refresher" course.

Libraries Needed

A nation-wide campaign looking toward restoration of engineering libraries in war-devastated areas overseas has been announced by The American Society of Mechanical Engineers through its Committee on International Relations. An appeal has been issued to engineers throughout the country to assist with gifts of technical books and periodicals to replace those lost or destroyed. Donations of money will be used to buy new books for foreign technical libraries.

Supporting the movement besides the A.S.M.E. are four other national engineering societies: American Society of Civil Engineers; American Institute of Mining and Metallurgical Engineers;

(Continued on page 136)
The light steel Junior Beams are easy to place. They are spaced by a spreader board which has been cut to the correct width for four eight-inch form boards.

Underside of forms showing how a fire stop is provided by form at the wall. Form lumber is salvaged and used for roof sheathing.

Increase your profits and selling points!

Many builders find they can increase the profits on their houses by installing J&L Junior Beam steel and concrete floors. Compared to conventional floors the extra cost will be slight but the elimination of return trips to repair plaster cracks, trim sagging doors and stuck windows more than makes up the difference. This non-shrinking floor is simple to install and your prospect can quickly see the advantage of the vermin proof, termite proof, fire resistant, rigid floor which also provides a clean, neat basement ceiling.

Jones & Laughlin Steel Corporation
Pittsburgh 30, Pennsylvania

April 1946
it was evident that there isn't time or inclination to change materially the technology of building houses. In any case, of the builders showed any concern of seeing many... 20
tutions of seeing many would have been disappointed, but few of them. And if Mr. Wyatt stole the show both sides - the builders wishing they could get immediate deliveries, the equipment was plainly evident in the consideration of his various expedients. Even a master
swell of builders' reaction. Even a master
of the exposition rooms was the
Expediter, guest speaker; Joseph Meyerhoff, incoming president

**"ALL WE ASK IS MATERIALS," SAY HOME BUILDERS IN CONVENTION**

"Give us the materials, and don’t worry about anything else in the housing program." Thus did some seven thousand delegates to the convention-exposition of the National Association of Home Builders express themselves through a busy week of exhortation and discussion of the Wyatt housing program. This simplification was not so much an official pronouncement as a ground swell of builders' reaction. Even a master selling job by Wilson Wyatt, housing

feeling of disillusionment at the drawings showing the houses that the builders propose to construct as soon as materials become available. While these houses showed some improvement over previous years in planning and mechanical layout, the expression of the buildings in architectural terms was disappointing. Many of the houses were devoid of any imagination or inspiration, being in an intermediate style that was neither modern nor traditional; there was little coherence or organization about the arrangement of the various features; and there was much that was meretricious and pretentious in the detail. The ideal house of tomorrow was definitely not in evidence here, and the inevitable conclusion must be that there is still much need for manufacturers of prefabricated units, but materials would be fairly given to manufacturers of prefabricated units, the same as if they were fabricated units were not contemplated, no premium would be

**Wyatt Proves Persuasive**
The event of the week was the speech delivered by Wilson Wyatt, Housing Expediter. The keynote of his talk was cooperation and sustained effort. So convincing was his presentation of the details of the program, and so persuasive were his arguments, that the Association had previously been violently opposed to his proposals, his remarks were very cordially received, and on the following day the executive committee of the Association went on record as endorsing many points in his plan.

Mr. Wyatt characterized the present crisis in housing as a challenge, a responsibility and an opportunity that the home builders of America must do everything in their power to meet. He
cited statistics to show that in addition to the shortage of a million homes as of October, 1945, when demobilization started, by the end of 1946 there will be an additional deficiency of 2,700,000 homes, which will increase by the end of 1947 to 3,200,000. The government will be able to accommodate in emergency housing only about 200,000, leaving the balance to be taken care of by private enterprise. The full capacity of prefabricators of houses and parts of houses, as well as that of conventional builders, must be tapped, he said, for production goals are so huge that their achievement will require maximum participation from all productive sources. Despite the best efforts of everyone, said Mr. Wyatt, success of the program would still leave doubling-up and overcrowding worse at the end of 1947 than in October, 1945. Meanwhile no progress will have been made in the replacement of 10,000,000 substandard dwellings.

**Terms Premiums Vital**
Any regulation that was proposed to help alleviate the situation, he declared, would be definitely of a temporary nature, and would be discarded as soon as it had served its purpose. However, under the circumstances he felt that it would be necessary for the government to exercise close supervision not only over building activity, but over the production of building materials as well. In this connection he declared premium payments to be an essential part of his program, in order to assist the producer in getting started, and to offset some of the abnormal risk. It was not his intention to employ premium payments generally, for where analysis indicated that price increases would be more effective in securing increased production, the latter would be approved. Where premium payments were established, such premiums would apply only to the portion of production in excess of the normal amount, and where no increase was accomplished, no premium would be paid.

Premium payments for finished prefabricated units were not contemplated, the Expediter declared, although payments might be made on materials going into such units, the same as if they were to be used in site-built houses. Likewise, preferred priority ratings would not be given to manufacturers of prefabricated units, but materials would be fairly apportioned.

**Price Levels Flexible**
Mr. Wyatt stressed the fact that the home cost ceiling would be set at $10,000, although it was hoped that the greater part of the available labor and materials could be channeled into houses at $6,000. This $6,000 figure, he added, must be

(Continued on page 154)
Why are some roofs
like the peaches on the top of the basket?

There is a saying that the Huckster's reputation is on the top of the basket, and that somewhere near the bottom you come upon his character. A roof is like that.

To make certain that the roofing materials which can't be seen when the roof is completed match the fine, quality-look of the finished job, specify Koppers Coal Tar Pitch and Approved Tarred Felt. These products are as good "on the bottom of the basket" as they are on the top. Roofs built of coal tar materials have records of 20, 30, 40—and even more—years of satisfactory service. They require little or no maintenance.

Specify Koppers coal tar pitch roofing materials.—Koppers Company, Inc., Tar and Chemical Division, Pittsburgh 19, Pa.
Since 1870 this organization has manufactured bronze, aluminum and nonferrous metal products to meet virtually every building requirement. During this time a large part of our work has been the faithful reproduction, in metal, of architects' creations and plans. Today we are in an even better position to handle this class of business. So, whether it be new construction or a remodeling job, don't overlook the products and service offered by Michaels. Write for more details. The bronze door illustrated above is only one of many Michaels products. A partial list is given in the next column.

**THE MICHAELS ART BRONZE CO., Inc., Covington, Kentucky**

Manufacturers since 1870 of many products in Bronze, Aluminum and other metals

**MICHAELS PRODUCTS**

- Fixtures for Banks and Offices
- Welded Bronze Doors
- Elevator Doors
- Elevator Enclosures
- Check Decks (standing and wall)
- Lamp Standards
- Marquise
- Tablers and Signs
- Name Plates
- Astragals (adjustable)
- Railings (cast and wrought)
- Building Directories
- Bulletin Boards
- Stamped and Cast Radiator Grilles
- Grilles and Wickets
- Kick and Push Plates
- Push Bars
- Wrought Iron and Bronze Lighting Fixtures
- Wire Work
- Cast Thresholds
- Extruded Thresholds
- Extruded Casements and Store Front Sash
- Bronze and Iron Storefronts
- Bronze Double Hung Windows
- Bronze Casement Windows

**BOECKH INDEXES OF CONSTRUCTION COSTS ARE BACK FROM WAR**

In these reconversion days an old RECORD feature comes back from the war, in the Boeckh index numbers of construction costs (opposite page). The Boeckh figures ran in the RECORD through early 1942, then became a war casualty, as their compiler, E. H. Boeckh, went to Washington to estimate construction costs for the Army. Through the war his own organization carried on with the gathering of basic data; now Lt. Col. Boeckh is finishing his Army duties and reconverting. A special arrangement enables the RECORD to be first to make his cost indexes available.

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100. Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

\[
\text{index for city } A = 110 \\
\text{index for city } B = 95
\]

Both indexes must be for the same type of construction.

Then: costs in A are approximately 16 per cent higher than in B.

\[
\frac{110 - 95}{95} = 0.18
\]

Conversely: costs in B are approximately 14 per cent lower than in A.

\[
\frac{110 - 95}{110} = 0.136
\]

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published legal prices, thus, indexes reflect minimum costs and not necessarily actual costs.
## NEW YORK

<table>
<thead>
<tr>
<th></th>
<th>Apts., Hotels, Office Bldgs.</th>
<th>Commercial and Factory Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td>Residential</td>
<td>Apts., Hotels, Office Bldgs.</td>
</tr>
<tr>
<td>1913</td>
<td>57.9</td>
<td>53.9</td>
</tr>
<tr>
<td>1914</td>
<td>57.4</td>
<td>53.3</td>
</tr>
<tr>
<td>1915</td>
<td>56.0</td>
<td>52.5</td>
</tr>
<tr>
<td>1916</td>
<td>64.5</td>
<td>62.3</td>
</tr>
<tr>
<td>1917</td>
<td>75.3</td>
<td>73.2</td>
</tr>
<tr>
<td>1918</td>
<td>85.8</td>
<td>82.2</td>
</tr>
<tr>
<td>1919</td>
<td>99.0</td>
<td>92.0</td>
</tr>
<tr>
<td>1920</td>
<td>136.1</td>
<td>123.3</td>
</tr>
<tr>
<td>1921</td>
<td>109.8</td>
<td>101.3</td>
</tr>
<tr>
<td>1922</td>
<td>109.5</td>
<td>99.0</td>
</tr>
<tr>
<td>1925</td>
<td>121.5</td>
<td>111.4</td>
</tr>
<tr>
<td>1930</td>
<td>127.0</td>
<td>124.1</td>
</tr>
<tr>
<td>1935</td>
<td>93.8</td>
<td>104.7</td>
</tr>
<tr>
<td>1939</td>
<td>123.5</td>
<td>130.7</td>
</tr>
<tr>
<td>1940</td>
<td>126.3</td>
<td>132.2</td>
</tr>
<tr>
<td>1941</td>
<td>134.5</td>
<td>135.1</td>
</tr>
<tr>
<td>1942</td>
<td>139.1</td>
<td>137.9</td>
</tr>
<tr>
<td>1943</td>
<td>142.5</td>
<td>140.2</td>
</tr>
<tr>
<td>1944</td>
<td>153.1</td>
<td>149.6</td>
</tr>
<tr>
<td>1945</td>
<td>160.5</td>
<td>156.3</td>
</tr>
</tbody>
</table>

### RESIDENTIAL

**% increase over 1939**

<table>
<thead>
<tr>
<th></th>
<th>Feb. 1946</th>
<th>40.2</th>
<th>41.8</th>
<th>30.0</th>
<th>27.7</th>
<th>28.4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oct. 1946</td>
<td>32.4</td>
<td>36.3</td>
<td>37.3</td>
<td>36.2</td>
<td>36.3</td>
</tr>
</tbody>
</table>

### SAN FRANCISCO

<table>
<thead>
<tr>
<th></th>
<th>Apts., Hotels, Office Bldgs.</th>
<th>Commercial and Factory Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td>Residential</td>
<td>Apts., Hotels, Office Bldgs.</td>
</tr>
<tr>
<td>1913</td>
<td>60.9</td>
<td>56.7</td>
</tr>
<tr>
<td>1914</td>
<td>59.4</td>
<td>54.4</td>
</tr>
<tr>
<td>1915</td>
<td>60.9</td>
<td>56.9</td>
</tr>
<tr>
<td>1916</td>
<td>58.9</td>
<td>58.8</td>
</tr>
<tr>
<td>1917</td>
<td>65.5</td>
<td>67.9</td>
</tr>
<tr>
<td>1918</td>
<td>85.7</td>
<td>84.4</td>
</tr>
<tr>
<td>1919</td>
<td>93.4</td>
<td>94.0</td>
</tr>
<tr>
<td>1920</td>
<td>118.1</td>
<td>111.2</td>
</tr>
<tr>
<td>1921</td>
<td>111.5</td>
<td>110.5</td>
</tr>
<tr>
<td>1922</td>
<td>98.4</td>
<td>98.1</td>
</tr>
<tr>
<td>1925</td>
<td>118.6</td>
<td>114.8</td>
</tr>
<tr>
<td>1930</td>
<td>108.9</td>
<td>112.4</td>
</tr>
<tr>
<td>1935</td>
<td>95.1</td>
<td>104.1</td>
</tr>
<tr>
<td>1939</td>
<td>110.2</td>
<td>118.7</td>
</tr>
<tr>
<td>1940</td>
<td>112.6</td>
<td>119.3</td>
</tr>
<tr>
<td>1941</td>
<td>118.8</td>
<td>121.2</td>
</tr>
<tr>
<td>1942</td>
<td>124.5</td>
<td>126.9</td>
</tr>
<tr>
<td>1943</td>
<td>128.2</td>
<td>131.2</td>
</tr>
<tr>
<td>1944</td>
<td>138.4</td>
<td>135.7</td>
</tr>
<tr>
<td>1945</td>
<td>132.8</td>
<td>146.2</td>
</tr>
</tbody>
</table>

### RESIDENTIAL

**% increase over 1939**

<table>
<thead>
<tr>
<th></th>
<th>Feb. 1946</th>
<th>43.0</th>
<th>47.8</th>
<th>27.0</th>
<th>27.3</th>
<th>25.6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oct. 1946</td>
<td>34.7</td>
<td>39.3</td>
<td>34.7</td>
<td>33.4</td>
<td>33.4</td>
</tr>
</tbody>
</table>
HERE'S WHY "TONTINE" SHADE CLOTH OFTEN GIVES UP TO 20 YEARS' SERVICE

Deep into the fibers of the fabric, the pyroxylin is driven. This chemical—a liquid form of cotton—is soaked up by the cotton fabric as a sponge soaks up water, then it hardens. Thus the two become, in effect, one material.

Pyroxylin is washable—it is impervious to water, soap, rain, grime and dirt. When a shade made with "Tontine" becomes soiled, it can be scrubbed with soap and water, then rebhung fresh and clean as ever. Service records show that "Tontine" can be scrubbed vigorously—20 times or more without damage! And colors resist fading, stay bright for the life of the shade.

Resists cracking and pinholing. "Tontine"’s pyroxylin impregnation gives it a protective finish that resists cracking and pinholing. And it gives maximum resistance to fraying and ripping. Constant improvement of all these qualities through the years makes today's "Tontine" one of the best values in its field.

"Tontine"-made window shades have in many cases given service of 20 years! And this service record is important to you. It tells how you can please clients by specifying window shades that last longer, save cost. When you order window shades, specify "Tontine." It's pyroxylin-impregnated. Washing actually helps to prolong its life! And to save you time and trouble, your authorized "Tontine" dealer can arrange an economical washing and repairing service. E. I. du Pont de Nemours & Co. (Inc.), "Tontine" Sales, Newburgh, N. Y.

"TONTINE" is Du Pont's trade mark for its pyroxylin-impregnated washable window shade cloth.

DU PONT
"TONTINE"
WINDOW SHADE CLOTH
Looks Better Longer

ARCHITECTURAL RECORD
How to prevent excessive corrosion of metal breechings

LONGER LIFE for equipment is often a major advantage of using heat insulation. At the Delaware Generating Station, Philadelphia Electric Co., outdoor breechings carry spent gases at 350° to 400° F. to the stack. By preventing cooling of the breechings, insulation stops excessive condensation and the resultant corrosion on interior surfaces. On the outside, effective weatherproofing protects both metal and insulation.

Because of the length of the breechings and the high temperatures involved, unusual expansion problems are encountered. Armstrong designed and applied the insulation to meet these special requirements. Expansion joints were covered as separate units—allowing free movement without damage to insulation.

Armstrong's Contract Service can help you with the engineering problems of unusual as well as routine applications of heat insulation and can supply efficient materials and skilled mechanics for erection. For full information, phone to nearest Armstrong Office listed below.

Armstrong Cork Co., Building Materials Division, 2404 Concord Street, Lancaster, Penna.

1. Transverse stiffeners on breechings; 2. ½" pencil rods welded on; 3. 1" thick 85% Magnesia wired in place; 4. 2" mesh hexagonal wire netting wired to blocks; 5. Asbestos cement ½" thick (2 coats); 6. 1" mesh hexagonal wire netting; 7. Insulmastic (2 coats). This efficient weatherproofing material seals out air, moisture, and fumes. Insulmastic will not crack, sag, or blister.

ARMSTRONG'S INDUSTRIAL INSULATION

Complete Contract Service
For All Temperatures

From 300° Below Zero To 2600° Fahrenheit

APRIL 1946
FOR BETTER BUILDING

**AIR DIFFUSER**

A modification in the design of the Kno-Draft adjustable air diffuser provides a tamper-proof adjustment since a special tool is required to remove the cap which gives access to the damper control screw. The volume control damper regulates flow of air, while the lower cone varies the angle of discharge to suit ceiling heights, and air flow may be directed downward for heating, or parallel to ceiling for cooling. W. B. Connor Engineering Corp., 114 East 32nd St., New York 16, N.Y.

**CIRCUIT BREAKER**

A small inexpensive circuit breaker for use in home installations is offered for use with either alternating or direct current. The Aireon circuit breaker may also be used as a manual switch, and gives definite indication of circuit condition. Manufacturer claims to exceed all underwriter requirements. Aireon Mfg. Corp., Kansas City, Kansas.

**RUBBER FLOOR MAT**

Chemists have developed a synthetic rubber floor mat that matches quality of prewar mats of natural rubber. Made in several conventional types and in a variety of colors, the mats may also be imprinted with special patterns. U. S. Rubber Co., 1230 6th Ave., New York, N.Y.

**SYNTHETIC TILE**

Made from panolene type material, the Amatic floor tile is recommended by the maker for floors subjected to hard usage. Resilient and quiet underfoot, it is stated the marbeized surface is not marred by burns or stains. There are 13 colors and 6 standard sizes. American Tile & Rubber Co., Trenton, N.J.

**ADJUSTABLE POST**

A prop that may be adjusted to various heights to correct sagging or settling, the Flor-Level-Post consists of a screw post operating within a metal sleeve. A rod extending through the screw gives leverage for adjusting level by hand turning. It is recommended by the manufacturer in construction of new buildings to provide a means of compensating for possible displacement, and is said to be capable of supporting more than 12 tons. Industrial & Home Products, Inc., Akron 8, Ohio.

**WATER ENAMEL**

A hard, lustrous finish that washes like a china plate is claimed for Spred Luster, the water-mix oil enamel. Application is rapid and easy, drying action is rapid, and excellent coverage is obtained, according to the manufacturer. A wide variety of colors is offered. The Glidden Co., Cleveland 2, Ohio.

**LAMINATED PANEL**

Another product of the aircraft factories is showing promise of entering the construction field. Metallic, made of thin sheets of aluminum alloy separated by a core of balsa wood, is said to combine considerable strength and rigidity with lightness, and surface will require no treatment. This product offers considerable possibilities for panels and partitions. United Aircraft Corp., Chance Vought Aircraft Division, Stratford, Conn.

**STRIP WINDOWS**

For use in horizontal bands combined with continuous strips of glass block, or for use within panels of glass block, metal windows of special size and type are now offered. Better control of ventilation, illumination and glare, and elimination of necessity for shades over the upper part of the glass area are said to be accomplished by this method of installation. Hope’s Windows, Inc., Jamestown, N.Y.

**ACOUSTICS**

Progress in the theory of acoustics in radio broadcasting is demonstrated in the design of Polyacoustic Studios at Station KSL, Salt Lake City. Sound-absorbing Acoustone was used in all areas adjacent to the broadcasting studios to prevent noise transmission. In Studio I reversible panels were installed on the rear wall, having, on the one side, flat surfaces covered with Auditone acoustical tile, and, on the other, curved surfaces covered with a hard material. Auditone strips were also mounted along the corners of the room, while the ceiling and other walls were treated with curved hard surfaces to give diffused sound deflection. Manipulation of the adjustable panels permits control of the amount of resonance to conform with the program requirements. U. S. Gypsum Co., 300 West Adams St., Chicago 6, Ill.

**AIR FRESHENER**

Development is announced of the Airkem Evaportal unit which may be attached to any type of air conditioning system or unit. A chemical deodorizing agent is pumped into a vaporizer and mixes with and freshens the conditioned air before it is recirculated. W. H. Wheeler, Inc., 7 East 47th St., New York, N.Y.

A chemical deodorizer to freshen air

**SASH BALANCE**

Equipped with a pre-tensioned spring, which, according to the maker, permits fast and trouble-free installation, the Rochester spiral sash balance is completely concealed within the sash stile, the groove being closed at top and bottom. The sliding bearing operates freely, yet will hold the sash in any position. Milwaukee Stamping Co., Milwaukee 14, Wis.

**ADJUSTABLE QUAD**

Angles, pitch scales, percentage slopes, and trigonometric functions may be found with the adjustable, plastic S & J Quadrangle. This drafting instrument has eight drawing edges, is rectangular in shape, and may be used as a triangle. Stewart-Jackson Instrument Co., A. G. Bartlett Bldg., Los Angeles 14, Calif.

(Continued on page 28)
FROM the first design on the drawing board to the manufacture of a machine or the construction of a building, precision tools are essential. Foremost in the design stage is the need for dependable drawing pencils, precision tools in the hands of skilled draftsmen.

VENUS Drawing Pencils are engineered to give you drafting perfection without failure: accurately graded to assure uniformity in all 17 degrees... strong in performance... smooth and clean in action.

VENUS .Drawing Pencils
AMERICAN LEAD PENCIL COMPANY, HOBOKEN, NEW JERSEY
For most effective wood preservation, the chemicals must be forced **deep** into the wood. American Lumber & Treating Company obtain this deep penetration by the vacuum-pressure method in closed steel cylinders. Dipping, brushing on, or other makeshift methods can't begin to give comparable results. So, when you buy treated lumber, remember to say, "pressure-treated" . . . it's best!

**Whatever your needs —**

**AMERICAN LUMBER GIVES YOU ALL 3**

1. Wolmanized Lumber* — protects against decay and termite attack.
3. Creosoted lumber.

---

**ACOUSTIC CEILING**

A simple and rapid means of installing a decorative, sound-absorbing ceiling employs Fiberglas blanket. Notched 2 by 4's are bolted 8 in. below the ceiling on opposite walls of the space to be treated. Fiberglas cord is stretched from the top of one 2 by 4 to the other, and blanket is supported on cord spanning the room. Decorative Fiberglas fabric cut to fit the width of the room is nailed in pleats to wood strips ¾ in. square. When strips are screwed into the notches in the 2 by 4 anchor rails, fabric is pulled taut. A finish mold covers joint at wall. The manufacturer claims that when fire-resistant wood is used installation is completely incombustible, and, since the glass fibers will not absorb moisture there can be neither shrinkage nor sag. Owens-Corning Fiberglas Corp., Nicholas Bldg., Toledo 1, Ohio.

**LIGHTING**

**Lamp Holder**

Automatic centering of contacts, which eliminates the need of adjusting the lamp contact prongs in the socket, is claimed for the *Springlox* safety lamp-holder. The spring holds lamp firmly in place. Benjamin Electric Mfg. Co., Des Plaines, Ill.

**Recessed Light Unit**

A "telescopic" frame, that manufacturer states will fit snug and flush to the most uneven ceilings, is a feature of the new *All-Bright* recessed fluorescent fix-
Let this Mark of Merit be your guide when you specify heating and plumbing products

It identifies products that are designed and engineered to give long, efficient service

And families pay no more for kitchen sinks and laundry trays that carry this famous Mark of Merit. It says they're designed to make housework lighter—your kitchen brighter.

Be sure you're right when you select or specify winter air conditioners or warm air furnaces. When they bear the American-Standard Mark of Merit you're assured of less worry, less work, less money for operation and upkeep.

You want assurance of health and comfort when you select radiator heating for your buildings. That's what you get when you select or specify time-tested, performance-proved American-Standard units.

ONE of the most important decisions you have to make is the choice of heating equipment and plumbing fixtures. When you specify, be sure. And you are sure when you select or recommend products that bear the familiar American-Standard Mark of Merit. You are sure of the finest in design, quality and efficiency... for American-Standard Products are backed by many millions of dollars spent in research. Time-tested and performance-proved, they have been Serving the Nations' Health and Comfort for more than half a century. Yet they cost no more than others and are available for modernization jobs on our convenient FHA Time Payment Plan.

For information, contact your Heating and Plumbing Contractor. American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pa.
An attractive coat of portland-cement paint is not alone a beauty aid; it also lowers upkeep cost. It penetrates the pores in concrete, concrete masonry, stone, brick and hollow tile to form a hard skin that resists moisture, dirt and dust. It is easily cleaned so that frequent repaintings are unnecessary.

Portland-cement paint is available in a wide selection of colors which are as lasting as its protective armor. The base of Atlas White Cement brings out the full color values of the pigments used.

Portland-cement paint made with Atlas White Cement is produced by a number of paint manufacturers. It comes in handy packages... ready to be mixed with ordinary tap water on the job.

Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary) Chrysler Building, New York 17, N. Y.

FACTORY-PREPARED PAINT IS PREFERABLE SEE YOUR LOCAL PAINT DEALER

FOR BETTER BUILDING

(Continued from page 28)

Clamp-on light shield for fluorescents

STAINLESS TUBING

Manufactured from stainless steel tubing of various analyses, flexible steel hose is recommended by the manufacturer for steam connections, conduits for wiring, for connections between movable parts, or where vibrations are set up between two rigidly held units. The Carpenter Steel Co., Welded Alloy Tube Division, Kenilworth, N. J.

STANDARDS

Color Designation

Described as a basic system of color designation involving the use of everyday words, the ISCC-NBS Method provides a practical means of accurately describing colors with reference to their hue, value and saturation. Prepared originally by the Inter-Society Color Council, the method has been adopted by the National Bureau of Standards. A visual interpretation has been released showing principles and application of the method. General Printing Ink Co., 100 6th Ave., New York, N. Y.

Simplified Practice

Copies of the approved Simplified Practice Recommendation for Asphalt Roll Roofing and Asphalt and Tar Saturated Felt Products are now available. Listed items are smooth and mineral surfaced roll roofing, roll siding and saturated felt. Supt. of Documents, Govt. Printing Office, Washington 25, D. C. 5 cents.
How Architects Can Make Restaurants More Profitable

The place to start a profitable restaurant operation is right on the architect’s drawing board. Make a good beginning by including in your new plans “Packaged” Air Conditioners, the simplified form of air conditioning pioneered by Chrysler Airtemp.

“Packaged” Air Conditioners quickly pay for themselves by the additional patronage they attract by reviving summer-jaded appetites. Then they go on increasing restaurant profits for years to come. Architects will find them so compact and flexible they fit readily into plans for any business establishment, whether installed singly or in multiple. Users like them because they are reasonable in price and operate with so little attention, so little service, and at such amazingly low cost.

They’re thoroughly dependable—time-tested all over America. Behind them is Chrysler Corporation, with its great reputation for engineering and mass production skill. It will pay you to specify this modern, simplified form of air conditioning. Write Airtemp Division of Chrysler Corporation, Dayton 1, Ohio. In Canada: Therm-O-Rite Products, Ltd., Toronto, Ont.

"REMEMBER THURSDAY NIGHT! The music of Andre Kostelanetz and the musical world’s most popular stars—Thursday, CBS, 9:00 P.M., E.S.T."
MANUFACTURERS’ LITERATURE

AIR CONDITIONING
Servel All-Year Gas Air Conditioners. Data sheet describes construction, operation and control of system which cleans, humidifies and heats air in winter, and cleans, dehumidifies and cools air in summer. 2 pp., illus. Servel, Inc., Evansville 20, Ind.*

AMPLIFIERS
Audio Amplifiers. Description of eight new audio amplifiers. 24 pp., illus. Newcomb Audio Products Co., 2815 S. Hill St., Los Angeles 7, Calif.

ASPHALT TILE
Floors That Endure. Asphalt floor and wall coverings are presented in a wide range of colorings and design treatments. Specifications for application. 16 pp., illus. Tile-Tex Co., Chicago Hgts., III.*

BRONZE PLAQUES
Imperishable Cast Bronze. Illustrates signs, memorial tablets and nameplates of various designs. 4 pp., illus. Pan American Bronze Co., 628-648 Sycamore St., Cincinnati 2, Ohio.

BULKHEADS
Bilco Copper Steel Bulkheads. Six standard design types of steel bulkheads described, with installation details. Dimensions of stairs that may be used with each size are shown. 4 pp., illus. The Bilco Co., 164 Hallock Ave., Pittsburgh, Pa.*

CONCRETE ADDITIVE
Plastiment, The Concrete Densifier. The action of Plastiment and its use to increase watertightness and surface hardness of concrete are covered in detail. 8 pp., illus. Sika Chemical Corp., Passaic, N. J.*

GLASS PRODUCTS
Making Your Home More Attractive With Glass, and Details and Instructions for Installation of Pittsburgh Glass Products. Profusely illustrated brochure gives many ideas for effective use of glass in the home. Useful handbook shows how to set various types of glass products for most satisfactory results. 28 pp., 16 pp., illus. Pittsburgh Plate Glass Co., Grant Bldg., Pittsburgh, Pa.*

HEATING
The Pup Announces New Arrivals. Complete line of gas-heating equipment is illustrated, including unit heaters, space heaters and automatic water heaters. 8 pp., illus. Bryant Heater Co., 17825 St. Clair Ave., Cleveland 10, Ohio.*

HANGAR DOORS
Heart of the Hangar. A.I.A. file sheet cover specifications for construction, installation and operation of various hangar door types. 16 pp., illus. Byrne Doors, Inc., 1150 Griswold St., Detroit 26, Mich.*

INSULATION
Cotton Flameproofed Insulation. Folder tabulates comparative insulating value of various types of material and illustrates method of installation. 4 pp., illus. Lockport Cotton Batting Co., Lockport, N. Y.*

KITCHEN EQUIPMENT
Builder’s Kitchen. Line of Youngstown steel cabinets and sinks is offered, together with dimensions. Also contains suggested and actual installations in homes of various price ranges. 24 pp., illus. Mullins Mfg. Corp., Warren, Ohio.*

LIGHTING
Electrical Living. Walt Disney shows various arrangements of unit kitchens. Modern lighting throughout the home is also discussed, as well as use of supplementary electrical equipment. 40 pp., illus. Westinghouse Electric Corp., Westinghouse Electric Corp., 30 Pa.

PATCHING
Wall to Wall Lighting for Tomorrow’s Office. A model installation of lighting to meet the varying conditions and requirements of individual departments in a business establishment. Construction details are given. 12 pp., illus. General Electric Co., Nela Park, Cleveland 12, Ohio.*

PLUMBING
Stylist Plumbing. Catalog of complete line of plumbing fixtures with dimensions and specifications. Featured is companion Dressette in which lavatory houses storage tank for toilet, thus eliminating visible water tank. Also shown are cabinet sinks, cabinet lavatories, urinals, wash sinks and drinking fountains. 24 pp., illus. Eljer Co., Ford City, Pa.*

PLYWOOD
The New Plastic Armor for Plywood. Gives survey of the characteristics of coated plywood and tabulates the merits of this material to meet requirements for various uses in construction. 8 pp., illus. Kimberly-Clark Corp., Plastics Div., Neenah, Wis.*

ROOF TRUSSES
Steel Roof Bowstring Trusses. Booklet showing installation of lightweight steel trusses to span large areas, typical designs and method of applying various types of roof construction. 8 pp., illus. Geo. L. Mesker & Co., Evansville 8, Ind.*

STRUCTURAL TILE
The Standard of Textured Tile. Specifications for glazed brick and tile are given, accompanied by details of standard sizes and special shapes. Gives vertical and horizontal coursing tables. Representative installations are illustrated. 20 pp., illus. Arketex Ceramic Corp., Brazil, Ind.*

WINDOWS

Residential Steel Windows. Specifications and installation details are presented for various types of windows in modular sizes. 8 pp., illus. Truscon Steel Co., Youngstown 1, Ohio.*

WIRE FENCING
How to Erect Chain Link Fence. Discusses specifications and methods for installing wire fences, setting posts, braking, etc. Components of this type of fencing are illustrated, and tables indicate proper sizes to employ to meet requirements of various arrangements. Also shows a variety of gates for use with link fencing. 36 pp., illus. Wickwire Spencer Steel Co., 500 Fifth Ave., New York 18, N. Y.*

LITERATURE REQUESTED
The following architects and organizations request manufacturers’ literature: James D. Beacham, Architect, 209 Peoples National Bank Bldg., Greenville, S. C.
Garrett Becker, Architect, P. O. Box 21, Ridgefield, Conn.
H. C. Belsher, Architect, 1529 Maryland Ave., Houston 6, Texas.
Daniel C. Bryant, Architect, 509½ Water Street, Port Huron, Mich.
Construction Dept., Northwestern Univ., Evanston, Ill.
R. L. Novak, Architect, 713 Main Ave., Clifton, N. J.
Frederick A. Settle, Architect, 426 Cedar Lane, Teaneck, N. J.
"Har-r-r-umph!", said Mr. Floop in reply to our question, "What do you look for first in fluorescent lighting fixtures?" Well... we couldn't argue with him there, but he did get our dander up when he came out flat-footed on the question of price. You see, Floop never could see further than the end of his price tag... with the unhappy result that Bilgewater's "cheap" fluorescent fixtures are costing dearly in replacements due to slapped-together construction and in lowered lighting efficiency due to improper design.

Luckily for all of us, most buyers of fluorescent fixtures don't follow Floop's footsteps. They look for seamless, heavy-gauge all-steel construction... for the lifetime reflectivity that high-baked enamel finishes provide... for correct distribution of light. In short, they look for all the advantages that have been built into SILV-A-KING lighting products over the past quarter-century.

SILV-A-KING "SPECIFICATION"
Lifetime porcelain fluorescent unit

BRIGHT LIGHT REFLECTOR CO.
FAIRFIELD AND STATE • BRIDGEPORT, CONN.

APRIL 1946
Future changes in laboratory layout easily possible with these
Johns-Manville Walls · Ceilings · Floors

ACOUSTICAL CEILINGS—With high coefficients of sound absorption and light reflection, Johns-Manville Acoustical Ceilings are proved aids to concentration and working efficiency. Demountable units give ready access to wiring, etc., in the furred space, and allow quick relocation of the ceiling if desired. An exclusive Johns-Manville patented construction system permits interchangeability of flush-type fluorescent lighting and acoustical units.

MOVABLE WALLS—The keystone of flexibility in Unit Construction is the J-M Transite Wall. Can be disassembled and relocated as needs require. Made of fireproof asbestos and cement, practically indestructible materials, the movable panels form rigid, double-faced partitions, 4” thick. Can also be used as interior finish of the outside walls. Removable Transite panels permit ready access to concealed pipes and wires. Special brackets and supports, easily attached to the steel studs, provide unlimited flexibility in arranging shelves, piping services, etc.

COLORFUL, RESILIENT FLOORS—J-M Asphalt Tile Flooring completes the Unit Construction System. Made of asbestos and asphalt, the units withstand hard wear, yet are comfortable and quiet underfoot. Individual units permit easy alterations or extension of patterns. Made in a wide variety of plain and marbleized colors.
in the expanding new world of Industrial Science

Johns-Manville Unit Construction provides flexibility
to meet ever-changing needs...

Since industrial progress depends more and more on scientific research, architects today are faced with the problem of developing techniques of laboratory design. Johns-Manville Unit Construction offers a system of flexible construction—walls, ceilings, floors—especially designed to accommodate laboratory needs and facilities.

The system makes possible endless revisions of space-use! Laboratories can be economically rearranged, enlarged, reduced, or even relocated according to the inevitable shifts and changes of future needs.

Three Johns-Manville materials are combined in Unit Construction:

1. Movable Walls...100% salvageable. Made of fireproof asbestos-cement Transite panels, easily erected or dismantled, yet endowed with all the qualities of permanent construction. Laboratory service piping may either be concealed in the Transite Walls or carried externally on demountable brackets which are supported by the steel studs of the wall construction. Shelves can be located where needed by use of a unique type of bracket.

2. Acoustical Ceilings...reduce noise. Demountable units can be easily taken down and relocated.

3. Colorful, Resilient Floors...quiet, long-wearing, comfortable underfoot. Small units permit easy extension or repairs.

These component parts are integrated into a single inclusive system, Unit Construction. You write one specification...place undivided responsibility on one manufacturer.

Yes, the finest achievements of Johns-Manville research can now benefit Research Laboratories themselves!

Send for the complete details of this important advance in laboratory design and construction. (Separate brochures also available for each of the three materials in Unit Construction.) Write Johns-Manville, Dept. AR-4, 22 E. 40th St., New York 16, N. Y.

Typical example of J-M Unit Construction—a Research Laboratory with complete structural flexibility, projection-free walls that are easy to clean, special bracket supports or shelves and piping, many other ideal features.
GOOD WASHROOMS—one of the "Big 4" in good working conditions

... say men and women workers in 400 plants

JIMMY: “You have to hand it to this company for the way they keep these washrooms slick as a whistle.”

HAL: “The boss must know we appreciate a well-kept washroom as much as he does.”

Good Washrooms were shown to be a vitally important factor in good working conditions by a recently completed research study.

Interviews with men and women workers from coast to coast show that the “Big 4” are good washrooms, safety devices, adequate lighting and proper ventilation.

Modern, sanitary washrooms, equipped with plenty of hot water, soap and good quality individual paper towels, do two big jobs. They help keep workers happy, and they help reduce the number of absences due to colds and complications that keep over a million men and women home from work every day.

Haven’t you yourself been irritated by a poorly planned, badly equipped washroom? Then make sure your washrooms are designed to be “Health Zones,” not “Germ Exchanges”—“morale-boosters,” not “temper-testers.”

Good Washrooms begin at the Drawing Board

Efficient, well-equipped washrooms that help keep workers healthy and happy are a result of careful thinking and planning in the blueprint stage. For practical suggestions on modern washroom layout, turn to our four pages in Sweet’s catalog—or call on the Scott Washroom Advisory Service, Scott Paper Company, Chester, Pennsylvania.

SCOTTISSUE TOWELS STAY TOUGH WHEN WET

BUILD WITH
STRAN STEEL

BUILD FOR ECONOMY, PERMANENCE
AND FIRE-SAFETY

Because they feel that basic improvements begin with the frame, many architects and builders are planning their new buildings around Stran-Steel, the material that makes steel framing practical and economical for lightweight structures.

Workmen using ordinary carpenter’s tools find Stran-Steel fast and easy to erect. Framing members are assembled with self-threading screws. Studs and joists embody the exclusive Stran-Steel nailing groove, which permits collateral materials to be nailed directly to framing members. The completed frame is durable, fire-safe, sag-proof . . . of uniform quality throughout . . . low in original cost, inexpensive to maintain.

In order to offer greater investment value in an apartment or housing project, single home or store—or in any similar structure—build with Stran-Steel! For further details, see Sweet’s File, Architectural, Sweet’s File for Builders, or the January issue of Building Supply News.

GREAT LAKES STEEL CORPORATION
STRAN-STEEL DIVISION • PENOBSCOT BUILDING, DETROIT 26, MICHIGAN
UNIT OF NATIONAL STEEL CORPORATION

APRIL 1946
BUILT-IN telephone facilities are striking evidence of good planning and construction. Prospects will like the thought that built-in conduit is provided to carry telephone wires out of sight between the walls. Also, that outlets at convenient points are planned for, and ready for use as soon as telephones become plentiful.

Telephone outlets make sales easier. Your Bell Telephone Company will be glad to co-operate in planning them with you. Just call the nearest Telephone Business Office.
Wickwire Spencer Chain Link Fence is as fine in quality and service as can be made. Used in protection of industrial plants, railroads, airports, schools, residences, playgrounds, and other types of property, it provides years of trouble-free service.

The fabric used in the construction of Wickwire Spencer Chain Link Fence is woven of carefully selected copper-bearing steel wire, hot galvanized by a special process after weaving. Framework is of copper-bearing steel, hot galvanized. Fittings of malleable iron or pressed steel heavily galvanized.

Installation and Service—Expert installation and erection service is maintained either direct or through reliable distributors throughout the country. Wickwire Spencer will be happy to measure the property, work out details to insure proper protection and submit estimates without obligation for fence material ready for erection or covering complete erection.

NEW—AND YOURS FOR THE ASKING

This profusely illustrated 24-page Wickwire Spencer Chain Link Fence catalog shows proper fence and fittings for various types of real property. Specification charts, detailed drawings, erection instructions and other essential data are all arranged for quick reference. For your copy write Chain Link Fence Dept., Wickwire Spencer Steel, 14 Lafayette Sq., Buffalo 3, N. Y.

WICKWIRE SPENCER

A DIVISION OF THE COLORADO FUEL AND IRON CORPORATION
EXECUTIVE OFFICES—500 FIFTH AVENUE, NEW YORK 18, N. Y.

Abilene (Tex.) • Boston • Buffalo • Chattanooga • Chicago • Clinton (Mass.)
Detroit • Houston • Los Angeles • Philadelphia • San Francisco • Tulsa • Worcester

APRIL 1946
**OILDRAULIC LEVELATORS**

eliminate need for ramps and loading docks, make buildings more efficient

Oildraulic Levelators fit the trend to functional and integrated design. They save plant space and streamline structures by eliminating unsightly ramps and loading docks. Floors can be poured at grade instead of at railroad car or truck bed height—a real cost saving. Oildraulic Levelators lift loads up to 50,000 pounds directly from plant floor to trucks, freight cars, or different building levels. Levelator car, when down, becomes part of floor and can be trucked over. Fast, safe, dependable, economical electric-hydraulic operation.

**SIMPPLY BUILDING DESIGNS WITH OILDRAULIC ELEVATORS AND LEVELATORS**

**OILDRAULIC ELEVATORS**

require no penthouse, no heavy sidewall structure, no special machine room

Streamline your building designs and make sizeable savings in construction costs by specifying Oildraulic Elevators for 2, 3 or 4-story structures. There’s no need for costly, unsightly penthouses or for heavy load-bearing supporting columns because this modern elevator is pushed up, not pulled up. Owners approve Oildraulic Elevators... initial cost is low, operating cost is low, and there’s little maintenance expense. Electric-hydraulic operation is smooth... no abrupt starts or stops, accurate landing stops.

**FOR FREE LITERATURE**

mail this coupon to Rotary Lift Co., 1103 Kentucky, Memphis (2), Tenn.

NAME

ADDRESS

CITY AND STATE
The Panelboards shown above are some of the most popular types we design and manufacture. All Panelboards carry the Underwriters' seal of approval and in general exceed material, workmanship and design standards by a wide margin. We also manufacture a complete line of power distribution panelboards and stage and auditorium lighting control panels.

Load Centers and Service Equipment are available now in many types and with any number of circuits up to a maximum of sixteen poles. We suggest that you urge your customers to install at least two extra circuits for those electrical conveniences they are waiting for now. Write today for free bulletins on Panelboards and Service Equipment.
When you make the customer feel at home, the urge to buy becomes almost irresistible! That's what a "friendly front" does for the store, by permitting unobstructed vision of inviting displays inside as well as outside.

But beauty to attract the eye isn't all. These new, clear-type fronts are practical too, when complete Brasco Construction is utilized. Sturdy Brasco members are easily adaptable to the infinite demands of modern design, making installation speedy and effective. Exclusive patented features provide ample glass protection. Permanent, reinforced construction in heavy-gauged modern metals assures built-in beauty for lasting economy.

The Brasco line of unified members has been developed, engineered and perfected by over thirty years of experience. It takes the "guess" out of modern, store front construction plans. Whatever your design, you can build it best with Brasco.

Brasco Manufacturing Co.
Harvey - (Chicago Suburb) - Illinois
National Distribution Assures Effective Installation
Now, as we enter into one of the greatest building programs of our time, the Indiana Limestone Industry is ready again to serve architects and builders faithfully and well. Indiana Limestone, renowned for its economy, its natural beauty, its enduring dignity and its outstanding contribution to the building arts, down through the years, is available today.

Available, too, are the facilities of the Indiana Limestone Institute's Technical Division to assist architects with specific questions that may arise in connection with the use of the "Nation's Building Stone."

Our Technical Division is dedicated to the purpose of making available to architects for the asking, the sum total of the Industry's knowledge and experience.

MEMBERS

The Bloomington Limestone Corp.  J.M. Hoadley, Inc.  Monon Stone Company
Empire Stone Company  Independent Limestone Co.  Swenson Stone Company
Fagan Stone Company  Indiana Limestone Co., Inc.  Texas Quarries, Inc.
The Carl Furst Company  The Indian Hill Stone Co.  Victor Oolitic Stone Co.
Harding & Cogswell  Ingalls Stone Company  Walker Brothers
Heltonville Limestone Co.  Matthews Brothers Co.  Woolery Stone Company

For immediate reference to general information consult our catalog in Sweet's File.

INDIANA LIMESTONE INSTITUTE
P. O. BOX 471  •  BEDFORD, INDIANA

The "NATION'S BUILDING STONE" IS AVAILABLE

APRIL 1946
Recommend Blue Ribbon Design

STANLEY CABINET HARDWARE

Every girl is fussy . . . about her own kitchen.

That's why we took so very, very much care to make the new Stanley Cabinet Hardware line just exactly right. That's why, too, between the girls and Stanley, it's a case of love at first sight.

Actually, years of practical research went into this new line before a pencil was ever touched to paper. Then the most competent designers of the country were called in and given free rein.

That's why the new Stanley Cabinet Hardware is practical . . . doors latch when they're supposed to, open when they're supposed to . . . knobs stay trim and tight . . . latch handles, pulls and knobs have finger room to spare!

That's why the new Stanley Cabinet Hardware is beautiful . . . sparkling trim for any modern kitchen!

That's why the new Stanley Cabinet Hardware makes up a woman's mind fast . . . they love it!

And that's why you can recommend the new Stanley Cabinet Hardware with full confidence! Write for folder showing complete line. The Stanley Works, Cabinet Hardware Division, New Britain, Connecticut.

STANLEY

Trade Mark

Cabinet Hardware
Rolling Steel

DOORS

... fine Appearance plus the Permanent Protection of Steel

Rolling Steel Doors solve your door problems for all large openings in industrial and commercial buildings when you select Mahon Rolling Steel Doors, you get doors of exceptionally fine appearance and fine workmanship, which will provide the permanent protection of steel, and the assurance of a lifetime of positive trouble-free service. Mahon Rolling Steel Doors are manufactured in Thirty Standard Underwriters' Labeled and Non-Labeled types to meet any conceivable requirement. See Mahon Insert in Sweet's or call in a Mahon representative.

Address ROLLING STEEL DOOR DIVISION
THE R. C. MAHON COMPANY
Home Office and Plant, Detroit 11, Michigan
Western Sales Division, Chicago 4, Illinois
Representatives in All Principal Cities

Manufacturers of Rolling Steel Doors, Shutters and Grilles, and Mahon Steel Deck for Roofs, Sidewalls, Partitions, Acoustical Ceilings, Permanent Floor Forms and Oversize Doors.

MAHON

APRIL 1946
It uses
47,000 feet
of Geon-insulated wire

Same type insulation is revolutionizing
home and industrial wiring

These front and rear views of a Rotary Switch and Relay Bank Rack—that's what Western Union calls it—give some idea of where all the wire goes. But they don't tell why so much Geon-insulated wire is used in machines like these as well as other equally complicated instruments designed and built by Western Union engineers.

Most important, of course, are the excellent electrical properties of insulation made from GEON. They permit a thinner coating of insulation. In instrument wiring that means that the assembly engineer has more room for doing his intricate job. In building wiring it means more conductors per conduit or smaller holes to be drilled.

But insulation made from GEON offers more than this. In all types of wiring it's easier to handle because it's smooth and non-sticky. It's easily identified because of the brilliant, permanent colors. It's highly abrasion resistant—pull it around sharp corners without fear of tearing. It resists water (GEON compounds, of course, are Underwriters approved for TW and other type wires); it resists oil and greases, acids and most other chemicals, sunlight and ozone, flexing, heat and cold, and most other normally destructive factors.

The next time you order wire—for manufacturing, home or industrial wiring—be sure to specify wire insulated with GEON now being made by leading wire and cable manufacturers. Or for more information please write Department A-4, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.

B. F. Goodrich Chemical Company

ARCHITECTURAL RECORD
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 impede harmful water penetration. Send for the Waterfoil literature today!

A. C. HORN COMPANY, Inc.
Established 1897
Manufacturers of Materials for Building Maintenance and Construction
Long Island City 1, N. Y.
Houston, Texas
Chicago, Illinois
San Francisco, Calif.

A Subsidiary of Sun Chemical Corporation
Blue Ridge Satinol Louvre glass injects a note of dignified beauty to the stair well in the building illustrated above. These translucent glass wall panels also "borrow" diffused light from adjoining offices.

Architects and designers know that Decorative Glass is versatile—because it combines the advantages of intrinsic beauty and utility. When you specify Decorative Glass, building occupants will enjoy a delightfully refreshing environment.

To provide ample choice of a distinctive glass for any specific application, the Blue Ridge Glass Corporation, Kingsport, Tennessee, manufactures a variety of patterns, which may be semi-transparent or obscure...Securitized (heat tempered), in flat form, for additional resistance to physical or thermal shock. These glasses are sold by Libbey-Owens-Ford through leading glass distributors. For further information, write Blue Ridge Sales Division, Libbey-Owens-Ford Glass Company, 8946 Nicholas Building, Toledo 3, Ohio.

"Design it with one of the 5 EX's"

LOUVREX  LINEX  FLUTEX  STYLEX  DOUBLEX

BLUE RIDGE Decorative GLASS
FOR SOFT, DIFFUSED LIGHT • SMART DECORATION • COMPLETE PRIVACY
As shown by these data sheets from Sweet's*, there are life-time Porcelain Enamel BENJAMIN LIGHTING UNITS for all industrial lighting requirements.

May we send you a complimentary copy of this four page Lighting Data Bulletin on Benjamin Equipment as found in the new 1946 editions of Sweet's Catalog*?

This Bulletin provides you with a valuable quick picture of the many different types of lighting units that are required to meet properly the many plant lighting needs. You will find in this Bulletin not only assistance in determining the types of lighting you wish to check into further, but also the evident importance of specifying from a complete line, such as is Benjamin's, to assure the best possible lighting results. Evident, too, will be the value of insisting upon porcelain enameled reflectors, Benjamin Life-time porcelain enamel, for lower maintenance costs and longer life.

For your copy, please write The Benjamin Electric Manufacturing Company, Dept. QI, Des Plaines, Illinois.

*Architectural and Engineering Sections

at the International Lighting Exposition, Chicago, Apr. 25-30

First Showings of the NEW BENJAMIN FLUORESCENT LIGHTING UNITS for Industrial Locations and Offices; featuring new developments in lampholders, shielding, trouble-free auxiliary equipment, new styling, and other advancements.
Spanish in design
"Modern American" in Comfort

Reflecting the old Spanish influence so characteristic of Santa Barbara architecture, this edifice nevertheless is "modern American" in equipment. * Payne gas warm air heating... selected for advanced engineering, quality construction and unfailing dependability... assures comfort in any weather. * Architects and builders are urged to investigate the many applications of Payneheat to commercial and industrial jobs and public buildings. Consult your nearby Payne Dealer or your gas company... or write to us. * Payne factory engineering service "tailors" the installation to the job. Consultation is invited.

Payneheated Unitarian Church
Santa Barbara, California
Architect, E. Keith Lockhard

Payne
Zone-conditioning
Successor to old-fashioned central heating
Circulated winter warmth, summer ventilation with forced-air models... controlled by "zones" (suites) or individual rooms.

Write for Free Booklet

Payne Furnace Company
(One of the Dresser Industries)
Beverly Hills, California

Payneheat
Over 30 Years of Leadership

Architectural Record
Hard to believe, but this beautiful lawn is actually the roof of an apartment garage! It's a modern roof, covered with luxurious grass and shrubbery. Putting valuable roof space to work is typical of the new architectural trend—not only as garden areas but for practical utility as well. Sunny, safe areas for schools; storage and heavy traffic roofs for factories—yes, even roof parking lots are a practical possibility today, not just something to be hoped for tomorrow!

Proved-in-performance specifications—worked out by Ruberoid engineers—are available now for all these recent roof developments. Ruberoid Approved Roofing Contractors, located in principal cities and towns, are ready to give you assistance in planning and executing them. No matter what type roof you may have in mind—Asbestos Felt and Asphalt, Coal Tar Pitch and Tarred Felt, or Asphalt Felt and Asphalt—call a Ruberoid Approved Roofer. His assistance, based on long experience and backed by a complete line of materials—all from the same source—assures you of the right roof for any job!

RUBEROID
BUILT-UP ROOFING

HANDY ROOF INCLINE FINDER
For Your Superintendent
This useful pendulum device instantly gives the roof incline in inches per foot. Helps determine proper type of roof. Made of transparent plastic, can also be used as a protractor.
FREE ON REQUEST!
It takes two to make a deal

...Especially the kind of deal Columbia gives you! First there are our mills which turn out only top quality window shades and Venetian blinds. (These days of restrictions we give you the very best we can with "what we have to work with.") Then there is the large corps of Columbia dealers who make a specialty of installation and carrying out your specifications to the letter.

Some of our shade and blind lines are still limited, but there's no limit to the Columbia Mills' quality, and the Columbia dealer's service.

Columbia 

WINDOW SHADES 
AND VENETIAN BLINDS

THE COLUMBIA MILLS, INC. • 225 FIFTH AVENUE, NEW YORK 10, N. Y.
For flexibility in color treatment, no surfacing material can compare with Formica. Whether you want brilliancy and contrast, or restraint and dignity, Formica offers everything—and a tight modern plastic surface that enhances the effect of color.

These colors are light-fast, perpetually bright and new. They do not stain because the material is non-porous and non-absorbent, and chemically inert. They are not spotted or charred by lighted cigarettes if the cigarette-proof grade is specified.

So the restaurant, lobby, terminal, ship or train in which surfaces are so protected can be depended on to maintain its original appearance without deterioration for years on end. Color charts and installation data on request.

THE FORMICA INSULATION CO., 4639 SPRING GROVE AVE., CINCINNATI 32, OHIO
United Wallpaper, Inc. Announces

THE INTERNATIONAL WALLPAPER DESIGN COMPETITION FOR 1946

Closes August 31, 1946

Purpose of Competition. United Wallpaper, Inc.—world’s largest manufacturer of wallpaper and related products—is the sole sponsor of this competition. Its purpose is to stimulate interest in wallpaper design among artists and designers all over the world.

Through this competition, established artists and designers have the opportunity to gain worldwide recognition for their work. And new talent, hitherto unaware of the possibilities in the field of wallpaper design, has an unprecedented opportunity to be discovered and recognized.

Contestants have the opportunity to win awards in any or all of the classifications listed below, as well as the $1,500.00 Grand Award for the design judged best of all.

The Committee of Judges includes Robert B. Griffin, leading wallpaper stylist... Helen Koues, prominent authority on Interior Decoration, William B. Burton, head of creative design for United Wallpaper, Inc... Christine Holbrook, Associate Editor of Better Homes and Gardens magazine and Richardson Wright, Editor-in-Chief of House and Garden magazine. Before starting work, please read carefully the RULES OF COMPETITION.

$7,500.00 IN CASH AWARDS

GRAND AWARD..........................$1,500.00

(to be selected from winners below)

LIVING ROOM Wallpaper Design Award........$1,000.00

DINING ROOM Wallpaper Design Award.......$1,000.00

HALL Wallpaper Design Award................$1,000.00

BEDROOM Wallpaper Design Award...........$1,000.00

BATHROOM Wallpaper Design Award...........$1,000.00

KITCHEN Wallpaper Design Award............$1,000.00

(In case of ties, duplicate awards will be made)

United Wallpaper, Inc.

World’s Largest Manufacturer of Wallpaper

3330 West Fillmore St., Chicago 24, Ill., U. S. A.
Red Lead "Soaps"
help make Paint Film
Tough...Flexible...Water-Resistant

While maintenance engineers know, by long experience, that Red Lead helps make metal last...and widely accept it as the standard metal protective paint...it remained for modern science to show exactly why Red Lead so effectively inhibits rust.

One of the important reasons is Red Lead's ability to react with the vehicle, and produce unique lead "soaps."

These soaps grow to form a tough, impervious, intermeshing matrix within the paint film, as shown in the photomicrograph at right.

The soap formations increase Red Lead's protective power in several ways. For one thing, they mechanically reinforce and toughen the paint film.

At the same time they contribute all-important flexibility, allowing movement all along their soft, intertwining projections. This helps prevent the ruptures to which a hard unyielding film is subject.

Moreover, lead soaps slowly form primarily in the dry paint film as it ages. This is where the soap formations impart their greatest benefits. When a paint film weathers and ages, decomposition products of the vehicle are formed. Red Lead's ability to slowly combine with these decomposition products actually enhances the life of the paint film.

No matter what price you pay, you'll get a better paint for surface protection of metal if it contains Red Lead.

This photomicrograph shows the distinctive lead soap formations resulting from Red Lead's reaction with the vehicle. Note how the rod-like projections, radiating from central cores, spread out and intermesh. This makes a strong, flexible, interwoven structure, just as individual fibers in a piece of cloth are woven to make the cloth strong and durable.

Here you see the standard apparatus used for measuring the water permeability of paint films.

Experiments show that a straight linen oil film allows three times as much water to pass through the film as when the same film is pigmented with Red Lead...illustrating once more the beneficial protective action of Red Lead and Red Lead "soaps."

Write for New Booklet—"Red Lead in Corrosion Resistant Paints" is an up-to-date, authoritative guide for those responsible for specifying and formulating paint for structural iron and steel. It describes in detail the scientific reasons why Red Lead gives superior protection. It also includes typical specification formulas. If you haven't received your copy, address nearest branch listed below.

The benefit of our extensive experience with metal protective paints for both underwater and atmospheric use is available through our technical staff.

NATIONAL LEAD COMPANY: New York 6; Buffalo 2; Chicago 80; Cincinnati 3; Cleveland 13; St. Louis 1; San Francisco 10; Boston 6; (National Lead Co. of Mass.); Philadelphia 7; John T. Lewis & Bros. Co.; Pittsburgh 30; (National Lead Co. of Pa.); Charleston 25, W. Va., (Evans Lead Division).

Specify RED LEAD for ALL Metal Protective Paints

The value of Red Lead as a rust preventive is most fully realized in a paint where it is the only pigment used. However, its rust-resistant properties are so pronounced that it also improves any multiple pigment paint.

APRIL 1946
When the electrical layout calls for simple, compact control of light and power . . . call for Federal Multi-Breakers. On every class of project—residential, commercial or industrial—you'll find the Federal Multi-Breaker thoroughly dependable . . . convenient . . . attractive in appearance. There are types available for indoor and outdoor applications in a wide range of ampere capacities.

Write for a copy of the "Federalog," Address Dept. AR

FEDERAL ELECTRIC PRODUCTS COMPANY INC.
EXECUTIVE OFFICES: 50 PARIS STREET, NEWARK, N. J. • PLANTS: HARTFORD, CONN., NEWARK, N. J.
Manufacturers of MOTOR CONTROL • SAFETY SWITCHES • CIRCUIT BREAKERS • SERVICE EQUIPMENT • PANEL BOARDS
STRENGTH

to resist wind pressure, warping, rough handling and hard usage

To the inherent beauty, utility and convenience of Mesker Metal Windows, add STRENGTH... expressed in good design and assured by generous use of metal, giving a total thickness of 1\(\frac{3}{4}\)" to the casement.

Here is durability, long life, window satisfaction for years to come, for the mass of metal so essential to strength is rolled right into the shapes from which Mesker Windows are fabricated. No other metal window is made to such generous proportions! Just as you specify 1\(\frac{3}{4}\)" doors for strength, specify 1\(\frac{3}{4}\)" Mesker Metal Windows... for schools, hospitals, apartments, housing projects, office buildings, public buildings... wherever windows must last as long as the building itself.

MESKER METAL WINDOWS

MAIL THE COUPON NOW

MESKER BROS., Dept. AR46, 428 S. Seventh St., St. Louis 2, Mo.
Without cost or obligation, mail me the following:
☐ Book of Windows for Homes
☐ Book of Apartment Windows
☐ Book of School Windows
☐ Book of Hospital Windows
☐ Book of Office Building Windows
☐ Book of Industrial Windows

Architect__________________________
Address___________________________
City______________________________Zone________________State__________
Groping through a network of nerves and arteries, a surgeon is as dependent upon light as he is upon the instruments with which he works. Strong, steady lighting must be maintained. Yet despite all precautions of utility companies, storms, floods, fires, collisions and other accidents beyond their control can cause interruptions to normal electric current.

Danger of sudden light failure may be avoided. You can guard against it in the hospitals and other buildings you design. Exide Emergency Lighting provides safe, sure, modern protection. Batteries are always fully charged and connected direct to regular lighting circuit. And when their power is needed, response is instant and automatic.

Exide Emergency Batteries

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto
FOR many years intensive research on the cause and prevention of leaky brick walls has been conducted by various organizations and individuals, and much vital information has been gathered.

Most authorities agree that workmanship is the most important thing involved, but until now, no one has attempted to explain and illustrate the difference between good and bad workmanship.

"Type of Workmanship Recommended to Secure Dry Brick Walls" does just that. In it, a recognized authority on brickwork has compiled 16 pages of proven information — explanations and recommendations — 96 color illustrations. It is a major contribution to good building. It will be sent free to any architect, contractor or dealer who is interested in water-tight masonry.

Use the coupon to secure your copy. No obligation of any sort.

| Louisville Cement Co., Incorporated |
| 308 Guthrie Street, Louisville 2, Kentucky |
| Gentlemen: Without obligation, please send me a copy of "Type of Workmanship Recommended to Secure Dry Brick Walls." |
| Name: ___________________________ |
| Firm: ___________________________ |
| Street: _________________________ |
| City: __________________________ State: _________________________ |

APRIL 1946 59
IN ANSWER TO THE GREAT DEMAND

Production and Shipments are up

... of the one and only T/N

The graph tells only part of the story. Not only is T/N production increasing steadily but in quality, too, this most popular of water closets is better than ever.

In appearance and performance you are giving your customers the best when T/Ns are installed in their homes... an improved vitreous china fixture of one-piece construction, non-overflow, quiet in action, and non-syphoning.

As you can see, we're making a most determined effort to keep pace with the public demand.

W. A. Case & Son Mfg. Co., Buffalo 3, N. Y.
NOW!
A HOLLOW WALL
THAT IS COMPLETELY
HOLLOW!

GOLD BOND SYSTEM
WITH NEW METAL BASE
INCREASES ADAPTABILITY
AND DECREASES COSTS!

This new Gold Bond Hollow Wall System is highly recommended for fire resistant partitions where service piping and air ducts are to be concealed and where special consideration must be given to sound insulation.

The patented and exclusive Gold Bond Ceiling Runner and Metal Base Clips compensate for irregularities in floor and ceiling construction. This system being completely hollow has no cross ties or obstructions to interfere with installation of service piping. The Gold Bond Hollow Wall offers an underwriter's fire rating of one hour and sound insulation rating of 49.5 decibels.

Another advantage—and this is of vital importance to architects—all materials needed in the construction of this system are Gold Bond Products. Metal lath, channels, runners, metal base, plaster and lime—everything—are furnished by one manufacturer, National Gypsum. The resulting wall is 100% Gold Bond which eliminates that old bugaboo, divided responsibility. Available through any Gold Bond Dealer. For full-size details, please write National Gypsum Company, Buffalo 2, New York.
ACME BREWERIES built
SAN FRANCISCO, CAL.

THE EASIEST THING FOR A BUILDER TO FORGET...

Floors are what a building is for!
The owners wanted to anticipate that this building might have a change of occupant. Change is always a threat to any building. Q-Floor, however, takes all the bugaboos out of changing electrical layouts.

The steel cells of Q-Floor are crossed over by raceways. This construction makes it possible to set up an electrical outlet on any six inch area of floor. And it takes an electrician literally only a few minutes. No trenches. No mess.

The floor under the Acme machinery could sprout a hundred office-type outlets overnight. The arrow points to handhole to main raceway. Any six inch area of the floor can be tapped for an outlet. You avoid all the grief of anticipating partitions and outlets when you specify Robertson Q-Floor.

AND THEY MADE POSSIBLE FOR R. J. H. FORBES, contractor

20 to 30% reduced building time

Construction features of Q-Floor appeal to every client, also. Two men can lay 32 sq. ft. in half a minute and the Q-Floor immediately becomes a clean, dry, noncombustible platform for all other trades. From thousands of installations, Q-Floors have been shown to reduce building time 20 to 30%. Time saved is easily interpreted to your client as money saved or earlier revenue.

The noncombustible nature, the light weight, the lack of forms and shoring to cause accidents and fire are qualities which provide you fast construction with a variety of financial advantages that can be best summed up as greater client satisfaction. And don't have any illusions about cost. Q-Floors are made to sell and they sell well. Cost is right in line. For details, call a Robertson representative. For Q-Fittings see a General Electrical construction materials distributor.

H. H. ROBERTSON COMPANY

2404 Farmers Bank Building
Pittsburgh 22, Pennsylvania

Offices in 50 Principal Cities
World-Wide Building Service
Exterior type Douglas fir plywood is made with completely waterproof synthetic resin binder especially for permanent exposure to weather, water or abnormal moisture conditions.

Exterior type plywood has been used for years in buildings of all kinds—in box cars, reefer cars, trooper sleepers—in war craft, work and pleasure boats.

Be sure to specify only EXTERIOR TYPE for outdoor use. It is easily identified by the "grade trade-mark" EXT-DFPA on the edge of every panel.

Modern streamlined effects come natural with large, rigid panels of durable Exterior type Douglas fir plywood. As a matter of fact, this sturdy material has proved itself superior for exterior siding on almost every style of home, farm building, business and industrial building.

The big panels cover wall areas with a minimum of handling, sawing, fitting and nailing. They hold nails or screws right at the edge without splitting, bend to simple curves without breaking. They lend strength and durability to any structure.

Write the Douglas Fir Plywood Association for any technical data you desire. Such material is sent free to any point in the United States.
DEMONS of the drawing board, these two little wraiths
haunted draftsmen's dreams . . . 'til TURQUOISE took over.

THE LITTLE LINE THAT isn't THERE
Somebody drew him, but he died. Burnt out in the intense glare
of the printing machine, he became a pale shade of his former self . . .
a here-again gone-again phantom that flits erratically across the prints.

But TURQUOISE lines stay put. *Electronic graphite, super-refined in
Eagle's patented Attrition Mill makes even the thinnest line so opaque
and solid that it shows up . . . alive and hearty . . . on every print.

THE LITTLE LINE THAT shouldn't BE THERE
This is a stubborn little spirit. Drawn by mistake and erased,
he hides in the pores of the paper and pops out to pester you in the prints.

But unwanted TURQUOISE lines can be "killed" for keeps,
because there is no penetrating chemical
in TURQUOISE leads. All of the mark
is on the surface of the sheet—
a few strokes of an eraser remove it forever.

Write for a free TURQUOISE pencil or lead,
naming this magazine, your dealer,
and the grade you want.

and Bryant answers America's heating needs with everything from small space heaters to complete winter air conditioning

Millions of Americans are carefully planning homes. They are giving a lot of thought to heating. Surveys prove this and show a market of two and a half million heating units annually and that the trend is definitely to gas heating!

But what particular make of heating unit do Americans want? We've been asking them... and it's Bryant. For Bryant gas-fired equipment gives them all the advantages of automatic, efficient home heating. And there is a compact, smart-looking Bryant to fit perfectly into every type and size of home... to fill every heating requirement.

Talk to your Bryant distributor. Let him show you the factual presentation "Postwar Picture of Home Heating." You'll be amazed at the new beauty, new features, new convenience in the Bryant complete line of gas heating equipment. You'll realize that there is everything for full customer satisfaction... everything from small space heaters to complete winter air conditioning. In addition to the Bryant quality line, there are new steel gravity warm air furnaces, winter air conditioners and floor furnaces to meet the need of moderate-cost home builders. And there is a new Bryant line of modern automatic storage water heaters.

Check the Bryant Heater line of gas heating equipment with your distributor. Then, give your customers the heating they want. Give them Bryant!

BRYANT HEATER COMPANY, 17825 St. Clair Avenue, Cleveland 10, Ohio

One of the Dresser Industries

The most complete line of gas heating equipment in the nation!
HERE'S the latest window treatment for school buildings.
It helps to protect children's eyes—helps to reduce brightness contrasts—helps to make full use of natural daylight.

Note photographs shown here. Every classroom is "daylighted" with a combination panel of clear glass and the new Insulux Light-Directional Block.
The clear glass is used from sill-height to somewhat above eye level. Above that point—the new prismatic block is used.

The result? The main beam of light is bent upward to the light-colored ceiling and is reflected deep into the interior of the classroom. There is a substantial improvement in light distribution, more light from above, less interfering shadows.

Investigate! Panels of Insulux are now being used to "daylight" classrooms, lecture halls, laboratories, gymnasiums, libraries, swimming pools, corridors and entrance ways.

INSULUX
GLASS BLOCK

For technical data, specifications, and installation details, see our section in Sweet's Architectural Catalog, or write: Insulux Products Division, Dept. C-4, Owens-Illinois Glass Company, Toledo 1, Ohio.


Mathematics Classroom. Note that clear glass is used from sill-height to somewhat above eye level. Above that point—Insulux Light-Directional Block No. 351 is used.

Chemistry Laboratory. This room is flooded with softly diffused natural daylight. More light from the ceiling, less horizontal light, fewer shadows. Insulux Glass Block is a functional building material—not merely a decoration. It is designed to do certain things that other building materials cannot do. Investigate!
The ideal of The Otis Elevator Company for many years has been to provide the best and safest elevator transportation possible. To insure uniformity and the best results, each piece is manufactured by us under strict supervision; and the complete elevator is then installed by trained Otis mechanics.

Only one thing more has been necessary to make this ideal a reality, and that is a service which undertakes to maintain the completed elevator in the same fine condition in which it was when installed.

It is possible for owners of Otis elevators to contract directly with us, as manufacturer, for complete maintenance, to keep Otis elevators in the best condition, and preserve the elevator investment intact.

OTIS ELEVATOR COMPANY
Offices in all principal cities
A look at the past gives you a look into the future for aluminum windows. Their superiority is constantly being demonstrated in buildings of all types.

For example, take the building illustrated here. After 14 years, its 3100 Alcoa Aluminum windows operate just as smooth as the day they were installed... and they've never been painted.

Check some aluminum windows yourself. Ask about their maintenance cost. We believe you will convince yourself that windows of Alcoa Aluminum belong at the top of your list for the buildings you are now planning.

ALUMINUM COMPANY OF AMERICA, 1867 Gulf Building, Pittsburgh 19, Pennsylvania.

---

With Alcoa Aluminum Windows
You Can Count On...

Low maintenance
No rust
No warping
No staining

No painting required
Easy operation
Low installation cost
Maximum glass area

Better appearance

---

We are all expecting great things of F-M in radio (Frequency Modulation). In heating, F-M—"Full Modulation"—is already here, and is being installed in thousands of homes throughout the country. The Moduflow system, an exclusive Honeywell development, provides continuous flow of heat for every room in the home at the comfort temperature desired. Moduflow "Full Modulation" banishes temperature gaps, practically equalizing ceiling and floor temperatures. Much of the heat formerly wasted at the ceiling is used to heat the living part of the room; result all-over comfort with improved efficiency in operation. And unlike F-M in radio, Moduflow can be installed on present automatic heating systems. Send for your copy of the "Engineering Guide of the Moduflow Control System for Home Heating and Air Conditioning." It shows how Moduflow works and how it can be easily installed to create a new high standard of home heating comfort.

Be sure to specify "Moduflow" in every home you design or build.

Tomorrow's Apartment will have Personalized Heat Control...with Moduflow.

MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
2600 Fourth Avenue South, Minneapolis 8, Minnesota

Send for this FREE BOOK
Please send my free copy of the "Engineering Guide of the Moduflow Control System for Home Heating and Air Conditioning."

Address
Name
City State
THE QUALITY OF HOUSING WILL BE STRAINED

WE ARE in the midst of it now — arguing, persuading, legislating, pontificating about the ways and means to bring about the building of millions of dwelling units. By the time this is printed and read, the pattern will, we hope, be fairly well set and this period of confusion and uncertainty, debate and suspended animation will be succeeded by one of production. Debate and disagreement will not stop when, if, and as production gets under full steam for whatever means are chosen will be subject to criticism and to modification.

Production, maximum production, of building materials and equipment is the immediate necessity. Labor, management, capital, government and the public agree on that. But production under what terms, at what prices, wages, costs, controls? Inflation rears its ugly head. Government agencies are contriving to soften and postpone the effects of the present and inevitable inflation, to prevent prices from skyrocketing, speculation from going hog-wild. But holding the line on prices in the face of wage increases, setting ceilings so low as to remove the profit incentive, has already postponed production. Indications are that "the line" may be forced to bulge, at least enough to encourage producers to take a chance. The alternative, "premium-payments," subsidies, to producers in lieu of profitable-prices, has not been acceptable to either producers or legislators in the House. But the fight is still on as this is written and the wisdom of either course will be questioned even after the decision is made and directives are issued.

But the question of immediate means for increasing the quantity of production should not overshadow considerations of the quality of the end products. What kinds of houses? For rent or for sale? What kinds of rental apartments? In what kinds of communities? These questions are as important in the long run as how many. Vernon de Mars' considerations of housing for people in this issue are pertinent in this period of suspended animation. The houses and apartments now to be built can be models of balanced communities for democratic living only by modifying the present emphasis on the $6,000 house. Liberalizing this present exclusive fixation is necessary to prevent row after row of "cheap" closely-packed future slums. And the minimum possible interpretation of "essential" building to be permitted should include schools, hospitals, and community facilities — both in newly created communities and in existing neighborhoods.

If the flood of expected housing is not to be a blight and a liability to the city or locality (no matter how avidly the house-starved G.I. snaps up the better-than-nothing shelter) the architects and planners must work with the city fathers and with the operative builders. This is the time for improving the planning, for determining the quality, for setting the pattern. The time before the deluge may be shorter than we think, for politically time is of the essence and quantity may well overshadow quality — unless local groups take action now.

Kenneth K. Stowell
EDITOR
The design of this pioneer project was done from the inside out. The presentation is in the same order, to parallel the thought. It sets a new RECORD.

The architects wanted the advantages of the square classroom, hitherto a California type, but in a northeast region having the least abundant sunlight during the school year, instead of the most.

In the large rendering is seen the critical "extra" area of the square room, the "activity" section behind the drape. (Drape serves as blackout for visual education, see Feb. AR, p. 77.) To light this
added depth, architects of the Southwest have used either bilateral lighting (AR, June, 1945, p. 96) or deeply recessed clerestories (AR, June, 1945, p. 84).

Instead of imitating these methods, our architects re-analyzed the problem for the new locale. Rather than try to stretch the skimpy daylight available, they decided to provide abundant auxiliary artificial lighting. This would be necessary in any case, to yield really excellent lighting instead of the minimum secured by codes and rules.
Classroom above will be recognized as the same which Architect Will proposed in the February RECORD for audio-visual education. The low ceiling height (10 ft.) is an integral part of the conception, yielding a good intimate scale in relation to small children.

Plot plan, left, indicates the hilly terrain, with a 12-ft. drop in level along the ridge chosen for the building. This is utilized to create a two-story plan along the eastern side.

On completion, corridor seen directly above will be bilateral.
LOWER FLOOR, EAST ENTRANCE

Perhaps the most striking feature of this floor plan is the "bicycle entrance." Here bicycles are brought in across a grated floor to a parking space, under the auditorium, which provides for no fewer than 232 such vehicles, with future expansion for 88 more. Youngest pupils' rooms are segregated, in wing to right.

UPPER FLOOR, WEST ENTRANCE

The approach (see site plan) is by way of the generous porch next to the cafeteria. A big chimney-pylon flanks this entry. Noteworthy is the separation of classroom groups serving different ages, and the chance to shut off the entire southern section of the main wing for community use when school is not in session.
The library, seen below, is not only supplied with the pleasant fireplace and view, but is closely related, by a contiguous stair, to the visual education department on the floor below. The grouping of music and arts rooms near the auditorium gives the school, in effect, a "communications" unit.

Across-page, the upper view shows the gymnasium, and the lower view and the diagrams indicate the auditorium. Especially satisfying is the way in which the acoustical baffles are designed to correlate overhead with the lighting, and at the left side with a system of exits. Also, the main entrance is so placed as to act as a baffle against light from the corridor during motion picture projection.
The view above is seen through the windows of the cafeteria. Like all windows in the school, these admit maximum view and light, but not even the maximum is a great deal in the prevailing cloudy weather. To give an indication of the wide differences throughout the United States, the architects compiled data on average "sun-hours"—hours of unobstructed sunlight—in various cities. A part of their table is reproduced across-page. The school is not at Buffalo, but Buffalo figures are indicative for it. Note that, whereas Fresno in California gets 78 per cent of its possible sun-hours unobscured, Buffalo gets only 50 per cent. In mid-winter the difference is still greater, and in December, Buffalo averages only 2 hours of clear sun per day!
<table>
<thead>
<tr>
<th>Conditions of Sunlight</th>
<th>Fresno</th>
<th>Milwaukee</th>
<th>Atlanta</th>
<th>Buffalo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual sun-hours—average year</td>
<td>3568</td>
<td>2574</td>
<td>2733</td>
<td>2346</td>
</tr>
<tr>
<td>Possible sun-hours—average year</td>
<td>4580</td>
<td>4600</td>
<td>4640</td>
<td>4690</td>
</tr>
<tr>
<td>Approximate per cent of actual to possible sun-hours</td>
<td>78</td>
<td>56</td>
<td>59</td>
<td>50</td>
</tr>
<tr>
<td>Summer months (June, July, August)—actual sun-hours</td>
<td>1249</td>
<td>934</td>
<td>825</td>
<td>915</td>
</tr>
<tr>
<td>&quot; &quot; &quot; —possible sun-hours</td>
<td>1306</td>
<td>1360</td>
<td>1304</td>
<td>1372</td>
</tr>
<tr>
<td>Approximate per cent of actual to possible sun-hours</td>
<td>96</td>
<td>69</td>
<td>63</td>
<td>67</td>
</tr>
<tr>
<td>School months (Sept.—May)—actual sun-hours per day, average year</td>
<td>8.5</td>
<td>6.0</td>
<td>7.0</td>
<td>5.3</td>
</tr>
<tr>
<td>&quot; &quot; &quot; —possible sun-hours per day, average year</td>
<td>11.8</td>
<td>11.7</td>
<td>12.0</td>
<td>12.0</td>
</tr>
<tr>
<td>Approximate per cent of actual to possible sun-hours</td>
<td>72</td>
<td>51</td>
<td>58</td>
<td>44</td>
</tr>
<tr>
<td>Poorest month, average sun-hours per month</td>
<td>Jan. 135</td>
<td>Dec. 110</td>
<td>Dec. 147</td>
<td>Dec. 68</td>
</tr>
<tr>
<td>&quot; &quot; average sun-hours per day</td>
<td>4.35</td>
<td>3.55</td>
<td>4.78</td>
<td>2.19</td>
</tr>
<tr>
<td>&quot; &quot; per cent of average sun-hours to average possible</td>
<td>44</td>
<td>39</td>
<td>48</td>
<td>24</td>
</tr>
</tbody>
</table>

**APRIL 1946**
Here, at last, is the exterior that grew out of these interior provisions. The large view is of the lower, two-story level. The chimney-pylon, marking the entrance, has become in a degree the personal signature of the architects, and is the one concession to monumentality. At the top, across-page, is seen the end of the auditorium wing. Structure is to be concrete, heating radiant with auxiliary unit heater-ventilators. If arbitrary code requirements can be relaxed, the East will herewith obtain a school to stand with the best of the progressive West, though very different
DISPORTING IN

Marcel Breuer Architect
NO G. I. would have dared to dream of this seaside house, with its vari-colored fish pools on the terrace-porch, swimming pool just beyond the overhang, combination living-dining-gymnasium inside the glass wall. Yes, this is for one who can afford to indulge his whims, even if they run to colorful tropical fish in a series of pools tiled in different colors to give the fish exotic backgrounds. The house is playful throughout, in use as well as design. Bedrooms are in a separate structure, attached to main house only by a ramped hall.

The design really started with an existing swimming pool on a flat site overlooking the Bay in Miami. The pool runaround was extended to encompass newly-built fish pools, and to extend at the same level into the house. Roof of main house for sun bathing.
Marcel Breuer's scheme for a Florida seaside house is playful in plan and landscaping as well as design.
Located under the bedrooms, which are some three feet above the main house floor level, are garage and storage spaces, these then being adjacent to the parking-service yard and the service entrance. A ramped, covered hallway leads from bedrooms to the main house. Guest entrance to house portion is at the rear of the living-dining-gymnasium area. Exercise equipment in this area is conveniently near pool. Bedrooms in the main house are servants'.

The architect carried out the playfulness of the design even in structural features. The rear wall of the living portion is of heavy masonry construction with an extensive pattern of small perforations, these being little glazed openings. Also, the stairs to the solarium on the roof are cantilevered out from the wall. The wall toward the waterfront is virtually a sheet of double glass, with three doorways for convenient access to the terrace.
HERE are two kinds of housing. First, there is the way people live when they have free choice. This is presumably the way they want to live, but it includes also the way they could live, if they wanted to, and if certain things were done to make it possible. This concept must be contrasted with the way people are forced to live when they have no choice — the case not only of the slum dweller, but of the occupants of speculative building and public housing as well.

The battle for better cities and better housing has hardly begun, although the growing recognition of the necessity for such a battle in itself represents progress of a sort. The opposing forces here are not private housing vs. public housing but good living vs. bad living.

The real adequacy of the newer and apparently competent construction, whether private or public, is open to question. Granting all the limitations of economics, politics and inertia, is it really the best we can do?

New operative builders’ developments usually provide reasonably well for light, air and sanitation, and the typical, small, FHA-insured dwelling certainly marks an advance step in one part of the total housing picture, although sometimes at the sacrifice of really adequate space and privacy, indoors and out. Less good are the speculators’ row-house solutions to the need for higher densities where lack of imagination provides fake individuality instead of solutions reflecting an understanding of the true needs and desires of individual families. There are few if any developments in the speculative field which carry conviction to the observer that “here at last is 20th Century living within the economic reach of most of the people.”

When we turn to public housing we find that removal of the outstanding deficiencies of slum conditions has been such a preoccupation that other considerations, equally valid from the tenant’s point of view, have been ignored. Public housing has tended to change the pattern of living rather than to enrich it. Thus the nursery school play area and the playground are provided as substitutes for the private yard rather than as additions to it. People get refrigerators but no porches, a community center but no doors on the closets. The speculative builder has not disregarded popular preferences in such matters and even if a chiming door bell is his only concession to sales appeal, it represents a desire to please the customer — at least long enough for the sale. Public housing “gives the tenant what’s best for him, and no nonsense about it.”

The speculative builder has placed all emphasis on the object of sale — the house, and ignored the neighborhood and community. Public housing has done the opposite. All emphasis is on the community or “project”; architectural expression of the community as an assembly of individual households and diverse private lives is subordinated to emphasis on those shared facilities in which the individual’s interest should by implication lie. This seems to be the fault of designers rather than the result of official attitude or policy. The tendency of planners and designers to treat a housing development as a single and unified work of art is at the root of much conscious or unconscious popular resistance toward “projects.” One example is a middle western development of better than average design and carefully studied color scheme. The project has been treated as a large canvas, and color pleasantly used in broad subdued effects. Whole groups of houses massed in one color contrast interestingly from a distance with other groups. For certain negative effects in this broad canvas, large groups of houses are occasionally painted a dreary dun — effective as a background for other houses and colors.
but undoubtedly distressing to the families living in the houses or even to the visitor who finds himself surrounded by them.

Any large development is or should be an integral part of the city. Its "protected" character should be physical; that is, it might be circled by parks, etc., for practical reasons. Its "protected" character should not be psychological to the extent that the development seems to exist apart from the city or from the way the rest of the city is likely to be, or ought to be. But this is a prevalent error. Albert Mayer, reporting on a survey made for the Federal Works Agency, observes that most projects give one "a feeling of shock, as though the project just happened to be dropped into location." In contrast, he found particularly pleasant a project "which gave the feeling that one was simply entering a part of town rather nicer than the other parts."

If a development has 50 units, the architect likes to give the paper site plan a decisive shape, a center of interest and a well-defined "entrance to the project." As a result, the project seems to turn its back on everything around it. I may appear on dangerous ground here, for these would all seem to be innocent, even laudable, objectives. But what happens if the development is to have 100 houses, 500, 1,000, 5,000? It is still looked upon as the same entity. It may now have several "entrances." But there will be much less concern now with the "form" of any 50-unit part. The change in scale has given the designers a changed attitude toward the importance of that block of 50 families: now they are just another group which helps to support a really big "center of interest" in the total scheme. But to the individual nothing has changed.

I raise these questions as one who has not been without guilt in such matters and who is therefore quick to recognize the phenomenon when it occurs — which is often.

Why should houses planned for rental be a totally different product from houses built for sale, even though the requirements of the respective tenants may be identical? Why are large-scale developments (usually, though not exclusively, public) so coldly impersonal and institutional-looking — not at all what the tenants would like if they had any choice? On the other hand, why is the average speculative development such a naive and miserable example of modern achievement as compared with our motor cars, bathrooms and kitchens?

Let us consider the speculative (or operative) builder first, as he provides the bulk of new housing in the country and his efforts to a large extent determine the appearance of our cities. There is reason to believe that the characteristic pattern of such housing is not based on economic or social facts, although this pattern is so much the rule that it is considered fundamental. It is more likely that the pattern is the result of our uncoordinated, unrelated, compartmentalized methods of financing, producing and marketing housing as though it were so much yard goods here, so many bushels of wheat there, to be liquidated as easily as possible in the market place. Cloth and wheat are in a sense still raw materials rather than consumer products. They will be removed by the purchaser and fashioned into the desired end-products by the skill of dressmaker and cook. But housing cannot be removed from the market place for skillful blending into the wanted end-product: a satisfactory living environment. This blending must be done beforehand. When the products are finished, bright and new, all lined up and assembled in a great quantity for the installment plan or bargain counter, it is too late.

But what's wrong with housing that is planned? At the risk of oversimplifying a very complex problem, I claim that we usually go about the provision of housing in a wholly backwards manner. We take a piece of land and its cost, several financing methods and their costs, some construction systems, building codes, and zoning ordinances, and feed them into a hopper. After sometimes many and sometimes few turns of the handle, out of the bottom drops the neat solution which purports to be a synthesis of all economic and social factors. We are sometimes a little proud of the inevitability of this result — it seems so much like a scientific approach. The "solution" may read: "10,000 families can be most economically housed on this site in 12-story apartments" or "low-income families are best collected into groups of 500 to 1,000 families and placed in identical row houses which they must of course vacate when they no longer need subsidy." These are the neat, cold, so-called scientific, and, by implication, inevitable solutions.

Is either of these "solutions" the way all families under consideration want to live or indeed ought to live or need to live?

Another tendency which leads to similar results can be charged against the well-meaning designer of large-scale housing. The specific problem at hand is analyzed, and the tenants or clients being as yet anonymous, it is felt safe to generalize and say that any adequate solution will probably work as well for one family as for the...
next. Thus again the resulting housing pattern is likely to consist of an average unit and type solution for a limited social or income group — provided in numbers as great as the site, the city, or the program will bear. This seems to be the case whether we are considering FHA Title VI units for sale, an FHA rental apartment development, a public low-rent housing project, a speculation's medium income efforts, a large insurance company's venture into the housing field, or some of the developments abroad which may have been too uncritically imitated in housing solutions here. The purely visual effect of such design is dehumanizing and the lack of visible three-dimensional expression of the varied needs and desires of individuals is emotionally depressing to many people, whether or not they realize the cause.

A growing body of opinion both here and abroad is questioning these neat and accepted patterns of contemporary housing, private and public. The considerations involved are so basic that, if ignored, a continuance of present housing practices and patterns may doom a large part of new building after the war to physical and social obsolescence. The questions raised by these observers deal not so much with amazing new devices, methods, and materials which will sweep into the ash heap all known housing solutions, they concern more nearly a reappraisal of the results and trends in the mass provision (if not yet mass production) of housing. Not at all in a reactionary sense, they deal with important human and social values often found existing under uncontrolled conditions and at times lost under carefully planned conditions. They suggest the need for an end-product which first of all reflects the desires and needs of the people. What Hugh Pomeroy, Executive Director, National Association of Housing Officials, has to say about the city in general also applies to housing in particular: "The character and design of the general development of the city should not be determined primarily by formulae but by desiderata and standards that express the kind of cities we want — the kind that best serve the needs of the people in the particular situation, and their seeking for a satisfactory living environment."

There are tangible social dangers inherent in the type of developments we have been considering. The English, with a far greater experience in mass housing than our own, have come to such a conclusion. A study by the National Council of Social Services in 1943, commenting on over a million units of municipal housing and 2\(\frac{1}{2}\) million in private developments, has this to say: "All this work has brought many problems in its train since the social implications of what was done were recognized only after the event . . . defects of the earlier programs should be noted in order to avoid repetition. . . ."* Their next comment deals with the high costs and difficulties of living in developments too far removed from a worker's job. Second only to this in importance, however, comes the following: "Class distinctions have been emphasized to an undesirable

---

Another excerpt from "The Size and Social Structure of a Town" summarizes the English viewpoint: "One basic principle emerges from past experience. It is that every planning scheme should aim at producing one or more 'neighborhood units,' each fitting into the town to which it belongs, and each containing a socially balanced population."

This of course is English experience, but the same issue is raised in relation to the American scene by Miles Colgan, former Assistant Commissioner of the FHA. In the Architectural Forum for October, 1943, he writes: "There seems no sound reason why a neighborhood should contain exclusively one type of housing, one level of density, or one narrowly restricted group of residents. The tendency toward what FHA refers to as homogeneity may be overplayed, whether it be the types of houses or the incomes of their occupants, to the disadvantage of neighborhood stability and a democratic way of life.

"Diversity, of course, can, like uniformity, be carried too far. We have to recognize again that we are dealing with people who have preferences and prejudices as to the people around them. To the extent that such attitudes exist, they are facts that must be taken into account by the planner. The difficulty is in knowing positively to what extent they are facts, rather than something the planner himself takes for granted, and to what extent and through what means they might be successfully overcome should he have good cause for doing so. Here we need more enlightenment and perhaps greater willingness to experiment."

There will obviously be no solution to the housing problem unless much of our wartime productive energy is turned to this end. But it is equally obvious that, even if we use all that energy and know-how, the right solution will be far from inevitable.

The more hopeful of recent proposals seem somewhat mellowed, and the basic issues of a few years back are no longer invariably presented as black and white. There is nevertheless too much complacency — not merely with outmoded patterns, but with the bright new solutions of the last decade.

Once again a housing crisis faces the country. This time, however, there exists a great fund of housing experience to draw upon. If the surprisingly consistent conclusions of the critics are heeded, we may begin to see solutions which will truly reflect people's varying needs, desires, aspirations and pocketbooks.

To offer free choice of apartments, row houses, or single houses in a complete community, this project was planned by Vernon De Mars
Outdoor living centers in the spacious patio with its terrace and de luxe barbecue. Wide roof overhangs shield the expansive glass...

SHOW PLACE LIKE HOME

Postwar house, Fritz B. Burns Research Division, Los Angeles, California

Wurdean and Beckett, Architects
Eckbo, Royston & Williams, Landscape Architects
Joseph H. Schulte, Research Director
Bullock's, Inc., Decorators
Fritz B. Burns, Builder
Designed to enchant, astound, and inspire the home-loving public, this exhibition house displays a multitude of novel ideas, innovations, and devices. Manufacturers have supplied, and architects have incorporated, almost every known (and some till now unknown) contribution that our mechanical age is making to the ease, comfort, and delight of the prospective home builder. No expense has been spared in providing the utmost in glamour and gadgets "to bring into the focus of public opinion the very best in postwar thought that architects, builders, and manufacturers have to offer." This house has no direct relation to Mr. Burns’ other activity of producing low-cost houses with Mr. Henry Kaiser.

For this super-showplace, salesman Schulte, as head of the Fritz B. Burns Research Division for Postwar Housing, searched endlessly for building products and equipment among the nation’s leading manufacturers. Visitors will marvel at the results of applied ingenuity and opulence, for in this five-room house, are enough devices, material, and equipment to entail an expenditure of some $75,000. The site on the famous Wilshire Boulevard was naturally chosen for show and maximum traffic, and so justifies the land cost reported to be $75,000.

The plan is designed to provide maximum facilities for both indoor and outdoor living, the latter concentrated largely in the sunny patio. Living and dining are combined in one spacious room. Master bedrooms are en suite in one wing, kitchen and utilities in the opposite wing. One bedroom is isolated from the other two, and is separated from its bath by a utility room. This all-purpose bedroom (available only through the kitchen) could be used as maid’s room, guest room, (or "pest" room in case of measles), or as a study, office, game room, or den. Outdoor living facilities
provided in the patio include an elaborate fully-equipped barbecue. A covered way leads to the carport and the combined greenhouse and workshop, with its electrically operated roll-up aluminum door.

The exterior is of stone, glass, and varnished California redwood plywood, and the roof is a new type of shingles 1 ft. by 8 ft., with thick, shadow-casting butts. These shingles are of insulating board covered with bright sheet aluminum. All ceilings are acoustically treated, and doors are soundproofed. Window areas are of double glass and the house is thoroughly insulated, as every air conditioned house should be. The complete air conditioning system is controlled by the latest thermostats and an electronic air cleaner eliminates dust, pollen, and therefore allergies. The lighting engineering is ingenious and thorough, using flush diffusing devices, fluorescent and neon; light everywhere for inside and out, for seeing or display. A continuous electric outlet strip at the baseboard permits plugging in of electrical appliances at

Plant shelf and corrugated glass panel separate the entrance foyer from the dining end of the living room. The coat closet wall terminates the north bookcase wall with its clerestory lighting. Neon strip lighting, centered on the bookcases can be controlled for various intensities. The sectional seats forming the sofa can be moved out for conversation, home movies or television.
Living room fireplace is flanked with tambour-doored cabinets and decorative lattice backed with illuminated foliage.
any point in the room. Light switches are flush plastic glowing push plates. Pressure on the flush plate operates a low voltage solenoid which in turn operates the switch proper. Radios or loud speakers grace every room, with television in the living room. An intercommunication system also is provided. Electronic and control features of the house were developed by William W. Brockway.

Bathrooms simulate projected "packaged" baths, complete with silent-flush tankless water closet, adjacent radio, and magazine rack. A plastic, turret-type shower is part of the well-lighted tub. A circular illuminated, magnifying shaving mirror is above the compartment containing the electric toothbrush and shaver, both on retractor cords. Sun lamps, drying lamps, and radiant gas heaters are built in.

The kitchen has everything: ultra-modern range, with the four burners across the rear, electro-chemical garbage disposer, automatic dishwasher, revolving shelf cupboards, counter-height console-type refrigerator, a frozen food cabinet, desk, sewing machine, dining table, and cabinets galore with vertical sliding doors. Kitchen ventilation is arranged to carry odors and heat or gases from equipment, directly to the outside air to prevent recirculation through the house. Laundry equipment includes tray, automatic washer, dryer, mangle, and ironing board. The housewife's desk in the kitchen is the nerve center of the house, for here are the controls to operate the sprinkler system, to open the garage door, or to communicate with other parts of the house. The barbecue is a complete outdoor kitchen, as it has its own refrigerator dishes, storage cabinets, sink and, of course, its grill and oven.

The utility room, though small, contains the complete air conditioning system. Both fresh and recirculated air pass through the electrostatic filter, are heated or cooled, humidified or dehumidified, and delivered to the rooms at ceiling level. The system of controls is as automatic as possible.
Folding armrests add to the comfort of reading in bed. The telephone and master control board is handy at the bedside. Baths simulate projected "packaged" units, are replete with every conceivable convenience.
Boys' room has a plaid wall, of the same washable fabric as the other bedrooms. Dark green corduroy couches flank the chest and are as comfortable for day lounging as for sleeping. Mattresses are of sponge rubber. The double desk at the window has chairs of bleached oak upholstered in red leather.
The laundry side of the kitchen (left) is equipped with tray, washer, dryer, and mangle. Vegetable storage, frozen food cabinet and pressure cooker complete the row.

Above, the housewife's planning and control desk has its own radio and intercommunication facilities. Metal cabinets above the counters and range (at the right of the door) have vertical-rolling doors, eliminating head-bump hazards. Left, the complete and compact air conditioning system with its electrostatic filter is in the utility room.
Two studio couches upholstered in chartreuse boucle grace the all-purpose or guest room. The sectional bookcases and cabinets can easily be rearranged as whim or changes-in-use may dictate. The horse design of the upholstered chair is repeated in the drapery. The cotton shag carpeting is pewter gray. Beyond the open door is the barbecue. Windows at left look on patio
Sales Room for Bloomer Display

Showroom and Offices for Empire Bloomer Company, New York City

José A. Fernandez, Architect

The merchandise being bloomers, curves are the motif in the design of this small showroom. Nevertheless the general effect is chaste, though the colors are emotional." In these words the architect sums up his approach to the problem of exhibiting bloomers. The showroom has one curved wall, as does the lobby. Curves abound in the glass screen that separates the two selling tables. They are given prominence in the copper wire mesh screen at the entrance to the showroom, also in the linoleum border. The Fernandez wallpaper, in gold, gray and off-white, covers the long curved wall, and serves as background for the little glass showcases hung on the wall. The vertical rods with the company sign on them are accented by different shades of rose. Workrooms are screened from the entrance lobby by a curved partition of corrugated glass.
Sales table with glass dividing screen is of pickled oak. Corrugated glass screen in background was contrived to hide ugly existing windows. Wall cabinet under the screen is pickled oak, as is the woodwork of the chairs, which are covered in "American Beauty Rose" leather.
SHOWROOM FOR COSMETICS

Offices and Showrooms for Mem Company, New York City

Hans Weiss
William Basser
Designers
WHOLESALE selling of cosmetics does not require much space, but it does require effective staging. Here the designer has reached for two opposite effects in the same showroom — feminine in one portion, masculine in the other. The curving walls of the ladies' cosmetics section are done in hand-printed linen covering, cherry red highlights matching the comfortable chairs. In the men's-goods department the decor is more restrained — beige painted walls and pickled oak woodwork. Floor is light and dark brown marbleized linoleum.
THis small ticket office for an air line, one of a row of such offices in the Statler Hotel Building, in Boston, needed something more than a strictly utilitarian atmosphere. It needed salesmanship, a striking and immediate visual appeal. And that it undoubtedly does have; in a row of conventional offices it is conspicuously attractive. While the free-formed ceiling surfaces, strongly profiled in gypsum plaster, serve to hide an irregular ceiling, they also carry a suggestion of plane contours. Indirect and spot lighting add interest.
Walls and ceilings are painted in light gray, table tops are black. Cushions are upholstered in alternating Chinese red, cobalt blue, cadmium yellow and gray, giving a gay note to the room.
"Considerable success for picture postcard or calendar purposes . . . as in Janus-faced Davenport College (two lower views) which is Gothic on one side and Georgian on the other, with a cupola that sits equally well either way . . . Parasitism thus compounded becomes habitual, and the only way people would awaken to the incongruity would be through being compelled to put on a powdered wig over a monk's habit and carry a flintlock . . . into the modern bathroom. The colleges seem to sense the incongruity."
In any college building program of today the central problem is not how to meet conditions but how to get around meeting conditions. College administrators are hacking their way through the brush of purely imaginary problems which have been thrust upon them, or self-imposed, as "custodians of tradition."

In their educational program these educators are constantly endeavoring to push back frontiers, to extend knowledge into new fields and forms. In their building program they are asked to push back to the old frontier, and dress up their new plans, materials, and equipment in knee breeches and periwigs.

Architects are asked to achieve one of two things, mutually exclusive:

(a) To "match" the good old buildings that are already on the grounds with others as nearly like them in outward appearance as possible — though there is entirely different equipment inside. This is called "discipline."

(b) To create "harmony in diversity" by an admixture of "styles" or stylistic details that may have been historically thousands of years apart, but are all hallowed by belonging to the respectable past. This mutual respectability is presumed to guarantee consonance without further question.

In the name of "tradition" college administrators are asked, above all, to avoid innovation in appearance — though of course not in equipment or the arrangement of minor divisions that passes for planning — because no one knows whether it may not become ridiculous over a period of years. Above all, honesty and straightforwardness are mistrusted as snares set by the devil for the unscholarly, however well they may have served our ancestors now safely across the Divide.

Preoccupied with these "do's" and "don'ts" the administrators are never able to get around to the direct problem of erecting buildings as a solution to the human needs of their teachers and their students.

The first notion, that a building in order to harmonize with neighboring structures must be of the same style or period, is erroneous. It is not even historically a respectable attitude but an aberration of thought peculiar to one or two recent decades.

Some of the buildings, the squares, and the towns that we most admire in Europe are examples of admixture by new growth. The group at Pisa, considered by many as the most beautiful aggregation in the world, is built in the "Romanesque" style except for the Baptistry which was completed some years after the Cathedral and the Leaning Tower. Part of this structure is in the "Gothic" style. Those who finished this great work had too much respect for the art of the former masters to try to copy it. They completed it in the prevailing vernacular with such sympathy and understanding that no one's esthetic feelings are disturbed. Quite the contrary.

Facing on the great Piazza of San Marco in Venice are great examples of architecture built centuries apart, and strengthened in effect by one another. The Cathedral,
which started out in the Byzantine style, was built in the 12th and added to in the 13th and 15th centuries. It is happily in place with the soaring 9th-century Romanesque campanile or the 15th-century Doge’s Palace.

These builders did not know themselves as Gothic or Romanesque or Byzantine — that was for the later Gothicists and the Romanesquites and the Colonialisticites — they simply built to the problem at hand in the best and latest way they knew how, and behold, it all fit.

Some colleges have felt obliged either to mix the “styles” or to shift from one style to another across a separation of some thousands of years. Unlike the original evolution, these sudden shifts do not grow out of changes in sense and sensibility but out of whim, or even out of budget policy. Occasionally the success is considerable for picture postcard and calendar purposes, as in the case of the famous Janus-faced Davenport College at Yale, which is Gothic on one side and Georgian on the other, with a cupola that sits equally well either way (page 106). If it is possible to be so “successful” by combining the habitations of medieval monks with those of British lords and Virginia governors, the difficulty is understandable of achieving success by being direct. Parasitism thus compounded becomes habitual, and the only way people would awaken to the incongruity would be through being compelled to put on a powdered wig over a monk’s habit and carry a flintlock over their left arm into the modern bathroom.

The colleges seem to sense the absurdity of building 11th-century monasteries for 20th century students, or even Virginia governors’ palaces. The administrators are afraid to submit these projects to their own architectural departments, manned by scholars who understand better than any others the everlasting Tradition of Right Building. At any rate, these men who know the building problem best are conspicuously absent from the building committees entrusted with the masquerade which has the arrogance to usurp Tradition’s mantle.

Why is it that those who are not upset by the sight of even the strangest bedfellows are so afraid of what is called “modern” architecture? The principles of real architecture have not changed. Why start with past styles, which are merely cast-off garments, and an oblique approach to the building problems peculiar to our age? Intrinsically the college should face the question of how its students should be allowed to live — what way of life the college should and can provide.

What happens to students as personalities when they spend their whole social life in groups, and only their sleeping quarters are separated off into private cubicles? What happens when the student’s individual room is his combined social center, study and bedroom, one of fifty on a corridor? Or one of four on a floor? What has the college decided about the queer duck? about cliques and groups? about contacts between men and women students? about the right place for recreation?

The architect has much left to do after the decisions of the college have been registered. He has to decide what makes a stimulating and satisfactory place of a room or collection of rooms, above and beyond the physical requirements of space and furniture, heat and light. In so doing he encounters those complex interrelationships between what used to be called “commodity, firmness, and delight,” that give him a handful of work even when there is no interference.

Another vexing problem is that of the future. The colleges have by and large been trying to meet it by pretending that there is none — that if you choose the right past you can make it everlasting. The fact is that we do not know, and cannot know, what will be the best kind of college building five years hence. All the more do we have to make all buildings flexible — as flexible and adaptable as can be. If we could divorce ourselves from copied standards and get at the intention with a free mind, concerning ourselves with good versus bad design, not style versus style, we might develop an expression which is architecture, not archaeology, which is independently alive, not parasitic, which is therefore in that great central Tradition of building which the colleges now traduce.

"Formerly, respect was too great for predecessors' work to try copying it"
FACTORS IN DORMITORY PLANNING

PURPOSES of college building committees are unusually confused. Considerations of student welfare vie with the profit motive and sheer sentiment. Dormitories are the only income-producing buildings on the campus, earning from about 2 to 5 per cent, and money today is cheaply borrowed. Serving different concepts of student welfare, plan groupings range from the big university quadrangle (lower plan, left), where freedom gains from the impersonality of several hundred similar cells, to the "entry system" which surrounds each stair hall with a minimal number of rooms, and reproduces the close social unanimity of the fraternity house. Intermediate types tend at present to group the students, mostly in single rooms, about 10 to the floor or wing, on three or four floors. The profit approach to a program usually begins with the kitchen. It has often been assumed that the best balance between kitchen efficiency and palatable meals is struck in a size serving about 150; but that dining rooms should be held down to 75. The same kitchen is then made to serve two dining rooms, each flanked by its separate dormitory wing. (See Colby College plans, pages 112, 113.) In the current Smith College-Progressive Architecture competition program, this theory was discarded in favor of separate kitchens serving dormitory units of 60, which the winners grouped by 10's in bilateral wings of 3 floors. Solutions become more complex in coeducational institutions, where the men may take their evening meals at the women's houses.

This year, social planning aims are yielding ground to high construction costs, leading to primitive arrangements that achieve a large number of rather small rooms per stair hall. Colleges seem ready to sacrifice basic convenience and spaciousness to construction costs before giving up alumni and donor sentiments about "style." Over the long run, the lowest construction and maintenance costs can indisputably be obtained, with minimum sacrifice, by the directness and simplicity of good contemporary design. The trend, though slow, is in this direction. The high expense of Gothic (Rhoads Hall at Bryn Mawr achieved a record $4,407 per student in 1937) compelled an advance
Sorority House at Berkeley, California
Gardner Dailey, Architect

This was finished in 1939; it reflects the
taste of the younger generation in that
year more faithfully than college-built
residence halls might. The choice of
furniture in the individual rooms was the
girls' own; living room furnishing was by
Armstrong, Carter and Kenyon
of some three centuries in ten years as the colleges swung to "Georgian." Since costs still rise, perhaps another two-century gap may be closed in the next five years.

The long-term course of events is, of course, unpredictable — college dormitories having in general followed the domestic habits of the educated, so that during the slum-building years there were produced some first-class college slum plans (bottom, p. 109) and in the halcyon days some elaborate Tudor estates (p. 106).

In one particular the backwardness has been scandalous. In a thorough survey, the Army found in 1944 that an unnamed "relatively high" percentage of eye impairment had been occurring during the four-year course at West Point, in buildings not unlike college buildings elsewhere, and that 76 per cent recovered, fortunately, in a year after graduation, from the deterioration in college. Perhaps up-to-date design would be a more responsible procedure than following any style fads.

Our late-retiring generation has needs vastly more exacting than sufficed our ancestors who rose and retired with the birds. "Adequate light at the desk, if possible natural; even light in the whole field of view; more light on the work than strikes the eye" — these stipulations mean radical change.
TYPICAL DORMITORY ARRANGEMENT

COMPACT DORMITORY PLAN, Colby College, Jens Frederick Larson, Architect

This plan can serve almost as a schematic diagram of the predominant type of dormitory planning for smaller colleges. It is for Senior girls. The basic plan element is the kitchen so arranged as to serve two dining rooms, each with a capacity of 75. Rooms are predominantly single and compact, arranged usually in groups for 10. Lavatories and student laundries are placed in the angles. Note the skilful isolation of the infirmary, which is directly connected with kitchen.
CRITICAL ANALYSIS OF EXISTING PLANS SHOWS ROOM FOR IMPROVEMENT

Group 1 and 2: Closets off the entrance. All plans of this type have the dual disadvantage that closets are dark, depending on artificial illumination, and that doors bump. By varying the room width and cutting the closet space alternately out of one or another of two rooms, architects have produced differences. Skimpy windows, in these plans as in most dormitory plans, have made good desk placement difficult. Thus in (1) above, the desk takes most of the free floor space, and in (3) and (4) the student works in his own shadow. In the group below, (11) is especially bad—the generous floor space being devoured by the desk; but, pushed in the corner it would get no light. The double rooms in (2) below are compact, but with all occupants knocking one another out at entrances, closets, dressers, washbowl. No. (3) is fair. It permits desks to face the light—occupants will have less glare to contend with, actually, than in any of the other plans, if thin curtains are used on brilliant days, because brightness is even

Group 2
Group 3: Storage at side partitions. Here we have considerable improvement, though doors still bump and dressers still abrade the storage function unimaginatively into the social area of the room. In (4) there is an approach to neatness, although the dresser is fairly shouting to be built-in. In (3) the unimaginative fixation of architects on stock dressers is at its worst: the gain in space and appearance through having the dresser recessed is largely nullified by the awkward cleaning problem producing dirty corners. In (1) the storage space would be well lighted naturally, and the storage represented by the protruding dresser could have been absorbed into the design. The front is broad enough for the simple and workable sliding doors of contemporary design which have worked very well in homes and private schools. But college architects seem to have employed no devices later than Colonial ones.

Group 4: Segregation of sleeping. These are old plans which suggest new possibilities, especially if progress is made in fenestration. At left, "porch" sleeping; right, common study.
DORMITORY INTERIORS

ARCHITECTURAL RECORD
The Bryn Mawr furniture seen on the left-hand page was photographed for this building types study after six years in constant use. It was designed by Marcel Breuer. Note the ruggedness, the functional detailing, and size adequacy. On this page, left, conventional dormitory furniture. Center, a highly useful suitcase closet in corridor. Below, a Yale first-year architectural student's design for his own preferred living space, indicative of the taste of the present college generation for pleasant spaciousness, adequate fenestration.
PLANNING FOR DORMITORY FOOD SERVICE

By Mary deGarmo Bryan *

The experiences of architects who plan dormitory food services and dietitians who operate these services indicate the importance of early and frequent conferences at all stages of planning and construction. General preliminary considerations include:

Type and variety of food services and the policy of financial operation. Who is to be served, when, how, and at what charge to clientele and cost to the college?
The amount of space. Allowance for dining room, 10 to 12 sq. ft. per seat; for kitchen, approximately one-third dining space; storage and employee facilities in addition.
Location of space. Ground floor or first floor preferable. Preparation and serving on the same floor if possible. Staple stores may be located in basement if adequate elevator provisions are made.
Orientation for good natural lighting and ventilation. These must be supplemented with artificial lighting, good suction provisions over the cooking areas and air-conditioning when possible, especially in warm climates.

After these general decisions, preliminary plans will be drawn, with the dietitian and the architect checking the following details:

Delivery of supplies

Entrance point for delivery of supplies: avoid ramps; avoid entrances at tops of hills in cold climates where roads are likely to be slippery. Do not put delivery entrances near sleeping rooms; the noise is disturbing.
Office of food controller should be near entrance point. This person checks and weighs all material on delivery.
Platform and portable scales, unloading table (portable) and checker’s desk should be near entrance point.
Provisions for linen and uniform delivery and collection and dispensing of these items to employees must be considered in delivery point planning.
Corridors (at least 6 ft. wide) and doorways (at least 4 ft. 8 in. wide) to permit delivery of all types of containers and use of trucks. Avoid ramps, stairs and elevators if possible. If service elevator is required, provide one at least 5 by 7 ft. in depth, 3500 lb. min. capacity.

Storage of supplies

Storage of staple foods. Space should be carefully calculated on the basis of amounts of food to be stored as determined by accessibility to market, numbers to be fed, and types of menu. New food processes, such as deep freezing and dehydration, will make drastic changes in the nature and type of storage space required. Storerooms should be well lighted and should contain the following equipment: metal shelves; platforms for bulk storage; sink for cleaning purposes; scales; tables; and space for any records which may be kept there. Staple food storage space should be located in cool areas of building; running pipes should be avoided, especially those which are heated at any time. Storage areas should not be located next to boiler rooms; must be easily accessible to delivery entrance.

Storage for root vegetables. Space required is calculated as for staples; should provide slatted platforms or bins easily cleaned; should be in cool, well-ventilated areas.

Storage for foods which must be kept under refrigeration. Wide ranges of temperature and types of refrigeration are required in modern food service. Calculate space requirements as for staples. Storage space is required for meats, dairy products, fresh fruits and vegetables; for holding ice cream and frequently for making it; and, in many instances, for the deep freezing of uncooked and cooked foods and for holding these items.

Ice-making provisions may also be necessary and in all cases provision must be made for holding of ice for beverages and for chipping and transporting it to the storage and serving points.

Walk-in boxes for preliminary storage must be accessible to delivery entrance. Floor insulation for walk-in boxes should be placed flush with corridor floor levels so that trucks may be rolled in with ease.

Boxes for prepared foods must be accessible to units in which they are to be used. In some serving areas it may be convenient to open reach-in boxes from both sides.

Preparation of vegetables and fruits

Preparation areas must be easily accessible to delivery entrance and to refrigerators. In some modern installations, fruits and vegetables are prepared for final finishing before being put into refrigerators. This saves a great deal of space and avoids double handling of materials. In such a plan the routing of vegetables and fruits to

“Before and after” views of equipment layout in Johnson Hall Cafeteria, Columbia University. New arrangement eliminates serious impediments to food and customer handling caused by obtrusive columns in original counter plan

* Dr. Bryan is Supervisor of Food Service and Professor of Institutional Management at Teachers College, Columbia University. Photos: Courtesy S. Blickman, Inc.; Owen Webber
refrigerators should be by way of preparation rooms. Refrigerators must also be accessible to the cooking and finishing areas. Vegetable and fruit preparation areas must provide: ample table space (may be portable); adequate number of sinks conveniently located (at least two in addition to the peeler sink); convenient location of machines such as peelers, mixers, slicers; navigation space for hand trucks and delivery wagons; adequate shelves; excellent lighting (20–30 f.c. on work surfaces); no cross traffic to refrigerators through preparation space; routing from the preparation area without cross lines of traffic to cooking areas and with minimum handling in a direct manner.

Cooking

Placement of equipment to provide adequate work space; smooth flow of materials being processed.

Connections for each item of equipment such as gas, electricity, hot water, cold water and drains must be carefully considered, and extra power and outlets to take care of possible developments in electronic cooking.

Suitable ventilation: Cooking equipment requiring hoods should be centralized; 6280 cu. ft. of air change per minute per sq. ft. of hood is recommended. Excellent lighting over all work areas (20–30 f.c.).

Serving

Routing from refrigerators and cooking area to serving points must be accomplished with minimum handling and in direct flow for both hot and cold foods.

Space for proper holding of hot and cold food must be provided at service points just preceding service.

Delivery of dishes to serving areas, return of dishes from serving areas to the dishwashing unit and subsequent delivery of clean dishes again to serving areas must be carefully worked out. Space for storage of dishes, trays, silver, linen, etc. are required at points of service; portable shelves under counters may be used.

Serving area must be well lighted and attractive.

Checking and cashiering facilities, if cafeteria, must be provided.

Routing for waiter or waitress, if service, must be carefully planned. Routing for bussing dishes, if service, must be considered.

Cleaning

Floor drains are required at suitable points throughout the storage, preparation, kitchen and service areas and around steam equipment. Steam connections should be provided for cleaning kitchen. Slop sinks must be conveniently located for adequate mopping and cleaning.
of all food preparation and serving and dining areas.

Provision for storage of cleaning equipment and cleaning supplies must be made. This will include a room for storing portable trucks for holding mops and brooms which would otherwise be left to stand on floor and lean against walls. Cleaning closets must be well ventilated and lighted. Provision for washing and drying mops must be included. Good lighting of cleaning closets and corridors is essential.

Garbage disposal (to be specifically determined by situation). General provisions include:

Garbage cans on dolly trucks at all points where waste is collected. Garbage refrigerator, if garbage must be held. Incinerator, if feasible. Garbage grinding machines installed in soiled dish tables and at preparation areas may be used in addition to garbage cans.

Provision for washing garbage cans: water, steam, drain, in a suitable area (inexpensive washing machines are available). Racks for drying and storage of garbage cans. Provision for handling other types of waste, such as paper, containers, etc.

Provisions for guests

Service and dining rooms must be as accessible as possible to all residents of the building. Cloak rooms must be provided if guests come from outside or from other buildings. Provision for leaving or checking books must be considered.

Space for students to stand while waiting to reach the serving counter must be provided if the service is cafeteria style. No cross lines of guest traffic.

Plan below shows great flexibility in use. Kitchens A and B can be used singly or combined, with all or part of dining space. (Agricultural and Technical Inst., Morrisville, N. Y. Project of N. Y. State Post War Public Works Planning Commission: Gerard Betz, Architect; Owen Webber, Counsel on Public Feeding.) Photo cross page shows use of glass in place of metal kitchen hoods at U. S. Merchant Marine Cadet Basic School, San Mateo, Calif.; Gardner Dailey, Architect.

Plan courtesy S. Blickman, inc. Owen Webber

ROGER STURTEVANT Photo
Dining spaces should be pleasingly and suitably finished and decorated in materials which can be kept immaculately clean at minimum cost. Sound deadening is essential in all dining areas.

Provisions for personnel

Entrance and exit, preferably only one, under control of manager or kitchen supervisor. Time clock at a location where it may be punched by employees in uniform, ready for duty, and in uniform, going off duty.

Adequate locker rooms for changing from street clothes to uniforms and for safe keeping of employees’ belongings. Washroom facilities: adequate toilets and bowls (ratio of fixtures to employees will vary with local codes); soap and paper towels in containers near entrance to locker rooms; in some climates it is necessary to provide showers. Comfortable rest rooms for short periods off duty during working hours. Rest rooms should be well ventilated and lighted and simply but attractively furnished with regard for maximum cleanliness.

Drinking fountains in rest rooms and in kitchen. Hand sinks for use of employees in kitchen. Separate locker facilities for student employees; anterooms where they may change uniforms; wash room.

Provisions for special occasions

Additional rooms which can be thrown into large dining rooms or used for small groups as desired. Provision for food service in dormitory social rooms such as lounges and game rooms.

In all provisions for special occasions, consider: accessibility to main preparation and service areas; extra cloak room facilities; convenient storage space for additional supplies and equipment required for special service.
DORMITORY MAINTENANCE

By Style and by Common Sense

By Lewis S. Beach

Mr. Beach is Manager of the Division of Maintenance and Construction, Yale University. He throws an impartial light on the effect on maintenance of the two main current "styles" and of different materials. His suggestions are appended.

In all buildings where healthy able-bodied students live, the maintenance costs of the dormitory section depend not only on the architecture and construction and materials, but also on the will of the occupants. The effect occupants have on the maintenance cost is no small item. In spite of rugged construction and rigid restrictions, a group of residents can materially increase the maintenance cost during their period of occupancy. In these times of over-crowded rooms and in buildings bulging at the seams, records of maintenance costs are of little value in long-range planning.

In any large college or university in the United States the residential units tend to be built in "quadrangles" or "colleges." At Yale the average "college" normally houses from 170 to 200 students in single study-bed-rooms and double suites of two bedrooms and a study. There are residential accommodations also for the Master of the College and his family and for four resident Fellows, besides an office for each non-resident Fellow. Each college has its own dining hall, in which all members are expected to take the majority of their meals. Each dining hall is serviced by a fully equipped kitchen, storage rooms, and preparation rooms. The college has its own library and common rooms, a minimum of two squash courts and several small recreation rooms.

This variety in the types of occupancy calls for special equipment and construction details. In the Master's house are to be found all the maintenance problems of a large private home; in the dormitory, those of a hotel.

At Yale the architecture of the residential quadrangles is Gothic and Colonial. The first group was done in pure Gothic. There has been a gradual trend toward Colonial as new units were planned and constructed. The facades of the Colonial units adjacent to the Gothic have been treated in like architecture and through this median there is a gradual transition from Gothic to Colonial. As a result of this excellent architectural treatment the entire group blends into one homogeneous unit.

In considering various kinds of material employed in the construction of these units we must apply the acid test; namely, Time. The College units have been in the construction of these units we must apply the acid operation from seven to sixteen years. The exteriors of the entire group blends into one homogeneous unit. There is a gradual transition from Gothic to Colonial. As treated in like architecture and through this median. The figures under "Routine" and "Special" are in general over a two-year period. "Routine" includes those items of maintenance occurring daily, mostly small; but which in the course of a year amount to a sizeable portion of the total cost. "Special" includes the larger items of maintenance. These two classifications are the result of a new system of accounting and budgeting inaugurated four years ago. The other classifications are self-explanatory and are considered part of the "Special" account under our present system. In general these costs are of eight-year and ten-year average.

Where the styles cost piles

The difference in cost between Gothic and Colonial buildings is small. In the tabulation, "Routine" items show the greatest difference and this in favor of the Colonial type. Many factors enter into this item. Under "exterior" there are snow removal and roof leaks which we know are high on Gothic buildings. The narrow balconies and recesses, and the lack of gutters, all tend to make trouble when snow and ice come. The selection of plumbing and electrical equipment has a great deal to

122
do with interior "routine" costs. The type of architecture of a building has little effect on this selection except in a few instances, such as electric fixtures in the large rooms. Although there is a definite saving through the use of brick on stair and corridor walls, this saving can be eliminated by one bad plumbing leak or an electrical failure involving removal and replacement of the brick. "Routine" costs are also determined by the occupants. There are so many factors which determine this cost that we do not believe "Routine" should be considered in making a comparison.

**Pointed architecture costs for pointing**

The "Pointing Costs" are higher for Gothic buildings. Wide mortar joints cause trouble. Parapets on roofs and at balconies require pointing and waterproofing. Colonial architecture with its simple masonry construction and tight mortar joints is less costly.

Roof costs are high for Colonial types in the tabulation, but one large factor must be considered and a correction made before comparing. There are, or have been, large areas of flat tile decks on these buildings. Many of these have been replaced with slag built-up roofs. This has been a costly maintenance item.

**Little panes are big pains in painting**

"Out-Painting Costs" are very much in favor of Gothic design. Sash is the large item of this cost. Wood sash and sills require more frequent painting than do steel or bronze, with much time taken on the muntins.

"In-Painting Costs" are less for Gothic. Brick and tile walls on stairs and corridors, oak wainscoting in rooms, rough plaster walls and ceilings and, in general, a more somber treatment of the interior, make for lower maintenance costs than do plaster wainscoting, smooth plaster walls and ceilings in rooms, corridors and stairs, and a lighter treatment of paint colors and wallpaper.

It is difficult to arrive at a definite conclusion that because a particular building is built in Gothic or Colonial style, it is going to be less expensive to maintain. There are advantages to certain elements of each type of architecture. Should the best of each of these ever be combined on one building, that building will be the dream come true for the maintenance man.*

**Please don't do these things**

No matter what the style of architecture, there are certain "Don'ts" which may be of interest to architects and engineers. These have been selected at random. They are offered in a spirit of friendly and constructive observation, based on experience.

1. Don't specify many different types and kinds of equipment for buildings which become in time component parts of a larger unit. Standardize even at the risk of being classed unprogressive.
2. Don't fail to keep a complete record of all changes in the plans. It costs money to try to locate something where it "ain't."

*That building would simply be a contemporary building. The idea that you have to build less well than you know how, in order to stick with an ancestor who knew less than you do, is a purely collegiate aberration. — Ed.

**SUMMARY OF MAINTENANCE COST INDEXES — RELATIVE COST PER 1000 CUBIC FEET PER YEAR**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Two-Year Cost Total</th>
<th>Routine Items</th>
<th>Special Items</th>
<th>Pointing</th>
<th>Roofs</th>
<th>Out-Painting</th>
<th>In-Painting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gothic Buildings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A — 2020 M cu. ft.</td>
<td>2.23</td>
<td>1.50</td>
<td>.83</td>
<td>.23</td>
<td>.03</td>
<td>.08</td>
<td>.18</td>
</tr>
<tr>
<td>B — 1768 M cu. ft.</td>
<td>2.13</td>
<td>1.78</td>
<td>.52</td>
<td>.08</td>
<td>.01</td>
<td>.05</td>
<td>.42</td>
</tr>
<tr>
<td>C — 1423 M cu. ft.</td>
<td>2.52</td>
<td>1.83</td>
<td>.75</td>
<td>.03</td>
<td>.16</td>
<td>.09</td>
<td>.65</td>
</tr>
<tr>
<td>D — 1422 M cu. ft.</td>
<td>2.76</td>
<td>2.10</td>
<td>.55</td>
<td>.18</td>
<td>.08</td>
<td>.14</td>
<td>.59</td>
</tr>
<tr>
<td>E — 2188 M cu. ft.</td>
<td>2.23</td>
<td>1.45</td>
<td>.78</td>
<td>.15</td>
<td>.03</td>
<td>.10</td>
<td>.22</td>
</tr>
<tr>
<td>F — 1317 M cu. ft.</td>
<td>3.49</td>
<td>2.10</td>
<td>1.52</td>
<td>.26</td>
<td>.14</td>
<td>.06</td>
<td>.34</td>
</tr>
<tr>
<td>Average</td>
<td>2.56</td>
<td>1.79</td>
<td>.83</td>
<td>.12</td>
<td>.08</td>
<td>.09</td>
<td>.40</td>
</tr>
<tr>
<td>Colonial Buildings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G — 1580 M cu. ft.</td>
<td>2.48</td>
<td>1.46</td>
<td>1.13</td>
<td>.14</td>
<td>.08</td>
<td>.26</td>
<td>.67</td>
</tr>
<tr>
<td>H — 1675 M cu. ft.</td>
<td>2.03</td>
<td>1.45</td>
<td>.70</td>
<td>.04</td>
<td>.06</td>
<td>.20</td>
<td>.25</td>
</tr>
<tr>
<td>I — 1583 M cu. ft.</td>
<td>2.48</td>
<td>1.65</td>
<td>.86</td>
<td>—</td>
<td>.20</td>
<td>.40</td>
<td>.51</td>
</tr>
<tr>
<td>Average</td>
<td>2.26</td>
<td>1.52</td>
<td>.89</td>
<td>.09</td>
<td>.11</td>
<td>.28</td>
<td>.48</td>
</tr>
</tbody>
</table>

**APRIL 1946 123**
3. Don’t omit lead or metal caps on tops of chimneys. A single protecting piece of metal which keeps water out of the masonry will save expensive pointing and waterproofing treatments.
4. Don’t use wide joints in exterior masonry. These are a constant source of trouble.
5. Don’t make “special orders” of standard articles of equipment. Ten years after construction it is almost impossible to get repairs or parts for such items, and expensive replacements are necessary.

Ideal for maintenance

So much for the “Don’ts.” The ideal structure for economical maintenance should incorporate the following materials and design elements:

Roofs. Slate where surfaces are sloping. (Omit Golden Pheasants.) Slag built-up roofing on flat surfaces gives much less trouble than other types that may rise and leak. Overflow scuppers for all areas having parapets. The upper glass in a skylight must overlap the lower, not be butted against a strip joint. Roof insulation must in our opinion always have a breathing space of changing air above it, even when vapor-sealed. On the roof ridge, lead does best when coated on copper for added strength.

Exterior Walls. A good hard-burned brick laid in lime-mortar with a tight joint. A minimum of soft stone trim. Through metal flashings under all cap-stones.

Mortar: The old Bureau of Standards cement formula tended to shrinkage and cracks, and is being superseded, in good practice, by the newer formula of 1 part cement, 2 parts lime putty, 5 parts sand.

Windows: Steel or bronze, each securely anchored and well caulked and equipped with a simply sturdy adjuster.

Doors. Oak doors designed to eliminate all ledges and recesses which might hold water.

Interior stairs and corridors. Walls of brick or tile and floors of concrete integrally colored are our best recommendation.

Walls of rooms. In men’s dormitories, from a maintenance standpoint, oak wainscoting with smooth painted plaster above on walls and ceiling will best “stand the gaff.”

Heating system. A two-pipe hot-water system with a heat exchanger if on steam system.

Plumbing system. All fixtures standard, installed with brass pipe or tubing equipped with sufficient control valves.

Electrical system. Standard equipment with sufficient capacity for future expansion. Lighting to be ample, simple, and with standard fixtures.

It is easy to give “Do’s” and “Don’ts.” It is difficult to incorporate these in the design of a building which has to fulfill definite requirements beyond easy maintenance; but the problem is a real challenge to architects, engineers, and maintenance men.

RESIDENCES FOR MARRIED STUDENTS

Purdue University

Walter Scholer, A.I.A., Architect

A building type such as that shown here could scarcely have been imagined in 1939 or earlier. The rendering indicates a group of apartment houses for married students at Purdue. This means married veterans, of course. In the total program, now under construction, there are 22 groups similar to the one sketched, containing 200 apartments. Some are provided with additional bedrooms and there are other variations in plan.

The buildings are of brick cavity-wall construction, and the plans, as may be seen, make every last use of compactness.

Universities that have chosen this kind of economical permanent construction are doing far better by the veteran than those that are still dragging around the trailers.
"29% decrease in typists’ errors!"

"47% decrease in employee turnover!"

"37½% decrease in absences!"

Your Clients can have Results like These if you specify Acousti-Celotex

SOUND CONDITIONING!

Q. That’s claiming a lot for sound conditioning. Where’s your evidence?
A. The Aetna Life Insurance Company. By actual test in its own offices, this leading company conclusively demonstrated that sound conditioning paid those dividends. What’s more, over-all efficiency of employees was increased 8.8%!

Q. What’s the most widely used sound conditioning material?
A. Acousti-Celotex®—the original and genuine perforated fibre tile. For more than 20 years Acousti-Celotex sound conditioning has paid real dividends in offices, schools, factories, hospitals, stores, banks, restaurants, churches and theaters. And the Acousti-Celotex distributor organization is the world’s most experienced—with the know-how of more than 100,000 acoustical installations. So consult your local Acousti-Celotex distributor. His advice is yours without obligation and he guarantees results.


Sound Conditioning with Acousti-Celotex®
Perforated Fibre Tile

Sold by Acousti-Celotex Distributors Everywhere • In Canada: Dominion Sound Equipments, Ltd.

A PRODUCT OF THE CELOTEX CORPORATION, CHICAGO 3, ILLINOIS

APRIL 1946
PORTAIT OF AN -ALMOST- MODERN ARCHITECT

is buildings are examples of perfection—the last word in streamlined, functional design... were it not for one all-important detail: Lighting efficiency.

No building is better than its lighting—and no lighting is better than its fixtures. That’s why so many leading architects agree on Day-Brite Lighting. It is optically engineered.

Illustrated is recessed louver-type troffer available for one and two 40-watt lamps. For use with snap-in and other acoustical ceilings.

Day-Brite Lighting, Inc., 5465 Bulwer Avenue, St. Louis 7, Mo.
Nationally distributed through leading electrical supply houses.

In Canada: address all inquiries to Amalgamated Electric Corp., Ltd., Toronto 6, Ontario.

IT’S EASY TO SEE WHEN IT’S
DAY-BRITE Lighting

ARCHITECTURAL RECORD
COLLEGE DORMITORY PLAN ELEMENTS

Check list of units and recommended practice

Prepared with the assistance of Elizabeth C. Gibbs, Manager of Residence Halls, Teachers' College, Columbia University.

Acknowledgements are made to Moore & Hutchins, Shreve, Lamb & Harmon, Hornbostel & Bennett, Jens Larson, architects.

STUDENT BED and STUDY ROOMS:

Single: Approximately 40 sq. ft. of space is required for mere placement of furniture, based on the following usual dimensions: bed, 3 by 6½ ft.; dresser, 1½ by 3 ft.; desk, 2 by 3 ft. (minimum); bookcase, ¾ by 3 ft.; chair (desk), 1½ by 1½ ft.; chair (easy), 2 by 2 ft. Provision for arrangement and use of these articles requires a total space allowance of at least 80 sq. ft. Additional provision for marginal and "living" space sets a total single room standard of 108 sq. ft. of clear space, minimum, with 120 to 140 sq. ft. desirable. Width of single room should never be less than 8 ft.; 9 or 10 ft., preferable.

Double: Two hundred sq. ft. of clear space, minimum; more where possible. Twelve-foot minimum width is desirable to provide each student with his own bed, dresser, desk, study and easy chairs, and at least part of a bookcase, suitably arranged in relation to convenience, comfort and light.

Bookshelves: Twelve feet of bookshelf space is required for graduate students; 6 ft. for undergraduates. Built-in shelves are recommended.

Closets: Space should not be taken off room area. Closets should be for individual use, with 32 by 40 in. the absolute minimum allowance; more is particularly desirable for women and in moist climates. All closets should be ventilated (louvered); should provide: shelves for hats, racks for shoes, rods high enough for long evening dresses. Towel racks should not be installed in closets.

Electrical outlets: Provision should be made for desk, reading, and bedside lighting and a light over the lavatory, where present. At the desk, within student's field of view (at least 150°), brightness ratios over large areas should ideally approach unity, with ratios of 3 being still considered good. If light on the desk is 25 f.c. and the reflection factor of tasks is between 45 and 80 per cent, then footlamberts of brightness should be not less than 5 f.l., minimum, or 15 f.l., desirable. In practical terms, even a strong down light on the desk will not achieve this standard by itself, and in some form (indirect or direct-indirect), additional light must be thrown on surfaces in this area.

Locks: It is desirable to have the same key open room door, closet door and post office box.

BATH and TOILET FACILITIES:

Lavatories should be included in individual rooms, especially women's, wherever possible. Medicine cabinets, glass shelf, towel rack and good light should complete the installation.

Common bath and toilet rooms. Separate but adjoining rooms, one for toilets and basins and one for showers, is preferred arrangement. Currently acceptable ratios of fixtures to users are as follows: 1 toilet to 5–6; 1 shower to 6–7; 1 basin to 3–4 (where lavatories are included in individual rooms, 1 or 2 basins in the common area are considered sufficient). In women's dormitories, tubs, in addition to showers, must be provided at a ratio of 1 to 15–20. Minimum space allowances are: 3 by 4 ft. for each toilet compartment; 5½ by 6 ft. for each tub; 3 by 4 ft. for each shower compartment; 3 by 4 ft. towelling space for each shower; 3 by 4 ft. for each lavatory compartment. Additional space must be provided for access.

SOCIAL and RECREATIONAL ROOMS:

More elaborate in women's dormitories than men's. Possible provisions are:

Large main living room: easily accessible from the main building entrance and large enough to accommodate comfortably all the members of the unit. Plan for removal and temporary storage of furniture during dances. Adjoining kitchenette and service facilities are usually provided. Supplementary rooms or alcoves are often provided for entertaining small groups (parents, etc.).

Smaller lounges or smoking rooms, preferably one on each floor, equipped with easy chairs, radio, card tables, etc. Kitchenette may be provided in conjunction with 1 or 2 burner electric stove, sink, work counter, refrigerator, closets and cupboards.

Recreation or game room providing for ping-pong, radio, phonograph, etc. An adjoining kitchenette is also desirable. Plan for removal of furniture for dancing. Avoid locating rooms in basement.
Effect of one application of heat on a 16 oz. soft copper gutter installation. Note the bulges on the side and bottom of the gutter, and the pinching effect at the point of stress where the copper sheet is bent.

The same gutter after 12 cycles of heating and cooling. The pinch has now developed a visible crack in the copper. The temperature range for each cycle exceeded Nature's 150° change from maximum in summer to sub-zero in winter, and it is thus estimated that each cycle in the laboratory is equivalent to one year of actual service.

AND REVERE'S ANSWER TO IT

Above you see a close-up of a copper gutter that has failed... one that was forced to fail in the Revere laboratory under conditions similar to those in actual service. But here the process could be watched, photographed, analyzed... and the remedy scientifically developed by Revere research.

The result is that failures in sheet copper construction can now be avoided. In a new 96-page book, Revere covers the entire subject, from research and analysis of the problem to its solution through sound engineering design... plus 58 pages of details dealing with every type of sheet copper construction of importance to architects and contractors. All necessary data and figures are given in easy-to-use charts.

While the limited supply is available, a copy of this valuable book, "Copper and Common Sense", will be sent free to any architect or contractor requesting it. Write today on your letterhead to Revere.
Library, preferably on an upper floor so that dormitory occupants may use it in informal dress.

The elements listed above may be combined in various ways, but total space allotment for social and recreational rooms should be not less than 20 sq. ft. per student housed.

Guest facilities should include coat room, connecting toilet and lavatory, adjacent to main entrance. Overnight accommodations should include bedrooms, baths; living rooms, if possible.

**ADMINISTRATIVE UTILITY ELEMENTS**

*Administrative office*, near the main entrance, usually provides for student mail, messages, packages, etc.; telephone service; record keeping in connection with student life and house management. Customary space allowance is 15 sq. ft. for each desk and its chair; 5 ft. in front of each filing cabinet; aisles between tables and desks, 3-4 ft.

*Corridors* should be at least 5½ ft. wide to permit passage of maid’s truck, furniture and trunks.

*Sink and utility closets*, large enough to hold maid’s truck, vacuum cleaner, brooms, mops, etc.; at least one on each floor; ventilated to the outer air.

*Linen closets* should be provided on each floor, with white enameled shelves and counter space.

*Incinerator* with hopper doors, and *Linen chute* with openings on each floor.

*Trunk storage space*, allowing at least 45 cu. ft. per trunk; if racks are used, additional space must be allowed for handling and movement; *Hand luggage store rooms* on each floor.

*Freight elevator* is required even in a two or three story building. Should be automatic and large enough for trunks, furniture, stretchers.

*Passenger elevator* is required in all halls with more than three living floors. Need exists for street level entrance for students in wheel chairs or on crutches.

*Housekeeper’s office and linen room*, preferably on ground floor near employee’s and delivery entrance; with storage and counter space for linens and supplies. Provisions for sewing and mending, and for cleaning furniture, rugs, etc.

*Locker, lunch, and rest rooms* for employees should be adjacent to housekeeper’s office.

*Laundry*. In dormitories with over a hundred beds, with assured steady patronage from this number, house laundries are frequently operated on a self-supporting basis.

*Living space for staff and employees*. Suites for directors and members of the house staff should be segregated from student areas. Employees such as cooks, maids, etc. should have separate entrances to their living area and well-lighted single bedrooms of 100 sq. ft., minimum; double rooms not less than 160. Staff members usually eat with students; employees should have own dining room.

**STUDENT UTILITY ELEMENTS**

*Laundries, and pressing rooms* are for the most part provided only in women’s dormitories. Except where students do all their own clothing and room laundry, 1 tub for 25 occupants is usually adequate, with each tub requiring a minimum of 2 by 6 ft. Pressing boards require 4 by 6 ft.; a fair proportion of irons and boards is usually 1 to 20-25 students. Drying rooms or cabinets are essential. Although laundry elements are frequently centralized, smaller units on each floor are preferred, possibly in combination with kitchenettes.

*Sewing rooms* are considered essential in women’s dormitories, and should include one or two electric sewing machines, long mirror, long work table, ironing facilities unless element is combined with pressing room. Ratio of equipment: 1 to 20–25 users.

*Shampoo rooms* with shampoo bowls, rinsing sprays, electric dryers, etc. are sometimes provided.

*Typing and music practice rooms* — isolated or soundproofed — are often provided.

*Sports equipment storage and maintenance space* is particularly desirable in cold climates.

*Telephones*. The most satisfactory arrangement is a switchboard in the administrative office, a corridor telephone for each 20–30 residents and a two-way buzzer system to each room.

*Infirmaries*, if appended, should be isolated at ends of wings nearest kitchen; separate entrances.

*Kitchens and serving areas* are not treated in this T.S.S. For discussion and check list by Dr. Mary DeGarmo Bryan see AR, April ’46, p. 118.

---

Time-Saver Standards

Library, preferably on an upper floor so that dormitory occupants may use it in informal dress.

The elements listed above may be combined in various ways, but total space allotment for social and recreational rooms should be not less than 20 sq. ft. per student housed.

Guest facilities should include coat room, connecting toilet and lavatory, adjacent to main entrance. Overnight accommodations should include bedrooms, baths; living rooms, if possible.

**Administrative Utility Elements**

*Administrative office*, near the main entrance, usually provides for student mail, messages, packages, etc.; telephone service; record keeping in connection with student life and house management. Customary space allowance is 15 sq. ft. for each desk and its chair; 5 ft. in front of each filing cabinet; aisles between tables and desks, 3-4 ft.

*Corridors* should be at least 5½ ft. wide to permit passage of maid’s truck, furniture and trunks.

*Sink and utility closets*, large enough to hold maid’s truck, vacuum cleaner, brooms, mops, etc.; at least one on each floor; ventilated to the outer air.

*Linen closets* should be provided on each floor, with white enameled shelves and counter space.

*Incinerator* with hopper doors, and *Linen chute* with openings on each floor.

*Trunk storage space*, allowing at least 45 cu. ft. per trunk; if racks are used, additional space must be allowed for handling and movement; *Hand luggage store rooms* on each floor.

*Freight elevator* is required even in a two or three story building. Should be automatic and large enough for trunks, furniture, stretchers.

*Passenger elevator* is required in all halls with more than three living floors. Need exists for street level entrance for students in wheel chairs or on crutches.

*Housekeeper’s office and linen room*, preferably on ground floor near employee’s and delivery entrance; with storage and counter space for linens and supplies. Provisions for sewing and mending, and for cleaning furniture, rugs, etc.

*Locker, lunch, and rest rooms* for employees should be adjacent to housekeeper’s office.

*Laundry*. In dormitories with over a hundred beds, with assured steady patronage from this number, house laundries are frequently operated on a self-supporting basis.

*Living space for staff and employees*. Suites for directors and members of the house staff should be segregated from student areas. Employees such as cooks, maids, etc. should have separate entrances to their living area and well-lighted single bedrooms of 100 sq. ft., minimum; double rooms not less than 160. Staff members usually eat with students; employees should have own dining room.

**Student Utility Elements**

*Laundries, and pressing rooms* are for the most part provided only in women’s dormitories. Except where students do all their own clothing and room laundry, 1 tub for 25 occupants is usually adequate, with each tub requiring a minimum of 2 by 6 ft. Pressing boards require 4 by 6 ft.; a fair proportion of irons and boards is usually 1 to 20–25 students. Drying rooms or cabinets are essential. Although laundry elements are frequently centralized, smaller units on each floor are preferred, possibly in combination with kitchenettes.

*Sewing rooms* are considered essential in women’s dormitories, and should include one or two electric sewing machines, long mirror, long work table, ironing facilities unless element is combined with pressing room. Ratio of equipment: 1 to 20–25 users.

*Shampoo rooms* with shampoo bowls, rinsing sprays, electric dryers, etc. are sometimes provided.

*Typing and music practice rooms* — isolated or soundproofed — are often provided.

*Sports equipment storage and maintenance space* is particularly desirable in cold climates.

*Telephones*. The most satisfactory arrangement is a switchboard in the administrative office, a corridor telephone for each 20–30 residents and a two-way buzzer system to each room.

*Infirmaries*, if appended, should be isolated at ends of wings nearest kitchen; separate entrances.

*Kitchens and serving areas* are not treated in this T.S.S. For discussion and check list by Dr. Mary DeGarmo Bryan see AR, April ’46, p. 118.

For a thorough treatment of elements and planning considerations from the college administrator’s standpoint (somewhat dated) see “Planning Residence Halls” by Harriet Hayes.
**Announcing**

**CORNING'S COMPLETELY NEW LIGHTING GLASSWARE**

*ALBA-LITE* Lightingware is what the lighting industry has been waiting for. This is the answer to the needs of Modern Fluorescent Lighting. Here are some of the outstanding features of *ALBA-LITE*

Flat or Bent ... Straight-edged or Flanged ... Plain or Patterned ... Annealed or Tempered.

**BENT ONLY TO YOUR SPECIFICATIONS**

*A FEW SUGGESTED BENDS*
Homogeneous Glass . . . Light diffusion is secured through the special homogeneous composition of ALBA-LITE rather than through surface treatment. The result is a smooth, easy-to-clean surface and permanent, uniform color.

High Light Efficiency . . . A translucent glass with high light transmission and low light absorption.

Impact Resistance . . . Regularly supplied annealed; may be tempered for added mechanical strength and safety.

Design Flexibility . . . Opens up numerous design possibilities and adds beauty and luster to any lighting assembly. Supplied flat or bent to your specifications with or without flanges. Light in weight—in $\frac{3}{8}$" or $\frac{3}{16}$" nominal thickness.

Send for Free Sample of ALBA-LITE . . . Send your request on your company letterhead.

Be sure to see the Corning Exhibit Featuring ALBA-LITE—BOOTH 46

International Lighting Exposition in Chicago
April 25-30
REQUIRED READING

CITY PLANNING


When a book on city planning, written by a Viennese architect and originally published in 1889, is translated into English for the first time in 1945, it might be expected to prove, as this volume does, the timelessness of good planning. The art of building cities was an old art long before this book first appeared, and its guiding principles have not varied much from the precepts laid down by the ancient Romans. This 57-year-old classic might have been written only the day before yesterday.

Consider: "The pros and cons of various city planning systems have become pressing questions of the time," Camillo Sitte wrote in the preface to the first edition. They certainly remain so today. And one of the principal requirements of practical city building he emphasizes is "to rid the modern system of blocks and regularly aligned houses."

Considerable space is devoted to a study of the public square and the planning of important buildings thereon. The deep square for the slender Gothic building, the wide square for the expansive, are suggested as the goals to strive for. The square must be neither too small nor too large: "Experience shows that the minimum dimension of a square ought to be equal to the height of the principal building in it, and that its maximum dimension ought not to exceed twice that height unless the form, the purpose, and the design of the building will support greater dimensions." As for the placement of buildings and monuments, the center of the square is just out as far as Camillo Sitte is concerned. With diagrams and descriptions of well-known ancient squares he explains why.

"It was Sitte's contention," says Arthur C. Holden, in his supplementary chapter to this English translation, "that fundamentals, though long neglected, can be uncovered. Even the gridiron pattern of the modern American city is not hopeless. Space can be opened up. Design can be achieved by thinking more of the grouping of buildings and by planning for the outdoor space between them than by confining our efforts to the design of individual façades which can never be seen anyway except as part of unrelated compositions."

An interesting feature of Mr. Holden's supplementary chapter is his analysis of New York City and Washington, D. C., in the light of Sitte's theories.

U.S.S.R. BUILDING


About 250 American and 50 Soviet participants attended the American-Soviet Building Conference last spring. Their discussions followed four main lines: building industry organization; prefabrication; industrial buildings; and mechanical systems and utilities of the small house. Here is a complete transcript of the entire conference.

TOURIST CABINS

Tourist Court Plan Book, Temple, Texas, Tourist Court Journal, 1945. 8 by 12 in. 84 pp., 51 plan sheets, illus.

From the staff of Tourist Court Journal comes this handy workbook on motels. Containing a series of articles on financing, location, layout, air conditioning, plumbing, dining facilities, landscaping, etc., it offers a variety of plans for cabins and main buildings.

(Continued on page 134)
"How much will heat and power cost in this development?"

...specify TODD Burners for minimum fuel consumption

The problem of estimating future operating costs is restraining many business men from making decisions on building projects. A major item in operation is the cost of producing power and heat.

For more than thirty years, Todd has led the field in the development of combustion equipment with maximum power capacity coupled with minimum fuel consumption. There is an economy-proved line of Todd Oil or Gas Burners, fully automatic, semi-automatic, or manually controlled, to fit all requirements, regardless of the type of building or the power set-up. In addition, special equipment can be tailored to meet your exact specifications.

Before selecting burners for your new or remodeled buildings consult Todd Engineers. They will cooperate with you in every way in meeting the individual needs of your clients' power plants.

COMBUSTION EQUIPMENT DIVISION
TODD SHIPYARDS CORPORATION
601 West 26th Street, New York 1, N. Y.

NEW YORK, BROOKLYN, ROCHESTER, HOBOKEN, NEWARK, PHILADELPHIA, CHICAGO,
50, PORTLAND, ME., BOSTON, SPRINGFIELD, MASS., BALTIMORE, WASHINGTON, DETROIT,
GRAND RAPIDS, TAMPA, GALVESTON, HOUSTON, MOBILE, NEW ORLEANS, LOS ANGELES,
SAN FRANCISCO, SEATTLE, TACOMA, MONTRÉAL, TORONTO, BUENOS AIRES, LONDON

APRIL 1946
To the inherent characteristics of steel floor plate (such as durability, ability to stand tough traffic, oil, heat, fire and crack proof and no maintenance cost) add, for A. W. Super-Diamond these three distinctive advantages well worth knowing about for safer floors. Notice the shape of the elevations and the pattern? 30% minimum contact area with the shoe. Sloping sides that maintain "sharpness" of contact, resist dirt collection, make for easier cleaning, better draining. And a pattern that matches more easily with less scrap! These are reasons why alert architects, builders, product engineers, and purchasing agents are insisting on AW Super-Diamond Floor Plates.

So you can Count on these 3

- Grip without a Slip!
- Easy to Clean!
- Easy to Match!

AW SUPER-DIAMOND
FLOOR PLATES THAT GRIP
A Product of ALAN WOOD STEEL COMPANY

REQUIRED READING

(Continued from page 132)

PUBLIC HOUSING


Commissioner Herman T. Stichman reports in detail the activities of the New York State Division of Housing for the year ending March, 1945. Of most interest is the inauguration of the Community Development Service, set up to help communities formulate programs of housing and development.

The report includes a useful series of tables giving the "vital statistics" of the various housing projects completed — area, number of buildings, type of accommodations, costs, rentals, etc.

Periodical Literature

SCHOOL LIGHTING


Last summer a classroom in the Bowditch School, Salem, Mass., was re-modeled in such a way as to serve as an experimental laboratory for brightness engineering. Here is the report on what was done and what results were achieved.

Among the interesting methods used to improve the seeing conditions were: the use of white chalkboards instead of the conventional blackboards; substitution of cotton crash cloth pasted over celotex for the customary cork in the tackboards; installation of vertical louvered fixed at 90° to the window glass in place of Venetian blinds; use of posture-aiding furniture; and selection of cheerful colors which look the same under daylight as under artificial light.

HEATING


In this article a Canadian architect offers a convincing argument for the "modern well equipped and strategically located central or district heating systems which have proven their value in hundreds of cities and towns all over the world." Mr. Page explains what the system is, how it works, its advantages and its disadvantages.

Also included in the article is a discussion of the possibility of heating buildings electrically, and the pros and cons of panel heating. The special heating and ventilating problems of industrial plants are taken up briefly.
The Point is—

KIMBERLY
Carbo-weld
DRAWING PENCILS

ARE AS MODERN AS TOMORROW'S ARCHITECTURE

KIMBERLY'S styling with the dark green enamel dress, rounded end and white collar is second only to the "Built-in-Quality" in this modern pencil. Lead that is ground for hundreds of hours—the Carbo-Weld processing and accurate uniform grading all contribute to make KIMBERLY the strongest, smoothest, most modern drawing pencil.

Let KIMBERLY help you to turn out a fine job. There are 22 degrees to choose from, 17 are drawing, with an Extra B intense black for layout artists and Tracing 1-2-3-4 to make clean, crisp, dense lines for good blueprint reproduction.

General Pencil Company
67-73 FLEET STREET, JERSEY CITY 6, N. J.

Write to Dept. R for free pencil (mention the degree). Buy them from your dealer or if unavailable send us $1.00 for prepaid trial dozen of your favorite degree or assortment.

(This offer good only within U.S.A.)
American Institute of Electrical Engineers; and American Institute of Chemical Engineers. All are represented on the committee. Headquarters are in the Engineering Societies Bldg., 29 W. 39th St., New York City.

DINING SURVEY
Of more than 2,000 American housewives who expressed themselves on the subject of dining facilities in a recent survey conducted by House Beautiful, some 90 per cent specifically preferred a separate dining room. The preference existed uniformly throughout all age groups.

In summing up its findings, however, the magazine reports that people want a multi-purpose dining room that can be joined to the living room for entertaining. The center dining room may be eliminated, and new kinds of furniture may be introduced to permit the room to serve diverse purposes. Movable, scientifically engineered storage accommodations would be preferred over built-in units. Incidentally, 73.1 per cent of those answering the questionnaire plan to build or buy a house.

TEACHERS NEEDED
Increased enrollments at the schools of architecture may require additional teachers in the near future. Those qualified and interested in teaching positions should send their personnel records to Professor Paul Weigel, Secretary, Association of Collegiate Schools of Architecture, Department of Architecture, Kansas State College, Manhattan, Kansas.

FELLOWSHIPS
The Graduate School of Design of Harvard University will offer two or three fellowships for advanced study in city or regional planning for the academic year 1946-47. The stipends will not exceed $1,500 each. Applications should be made prior to April 15 to the Chairman of the Department of Regional Planning, Robinson Hall, Harvard University, Cambridge 38, Mass.

The applicant should give a thorough account of his training and experience and should outline his program of study or research which he would undertake were he to be awarded one of the fellowships. Fellowships are ordinarily open to students who are candidates for the Master's degree or for the Doctorate. The requirements for entrance as candidates for these degrees are stated in the pamphlet of the Department of Regional Planning which may be obtained by writing the Secretary of the Department at Robinson Hall.

NEW AWARDS
Establishment of a group of awards for Latin-American university civil engineering graduates has been announced by Col. William N. Carey, secretary and executive officer of the American Society of Civil Engineers.

A fund of $1,600 in cash has been turned over to the Society by L. F. Harza, Chicago consulting engineer, for use in providing entrance fees for junior membership in the Society, first year's dues and a Society badge for selected, qualified engineer graduates. No more than eight such memberships will be awarded in any one year, nor more than two to any country in one year.

Selection of candidates is to be made for outstanding scholarship, personality and interest in Pan-American affairs.

REAL ESTATE COURSE
As a part of the extension course of Rutgers University and under the supervision of the Society of Industrial Realtors, the first meeting for a college course in Industrial Real Estate was held at 730 Broadway, Newark, N. J. Speakers of the evening were Eugene Hill, national
SECURITY — AND SOMETHING MORE

Your client's opinion of a completed decorative scheme is not based only on the first impression—its beauty, but also on its practicality and permanency. The use of FABRON insures lasting approval, for it transforms cold plaster into a decorative surface that is attractive and lasting.

When execution of a job at the lowest bid is involved, conventional wall finishes are not immune to impairment of quality. FABRON, however, provides full protection because this fabric, plastic and lacquer wall covering cannot be diluted or altered before installation—its quality is uniform and standard, and remains so to the last. FABRON'S safeguard to interior walls extends even further—it prevents plaster cracks, conceals blemishes, its fast-to-light colors insure the correct execution of your decorative scheme. Its maintenance is simple and easy—it can be cleaned or disinfected as often as necessary.

FABRON, furthermore, offers great latitude to your decorative composition and its initial cost falls well within present-day budgets.
OUTSTANDING FEATURES
of the YORK ALLIS-CHALMERS
TURBO COMPRESSOR

1. Low center of gravity of compressor—permitted by trough type cooler—cuts vibration, provides accessible operation.

2. Stainless steel impeller blades resist erosion and corrosion assuring perfect wheel balance. Blade rivet heads are eliminated to provide unobstructed gas flow.

3. Balance piston to equalize wheel thrust makes necessary only a positioning thrust bearing, and results in less bearing friction losses.

4. Pre-rotation vanes permit greater capacity reduction (down to 10%).

5. Permanently silver-sealed condenser joints.


York Corporation, York, Pennsylvania.
Everything that man can do to create eternal peace and protection for the beloved that lie asleep... has been done at Woodlawn.

"Architect and engineer have wrought with skill... a structure that defies the centuries."

A GREAT TRIBUTE to the dignity, beauty and enduring qualities of bronze is its extensive use in the Mausoleum-Columbarium at Woodlawn Memorial Park, Colma, California.

In keeping with the air of "lasting beauty, harmony and color" so well attained, the decoration work in the mausoleum wings, and the columbarium compartments were all executed in architectural bronze.

For years, Anaconda Architectural Bronze has been selected by architects to accent the beauty of structural design. Pleasing in appearance, and easily fabricated, this stately metal, with occasional attention, will keep its appealing luster for years to come.
THE RECORD REPORTS (Continued from page 136)

chairman of the Research and Plant Study Section of the Society, who addressed the class on plant selection, and E. Warren Bowden, vice president, Walter Kidde Constructors Inc., who spoke on new construction. The course will continue for 15 weeks.

RED CROSS LUMBER

The American Red Cross reports that in 1945 it was active in 270 disasters affecting 43 states and Alaska. The amount of material required to be furnished through lumber yards for the repair of disaster-caused damage included 36,900,000 board feet of lumber, 151,000 squares wood shingles, and 150,000 sq. ft. of plywood. Approximately 16,196 pieces of residential property were destroyed and 137,439 were damaged.

With the supply of building materials remaining critically short, the Red Cross through the cooperation of the CPA gets authorization on an AAA rating for the absolutely essential materials required to repair dwellings and other residential property damaged in a disaster. It maintains on its field disaster staff trained building advisors who survey the damage to buildings and extend the priority rating to lumber dealers in the area affected by the disaster.

SCHOOL CONTRACT

Warren S. Holmes Co., Architects, of Lansing, Mich., have been elected architects for the school building program of Hammond, Ind. The contract provides for housing in new or remodeled buildings approximately 50 per cent of the primary and secondary school pupils of the city in the next five years. It includes four new elementary and two new elementary-junior high schools, two junior high and one high school additions.

NEW EXPOSITION

The Mid-American Exposition, a display of postwar commercial and home products, is scheduled for Cleveland, Ohio, from May 23 through June 2.

Sponsored by business, industrial, labor and civic groups of Cleveland, the show is intended to focus national and international attention on the industries, resources and facilities of the Cleveland region.

MEDAL AWARDED

The 1945 Lamme Medal of the American Institute of Electrical Engineers has been awarded to David C. Prince, vice president, General Engineering and Consulting Laboratory, General Electric Co., "for his distinguished work in the development of high voltage switching equipment and electronic converters."

POSTPONEMENT

Because of the uncertainty of products and delivery schedules, the Products of Tomorrow exhibition scheduled to open at the Chicago Coliseum April 27th has been indefinitely postponed.

EXHIBITION IS OFF

The "Tomorrow's Homes" exhibition scheduled for the spring of 1946 at the Newark, N. J., Museum has been cancelled because many of the prospective exhibitors were unable to participate on account of the slowness of the reconversion process.

PAMPHLET ISSUED

Chimneys and fireplaces are the subject of a new free circular issued by the Small Homes Council at the University of Illinois. It gives technical information on location and height of chimneys, types of flue linings and chimney tops, pipe connections, etc., and construction details for fireplaces.

(Continued on page 144)
HAVE you ever heard a sound system with such natural tone, such emotional quality, such "presence" that you didn't know instantly that a sound system was in action? It's pretty safe to say you never have. But now you can!

Revolutionary advances born of wartime research have resulted in a new Western Electric loudspeaker that reproduces speech and music with unsurpassed fidelity.

You'll find it hard to believe you are listening to reproduced sound rather than the original. That is why this new Western Electric loudspeaker is destined to open a new era in all fields of sound reproduction.
If your future plans call for the design or redesign of interiors, then the choice of the right carpet becomes a lively issue.

Bigelow puts expert advice and years of experience at your service. See the large selection of patterns and colors, earmarked for weaving during 1946 and 1947. Let a Bigelow contract specialist assist you to choose the right carpet for the right spaces.

You may have to wait for the carpet you want, but Bigelow can help you with your special planning requirements now.
“The proof of the pudding is in the eating”—and by the same token, the true test of any boiler is in its performance when operating.

Titusville Compact Boilers prove their steaming qualities by generating steam from a cold boiler in less than 30 minutes—proof positive of a well designed and properly proportioned boiler. Titusville Compact Boilers are destined to set new records for saving fuel—giving greater operational satisfaction and longer life. New bulletin—just off the press is yours for the asking.
Office Notes

Offices Opened, Reopened

Garrett Becker, Architect, has opened an office in Ridgefield, Conn.

Lt. Col. H. C. Belsher, Corps of Engineers, is on terminal leave from the practice of architecture at 1529 Maryland Ave., Houston 6, Texas.

Daniel C. Bryant, A.I.A., has reopened his architectural office at 509½ Water St., Port Huron, Mich.

Maj. Richard C. Lennox and Maj. Joseph C. Matthews, recently returned from service, have reestablished their architectural and engineering organization in Indianapolis under the firm name of R. C. Lennox & J. C. Matthews, Architects-Engineers. Address, 424 Postal Station Bldg., 352 S. Illinois St., Indianapolis 4, Ind.

Maxwell Levinson is now practicing as consulting architect and industrial designer, with offices at 210 Fifth Ave., New York 10, N. Y.

WHY DRAVO HEATERS
SAVE EVEN MORE IN THE SPRING AND FALL

Because each heater is a self-contained heat producing unit operating on a direct heat transfer through a single thickness of metal, these heaters can be started up and shut down within a few minutes time. That means there is no standby loss in the Spring and Fall when heat requirements frequently exist for only an hour or so each day. The Dravo heater is so flexible in its operation it can be made to follow the temperature curve without standby loss.

There are many other reasons why these heaters are ideal for large scale space heating. They are shipped complete from the factory with the refractory lining in place, need only to be connected to the fuel line to be ready for operation. They are highly portable and can be moved from plant to plant and spot to spot to meet changing requirements. Efficiencies are high, running 80 to 85%. Maintenance is negligible. No specialized attendance is needed. For the full story of their design and efficiency ask for Bulletin 509-A. Address Dravo Corporation, Hester Department, 300 Penn Avenue, Pittsburgh 22, Pa.

A. C. Lyras, Architect, has opened offices at 28 W. 44th St., New York, N. Y.

John W. Maloney, A.I.A., has opened an office at 654 Central Bldg., Seattle 4, Wash.

Richard S. McCaffery, Jr., during the war a member of the U. S. Mission for Economic Affairs in London, has resumed his architectural practice with offices at 139 E. 57th St., New York City, and 76 Mamaroneck Ave., White Plains, N. Y.

Bryan W. Nolen, A.I.A., announces his return from military service and the reopening of his office in the Key Bldg., Oklahoma City, Okla.

Rudolph L. Novak, Architect, has reopened his offices at 713 Main Ave., Clifton, N. J.

Alfred Browning Parker, A.I.A., has opened offices in Miami, Fla.

Daniel Perry, A.I.A., has reopened his office at 1213 Main St., Port Jefferson, N. Y.

Archie Protopapas, A.I.A., has resumed his architectural practice in new offices at 441 Lexington Ave., New York 17, N. Y.


Darcey T. Tatsum, Jr., Architect, has opened an office in the Frank Nelson Bldg., Birmingham, Ala.

Anthony Thormin, A.I.A., has resumed his architectural practice with offices at 672 S. Lafayette Park Pl., Los Angeles 5, Calif.

Joseph Watterson, A.I.A., has resumed the practice of architecture with offices in the Dade Bros. Bldg., Old Country Rd., Mineola, L. I., N. Y.

Harold G. Wilson, Architect, has opened an office at 125 Coulter Ave., Ardmore, Penn.

Nicholas S. Zajack, A.I.A., has opened offices in the Hippodrome Bldg., 720 Euclid Ave., Cleveland 14, Ohio.

New Addresses

The following new addresses have been announced:

Clay Sewer Pipe Assn., Inc., Suite 2606, 26 Court St., Borough Hall District, Brooklyn 2, N. Y.

S. J. Glaberson, Architect, 14 E. 39th St., New York, N. Y.


George Nemeny, Architect, 14 E. 39th St., New York, N. Y.

Reinhard & Hofmeister, 145 E. 32nd St., New York 16, N. Y.

New Firms

Benedict M. Ade and Conway L. Todd have announced the formation of a partnership for the general practice of architecture under the firm name of Ade and

(Continued on page 148)
These three Balsam-Wool Data Sheets—dealing with problems on condensation—show the type of special information which these sheets make available to you. The entire series of thirty-two sheets covers a wide variety of insulation application problems—provides authoritative information you’ll want for your file. Send today for the complete series of Balsam-Wool Data Sheets—yours without obligation. Just mail the coupon!

W O O D  C O N V E R S I O N  C O M P A N Y
Dept. 115-4, First National Bank Building
St. Paul 1, Minnesota

Please send me set of Application Data Sheets.

NAME ________________________________

ADDRESS ___________________________________

CITY ___________________________ STATE ________

WOOD CONVERSION COMPANY

BALSAM-WOOL • Products of Weyerhaeuser • NU-WOOD

APRIL 1946
TODAY... a beautiful home

TOMORROW...?

LUMITE ELIMINATES ALL SCREEN TROUBLES

- With a new house, one of the first things to show wear is the screens... but NOT if they're made of LUMITE!

LUMITE® NEVER STAINS! Nothing ages a house faster than ugly, stained sills and sidewalls. But LUMITE never can stain! Never needs painting, either... and cleans easily with just a damp cloth.

NO BULGE, DENT OR SAG! Of course LUMITE "gives" under pressure... but snaps right back to its original flatness in a matter of seconds... without a single trace of bulge!

CAN'T RUST OR CORRODE! Amazing LUMITE cannot be affected by any natural cause... not even year-after-year exposure to the worst enemies of the average screen: salt spray and industrial smoke! Nor do extreme heat and cold affect LUMITE at all... truly an all-weather screen!

When planning your homes, specify LUMITE today... for the sake of many years of "tomorrows." Write for AIA-35-P descriptive folder and sample!

*Lumite of Saran, Dow Chemical Co. product.

Lumite PLASTIC INSECT SCREEN

CHICOPEE MANUFACTURING CORPORATION—LUMITE DIVISION
47 WORTH STREET, NEW YORK 13, N. Y

World's largest makers of Plastic Screen Cloth

AND FOR TOMORROW: Look for wonders with Lumite indestructible fabrics for home and car upholstery, luggage, footwear, handbags!
Silbraz is the name when you want leakproof copper or brass pipe runs that remain permanent for years; that contribute to increased prestige ... and business. Performance-proved in thousands of installations, here are 5 major reasons more and more owners are demanding safe, dependable Silbraz installations in all types of buildings.

1. Vibration Proof

—the physical characteristics and design of the Silbraz joint are such that the joint will withstand vibration under load better than even the pipe or the fitting.

2. Fire

—the silver brazing alloy used in Silbraz fittings has a melting point of 1300°F. In a fire, the pipe will fail—under load—long before the joints and fittings are affected.

3. Corrosion Resistant

—in conveying many commercial gases or liquids, Silbraz joints have been found to stand up as well as the pipe itself and frequently better. This is due to their high percentage of copper and silver.

4. "One-Piece" Line

—the brazing alloy incorporated in each Silbraz port, flows out when heated with the oxyacetylene flame, and makes a tight, leakproof joint—stronger than the pipe itself.

5. Economical

—Silbraz joints require neither maintenance nor repairs, and are good for a service span equal to or greater than the life of the pipe.

Silbraz fittings and valves are produced by leading manufacturers. You can specify them with assurance for plumbing and heating lines, fuel, gas and process lines—in better-class homes, apartment houses, public, commercial and mercantile buildings—wherever you want copper or brass pipe runs that can "stand-up" under all conditions and give your clients complete satisfaction.

Registered U. S. Pat. Off.

Air Reduction
General Offices: 60 East 42nd Street, New York 17, N. Y.
In Texas: Magnolia Airco Gas Products Co. • General Offices: Houston 1, Texas
Offices in Principal Cities
Represented Internationally by Airco Export Corporation
THE RECORD REPORTS (Continued from page 144)

Todd, Architects, with offices in the Sibley Tower Bldg., 25 North St., Rochester 4, N. Y.

C. Dale Badgeley and Charles Akers Bradbury have formed a partnership for the practice of architecture under the name of Badgeley & Bradbury, with offices at 204 E. 59th St., New York 16.

Daniel H. Bodin, A.I.A., announces a partnership with Willard N. Lamberson, A.I.A., who has been associated with him for 10 years. The new firm, of which Clarence A. Smith II, A.I.A., is an associate member, will practice architecture under the name of Bodin & Lamberson, Architects, with offices at 44½ Marietta St., Atlanta, Ga.

John Justin Carr and Phelps Cunningham have formed a partnership for the practice of architecture under the firm name of Carr and Cunningham, Architects, with offices at 1421 Schofield Bldg., 9th and Euclid, Cleveland 15, Ohio.

John Walter Cross and his son, H. Page Cross, have announced the opening of the firm of Cross & Son, Architects, with offices at 730 Fifth Ave., New York 19, N. Y.

Eearl S. Draper, who for five years served as deputy commissioner of the FHA, has accepted the presidency of Housing Trends Inc., a new firm providing an architectural and engineering service for builders and lending institutions in the small house field. Associated with Mr. Draper are Kenneth Duncan, formerly treasurer and general manager of the Harmon National Realty Organization, and Randolph Evans and W. Ottis Chapman, consulting architects.

Mildred Budd Mooney and M. Munn Pattison, consulting architect, announce the opening of the Mooney Miniatures studio for the constructing of accurate architectural scale models. Address, Box 87, Rahway, N. J.


Wm. L. Steele, F.A.I.A., J. D. Sandham, A.I.A., and Wm. L. Steele, Jr., have announced the formation of the firm of Steele, Sandham & Steele, Architects, with offices in the Electric Bldg., Omaha, Neb. B. P. Daxon, engineer, Kenneth B. Clark and Lawrence A. Enersen are associates in the new firm.

Rollin Wolf and Willard S. Hahn announce the forming of a partnership under the firm name of Wolf & Hahn, Registered Architects, with offices at 459 Hamilton St., Allentown, Penn.

Firm Changes

Norman Bel Geddes & Co., New York, announces the retaining of Joseph F. Kelley as marine consultant.

R. W. Hebard & Co., Inc., Engineers, Consultants and Constructors, 30 Broad St., New York, announces the election of Donald H. McNeal as vice president and director.

H. W. Lochner & Co., Engineers and Architects, 160 N. LaSalle St., Chicago 1, Ill., announces the association of Charles Klopp, architect, and the expansion of the practice of the firm to include complete architectural services.

Foster D. Smell, Inc., Consulting Chemists and Engineers, 305 Washington St., Brooklyn 1, N. Y., announces that Robert Schmeidler has joined the staff as business manager.

William Wilson Wurster and Theodore C. Bernardi announce the addition of Dom Emmons as a member of the firm. Mr. Emmons, recently in the United States Naval Reserve, has been associated with the office since 1938. The new firm name is to be Wurster, Bernardi and Emmons, Architects. Address, 402 Jackson St., San Francisco 11, Calif.
Announcing... an entirely NEW kind of window
CURTIS SELF-FITTING SILENTITE!

SELF-FITTING—For Greater Weather-Tightness
The new Silentite has "floating" weather-stripping. Illustration shows wood sliding bars which are seated on full-length bronze weather-strips and press tightly against moving parts of window. 20% less air infiltration than old Silentite.

SELF-FITTING—For Easier Operation
The "floating" weather-stripping forms a wood-to-wood contact with the sash. The new Silentite is easy to open and close at the outset, and continues to operate smoothly with use. And remember, Silentite has no weights, pulleys, or cords to get out of order.

Better windows—more weather-tight—easier to operate—easier to install! That's what home-building America wants today. And today, Curtis answers that need with a startling new window development—the self-fitting Silentite! Here's a window that represents as great an advance in window design as the original Silentite! Read about some of the new Silentite features shown on this page—then you'll know why Curtis again brings America more window value for its money!
Radiant heating in any home, large or small, is the ideal heat for solid comfort and the BASE-RAY® Radiant Baseboard offers radiant heating at its best... and simplest... adaptable to rooms of any size. Base-Ray is 7" high and 1 3/4" thick... assemblies start at a minimum of 24" and can be furnished in multiples of 12"... and can be shipped in lengths up to 8'. Additional sections may easily be added on the job to suit any requirement. BASE-RAY is simple to install... any heating contractor can do a good job.

To give your plans the truly modern touch, incorporate BASE-RAY. You achieve smartness, beauty, comfort and heating efficiency in one stroke. And this is important: Installation in new or old homes requires no structural changes, and specifications are simple. BASE-RAY cast-iron baseboards are installed on outside walls in place of the regular wood baseboard. Painted to match, they are practically indistinguishable from balance of trim. For any type hot water, 2-pipe steam or vapor system.

A well designed house, large or small, deserves BASE-RAY radiant heating. Get all the facts. Mail the coupon today.
HARD Michigan Maple faces over RODDISCRAFT cores and crossbanding welded into a solid, waterproof unit, under heat and pressure, by the RODDISCRAFT process, creates a door that will stand up under heavy traffic and harsh treatment.

In contrast to the delicate color and warmth of Michigan Maple, is its ingrained hardness—resistance to chipping and scuffing—which makes it an ideal wood for facing doors used in public buildings.

Roddis offers the pick of Michigan Maple from its 30,000-acre northern Michigan tract—selected and cut by Roddis woodsmen—matched and finished by Roddis craftsmen. Specify RODDISCRAFT Doors in Michigan Maple to get long life and lasting beauty. Available in selected white, or unselected for painting. Consult your local millwork and fixture manufacturers—and lumber dealers.
"I LOOK FOR **BEAUTY** AND **QUALITY** IN PLUMBING.
CRANE EQUIPMENT GIVES ME BOTH."

"JUST THINK-REAL **CRANE PLUMBING**
AT A PRICE TO FIT OUR BUDGET."

Whether you are planning homes to meet today's immediate needs or are working on plans for future construction, the new Crane line offers you many advantages.

- The whole line has been freshly styled with fixtures grouped and matched to assure greater harmony.
- Newly developed engineering features mean greater convenience, better operation.
- The breadth of the line permits flexibility in your planning—fixtures designed to suit every taste.
- Throughout, the line is high in quality—backed by Crane reputation for producing the finest in plumbing fixtures.
- And above all, Crane is in production on equipment specifically designed and priced to suit today's building needs.

Your Plumbing Contractor or Crane Branch will gladly work with you on your plans and do everything possible to help provide sanitary equipment when you need it.
New full-size details of both lines of Pittco Metal

Here's a planning tool you’re sure to find useful in the building and renovating days ahead. It’s an A.I.A. file containing full-size details of the varied moldings, sashes, sills, jambs, heads, bars, bands, transom bars, and awning bars in the Pittco De Luxe and Pittco Premier Store Front Metal lines. These drawings will bring your files up to date. They show how the pieces should be installed with various types of building materials and indicate some of the many attractive combinations in which they can be assembled. You can easily trace the shapes onto your own drawings.

Inquiries from architects and clients indicate a great interest in both lines of Pittco Metal, not only for use in store fronts, but also in store interiors, hotel and theater lobbies and corridors, laboratories—wherever smart-looking metal trim is desired.

Whether you are using Pittco De Luxe—the distinctive metal for high quality installations—or Pittco Premier—the lightweight, moderately priced line of Pittco Metal, you will want the portfolio of drawings shown above. To get it, return the coupon below. There is no obligation.

PITTCO STORE FRONT METAL

“PITTSBURGH” stands for Quality Glass and Paint

PITTSBURGH PLATE GLASS COMPANY
regarded as somewhat flexible, for he recognized the fact that in certain high-cost areas it would be impossible to construct an adequate house for that amount. It has not yet been decided whether there will be separate priority ratings for materials used in the $6,000 and $10,000 house groups.

In order to have effective control, he felt that price ceilings must be set on the sale of both new and old houses to prevent speculation and spiraling inflation.

However, on old houses, there would be no attempt to predetermine a ceiling, and the first freely negotiated sale after the enactment of the plan would establish selling price thereafter.

**Non-Veterans May Buy**

Not all new houses would be allocated to veterans, he stated, for in cases where definite hardship could be demonstrated by others, they also would be given an opportunity to buy.

**Work May Continue**

Furthermore, the Expediter said that houses already under construction in higher price ranges would be permitted to go forward, materials being allotted for this purpose probably with a lower priority, while other houses under construction, whose cost would come within the range covered by the plan, would go forward on the same basis as new projects. In cases where houses falling within the price range covered by the plan were not being erected for occupancy by a specific individual, he felt that preference should be given to veterans for their purchase.

**Some Non-Residential Construction Allowed**

It would be impossible, Mr. Wyatt declared, to devote all construction effort exclusively to home building, for there would be plants whose construction would be essential to the securing of an adequate supply of other materials, as well as schools, hospitals and other services for newly-established or expanded communities. Still, he emphasized that any construction that could be deferred without imposing undue hardship must wait until housing needs had been alleviated.

**Labor Will Cooperate**

Just as he expects manufacturers and builders to produce, he expects labor to produce, and Mr. Wyatt said that labor unions had promised their support. Further, to encourage veterans and others into apprentice training, the unions have agreed to raise the age limit for such training; to allow veterans credit toward completion of apprenticeship for periods in the service during which they were engaged in similar trades; and to raise the level of pay, with increasing rates as skill improves. In addition, he stated that, as an added inducement, the Veterans' Administration would regard an apprentice period as education to which the G. I. Bill of Rights would properly apply, and that, hence, trainees would be entitled to allowances while also receiving apprentice pay. Finally, he said that in each community programs would be organized to set up committees composed of all groups interested, in order to act on local labor problems as they arose.

**Wyatt's Powers Broad**

As Expediter, Mr. Wyatt has the authority to direct other government agencies, the OPA, CPA, and FHA, and to coordinate their operations. He hopes to get specialists in all fields of production to assist him in correcting any difficulties encountered, and will also actively promote a study of building code revisions throughout the country to prevent them from occurring again.

(Continued on page 156)
Different Toilet Room Environments

are obtainable with

Sanymetal "PORCENA"
(Porcelain on Steel)

TOILET COMPARTMENTS

GREAT STRIDES have been achieved in the development of toilet room environments in keeping with other environmental treatments of a building. Toilet compartments usually dominate a toilet room, influencing the toilet room environment. Sanymetal "Porcena" (porcelain on steel) Toilet Compartments elevate the toilet room environment into harmony with other environments of a building. These toilet compartments are fabricated of the ageless and fadeless material, porcelain on steel, which makes a glass-hard stainless material that always looks new, does not absorb odors, is moisture and rust proof and resists the corroding nature of ordinary acids. The glistening porcelain finish discourages defacement and can be wiped clean as easily as any glass smooth surface.

Sanymetal "Porcena" Toilet Compartments embody the results of over 32 years of specialized skill and experience in making over 70,000 toilet compartment installations. Ask the Sanymetal Representative in your vicinity (see "Partitions" in your phone book for local representative) for further information about planning suitable toilet room environments for modern school, industrial, and institutional types of buildings. Refer to Sanymetal Catalog 19B-5 in Sweet's Architectural File for 1945, or write for file copy of Catalog 83.

THE SANymetal PRODUCTS COMPANY, INC.
1689 URBANA ROAD
CLEVELAND 12, OHIO

Sanymetal Porcena Academy Type Toilet Compartments provide a certain distinctiveness. This type of partition is the only one in which all the dignity and distinctiveness of standard flush type construction, unmarred by posts, is appropriately combined with the headrail.

Sanymetal Academy Type Shower Stall and Dressing Room Compartments provide the utmost in sanitation for tourist camps, gymnasiums, clubs, Y. M. C. A.'s, etc.
mit taking maximum advantage of technological improvements and new materials.

N. A. H. B. S t a t e s  P o l i c y

The Association adopted a statement of policy approving the goal of achieving maximum production of housing for veterans, and promising cooperation to attain that aim. However, it was emphasized that support of the veterans’ program must in no way be construed as an endorsement of the Wagner-Ellender-Taft Bill. A further reservation was made, in that it was felt that no guarantee of markets to producers of low-cost houses was required, and that production of prefabricated houses and parts should be confined to those manufacturers who give acceptable evidence of ready marketability. The association recommended that price requirements be flexibly administered to allow maximum volume construction everywhere, and approved reasonable modifications of building codes to permit economies compatible with sound construction. In addition, the need for a determination of selling price by FHA, flexible enough so that veterans would not be forced into make-shift housing, was stressed. Further price controls were considered unnecessary. The Association urged that community determination of need be the basis of the program, and that in its execution greatest possible local community participation be obtained.

F o r u m  T a c k l e s L a n d  U s e

1. Smaller Plot Size Result of Wyatt Plan. The forum on Land Planning developed the fact that, in spite of the tendency in home design toward a one-story, ranch-type house with great emphasis on outdoor living, higher building costs now prevailing will limit the extension of this development. If the Wyatt plan favoring low-cost housing becomes effective, plans will have to be compact, and the two-story house will continue to be the predominant type.

2. Reducing Land Cost by Increasing Block Length. It was felt that in new developments land costs might be kept low by the reduction of the ratio of street area to total ground area through the use of block lengths up to 1,500 ft. In such cases it would still be possible to allot sufficient ground space for the construction of a less closely integrated house. Naturally, it was emphasized that where such long blocks were used the flow lines of the streets must be with the traffic toward whatever are the most important areas, shopping centers, etc., in the vicinity. It was also stated that intermediate footpaths in these longer blocks would not be required, and that they had, in general, proved unsatisfactory.

3. Parks and Playgrounds. In discussing the establishment of parks and playgrounds as part of developments, it was pointed out that parks should not be so small as to be ineffectual in accomplishing the purpose for which intended, and that after they had been laid out and equipped, the most satisfactory way of arranging for their maintenance was to deed them to the local park commissions. The sizes recommended for the three general types of recreation areas were: about an acre for the total lot, three acres for the neighborhood playground, and 20 to 25 acres for the athletic field.

A d e q u a t e  S e r v i c e  U r g e d

One probable effect of the Wyatt plan limiting cost of housing construction permitted will be that people who could readily afford considerably greater expenditures will be restricted to the construction of the minimum house compatible with their mode of living. In such houses maximum emphasis will be placed

(Continued on page 158)
RECESSED CABINETS

Important factors in planning the modern hospital—

Specify Scanlan-Morris

Typical of the trend in the planning of modern hospitals are these photographs of Scanlan-Morris recessed cabinets built into St. Nicholas Hospital, Sheboygan, and St. Alphonsus Hospital, Port Washington, Wis. In addition to the cabinets shown, other Scanlan-Morris cabinets in these hospitals are:

1. Recessed combination cabinet for storage and for warming of solutions and blankets—in main corridor of maternity department near Central Service Room and delivery rooms.
2. Recessed supply cabinets in unsterile work room, Central Service Department, surgical floor.
3. Recessed supply cabinet in surgical corridor.
4. Recessed cabinets in splint room, surgical floor—three equipped with swinging type harness hooks for splints and fracture equipment; others with metal shelves and plaster barrel compartments.
5. Recessed cabinets, counter type, in unsterile work room of Central Service Department—stainless steel counter tops.
6. Counter type cabinets for soiled utensils, equipped with double sink—in maternity department.

Scanlan-Morris recessed cabinets, each cabinet custom built from plans and specifications covering the individual requirements of the hospital, are installed in many leading hospitals. The cabinet bodies are made of 20 gauge furniture steel. All corners are made with double lapped and sweated seams, insuring dust-proof construction. Frames are flat steel, electrically welded to insure maximum strength and rigidity. The cabinets may be finished in any color to harmonize with the color of walls and other equipment. Fittings are finished in nickel plate or chromium plate, as specified.

Years of designing and manufacturing experience and contact with surgeons, hospital superintendents, engineers and architects, qualify our Technical Sales Service Department to give valuable assistance and authentic guidance in hospital planning. Suggested layouts supplied without obligation.

Ohio Chemical
MANUFACTURERS OF MEDICAL APPARATUS, GAS AND SUPPLIES FOR THE PROFESSION, HOSPITALS AND RESEARCH LABORATORIES

GENERAL OFFICES · 60 EAST 42nd STREET, NEW YORK 17, N.Y.

APRIL 1946
on convenience in the home erected, and the intent will be to expand the facilities by subsequent additions as soon as restrictions are removed. Water and electric lines of proper size to accommodate all possible future requirements add but little to the cost if provided initially; later replacement for lines which have been outgrown may be extremely difficult and excessively costly. Electrical manufacturers pointed out that, when loads outstrip the capacity of the wiring system, operating efficiency decreases, due to voltage loss. Manufacturers of plumbing supplies likewise urged that street and yard pipes of adequate size be provided, and stressed the fact that the effectiveness of the supply lines varies not only with the total number of fixtures served, but also with the length of the interior service lines. Even though no major addition may be contemplated, it would be advisable to consider possible future load caused by the addition of air conditioning equipment, automatic washing machines, extra flush valve toilets, so that these may be used efficiently without reducing to a trickle flow of water in other fixtures simultaneously used.

How Secure Materials?

At the meeting on providing materials Commodore John D. Small, Administrator of CPA, asserted that every possible effort must be made to find substitute materials for commodities that were scarce or unobtainable, and promised that the board would do its utmost to secure an expanded supply of materials where shortages existed, through priorities, higher prices and wage relief.

Raymond Foley, Commissioner of FHA, promised that credit would be liberalized, and that everything possible would be done to eliminate unnecessary costs and restrictive requirements.

Representatives of various industries expressed the belief that, although they had practically no stocks of finished materials presently on hand, they had adequate productive capacity to meet all requirements if various forces that had been operating adversely in recent months were to be removed. In various fields price adjustments were considered necessary, and Norton Long, Assistant to the Administrator of OPA, stated that where study indicated the desirability of such price adjustments speedy action would be taken to get relief.

Whence Enough Labor?

At no time during the '20's was there a shortage of qualified labor, said William Guinan, Detroit builder, nor was the actual capacity of the building industry tested during that period, because construction was carried on to satisfy the market that existed, with no fixed production goal. While housing costs during the period from 1923 to 1929 increased as a result of inflated land costs and financing charges, actual building costs had steadily declined in the face of increasing wages. A stabilized labor force receiving a high rate of pay, he commented, was to the interest of the building industry, but a highly effective production was necessary, inasmuch as the annual income of less than $3,000, received by the majority of the families for whom housing was intended, was inferior to the rate of pay of the skilled mechanics producing the housing.

William Patterson, Director of the Apprentice Training Division of the Department of Labor, reported that machinery had been set in motion, with the cooperation of ten of the most important unions, for apprentice training programs. An estimated 980,000 trained building workers would be required to accomplish the program envisaged by the Wyatt
Recognizing that change is inevitable, Snead Mobilwalls were selected as standard equipment for the offices and factory of the Buffalo plant of Curtiss-Wright Corp. by the architects, Albert Kahn, Associated Architects and Engineers. The extreme flexibility and mobility of Snead Mobilwalls has permitted many changes to be made overnight without interfering with production. All radiator covers, wall linings, and partition walls are Snead Type "SF". Snead Mobilwalls have expedited greatly the reconversion of many plants. With Mobilwalls change is simple, quick, and inexpensive. All parts are reusable without waste. No dirt, muss or paint. Get details. Write, wire or phone.

SNEAD & Company . . . . . . . . FOUNDED 1849
Designers, manufacturers and erectors of library bookstacks and steel partitions

Sales Office: 96 Pine Street, JERSEY CITY 4, N. J. Main Office and Plant: ORANGE, VA.
The thief in your Heating System

Overheating? Open windows? Wasting costly fuel on mild days? Discovering higher fuel bills? ... There’s a thief in your heating system—Faulty Control!

Correct this needless expense and discomfort. Modernization with the Webster Moderator System and Automatic Controls will assure correct steam delivery to each radiator at all times. It is automatically "Controlled-by-the-Weather" to agree with exposure and outside weather conditions.

In the Webster Moderator System there are just four control elements: an Outdoor Thermostat, a Main Steam Control Valve, a Manual Variator and a Pressure Control Cabinet ... assuring the highest expression of comfort and economy in modern steam heating.

More Heat with Less Fuel in America (many less than ten years old) can get up to 33% more heat out of the fuel consumed! ... If you are planning on a new building or on modernizing an existing building, write today for "Performance facts"—a book of case studies, before and after figures, on 268 Webster Steam Heating installations. Address Department AR-4.


If Fence is one of Your Problems

SEND FOR THIS HELPFUL BOOK
FOR A.I.A.
FILE 14-K

"ANCHOR PROTECTIVE FENCES" is packed with information that will help you in specifying fence for all kinds of installations. It’s both a catalog and a specification manual ... illustrating many types and uses of Anchor Chain Link Fence ... picturing many prominent industrial and institutional set-ups ... containing detailed structural diagrams and specification tables.

The four exclusive ANCHOR features are detailed in drawings and photographs: Drip-Driven Anchor, which hold the fence permanently erect and in line in any weather; Square Frame Gates, amazingly free from warping and sagging; Square Terminal Posts and U-Bar Line Posts, which increase strength and durability.

This informative book is yours for the asking. Just write for your free copy to: Anchor Post Fence Co., 6600 Eastern Ave., Baltimore 24, Maryland.

HOME BUILDERS

1. Radiant Heating Trends, Methods and Equipment. The trend in heating of all types of buildings is toward a continuous flow of heat at lower temperatures than have prevailed in the intermittent heating employed in the past. John Hayne of Minneapolis-Honeywell said at a technical panel discussion. Improved methods of installation and improved types of equipment, he reported, might reduce the cost of radiant heating to a level comparable with that of conventional heating. However, where outside temperatures drop to 0°F., floor panel heating (in slab construction) would require heating the floor to the uncomfortable level of 85° or higher. Bearing him out, Carl Boester commented that research at Purdue indicated the ceiling to be the best location for radiant heating, the walls next best. Experiments are now being conducted at Purdue in four house installations with radiant heating respectively in the ceiling, inside walls, exterior walls and floors to determine the relative costs and comfort.

2. Extended Use of Steel in Home Building. Much study is being given to the extension of the use of steel in housing, according to Carl Block of Carnegie Illinois Steel. He predicted that one of the first results of experiments would be mass production of lightweight steel doors and door trim which would eliminate warping and binding.

3. Prefabricated Houses. Harry J. Steidle, Manager of the Prefabricated Home Manufacturers Institute, reported that from 30 to 40 per cent of all war housing had been prefabricated. It was also brought out that there was not a single instance of a union dispute over the erection of a prefabricated house. He

(Continued on page 162)
ITS

SIMPLICITY

is your assurance of

EFFICIENCY

Illustrated
in the open
position.

DELANY

VALVE

SIMPLIFIED

OPERATING

PARTS

Everyone Strives
for

SIMPLICITY

We have achieved
this end.

SIMPLICITY
begets
LOW-COST
UPKEEP

SEND FOR
BOOKLET
"E"

DELANY FLUSH
VALVE equipped with No. 50
DELANY VACUUM BREAKER

SINCE 1879

Coyne & Delany Co.

BROOKLYN

N.Y.

APRIL 1946
HOME BUILDERS

(Continued from page 160)

emphasized the fact that the interest of the prefabricator was not counter to the methods and principles of the average on-the-site builder, and that prefabricated houses would still require local management and labor for completion.

Materials Draw Crowds

The numbers of manufacturers who participated at considerable expense in the exposition, and the swarms of visitors who assiduously studied the exhibits, were a measure of the keen desire on the part of the former to acquaint the builders with their products, and on the part of the latter to familiarize themselves with any new developments and improvements that had taken place during the war years.

Utility Core Popular

The product which most nearly approached the kind of improved engineering technique that it had been hoped might appear in profusion at this first postwar exposition by manufacturers was the Ingersoll Utility Unit. Although the unit has received considerable publicity in recent months, this was the first opportunity most of the builders had actually to see it. The exhibit attracted the most attention and the greatest amount of comment of any single display at the show. In the main exhibition hall at the Stevens a scale model of the unit was to be seen, together with drawings showing typical installations. At the nearby Congress Hotel additional space had been taken to accommodate a full-scale unit and models of the twelve houses, designed by prominent architects to show the adaptability of the unit to various plans, which the Ingersoll Steel Division of Borg-Warner Corp. is presently (Continued on page 164)

MILLS

BOILERS

take the lead!

For years H. B. SMITH "MILLS" boilers have been acknowledged as the leaders in their field. Now, more and more engineers are coming to realize the reasons why these units are uniquely suited to installations where top performance with oil, gas or stoker is a No. 1 requirement.

Here are just a few "Mills" exclusive features. Think them over carefully before selecting a boiler for that important job you are figuring now.

- WATER TUBE construction promotes efficient water circulation, fast steaming.
- MORE prime heating surface than any other boiler of comparable physical dimensions.
- MADE of rugged cast iron for long service, low maintenance.
- HEADER TYPE CONSTRUCTION minimizes possibility of mid-season breakdown.
- CONVERTIBLE from one fuel to another both easily and inexpensively.

H.B. Smith
CAST-IRON BOILERS

Write for free catalogue
THE H. B. SMITH Co., INC.
WESTFIELD, MASS.
Offices and Sales Representatives in Principal Cities
LIKE THE IRON

Electrical Raceways have gone modern, too!

No threads to cut... no lines to turn... when you use modern ELECTRUNIT EMT. (Electrical Metallic Tubing)—the lightweight, easy-to-install raceway that keeps job schedules on time. This simple compression-type fitting is quickly and easily tightened.

ELECTRUNIT E.M.T.—the Streamlined Raceway Combines Convenience and Light Weight with Safety

Convenience... light weight... safety... these are three important reasons why more and more electrical contractors prefer to use Republic ELECTRUNIT E.M.T. Consider these facts:

CONVENIENCE

ELECTRUNIT E.M.T. is threadless. Hence it eliminates tedious thread-cutting. Two simple compression-type fittings—easily tightened without turning the tubing—make strong, watertight joints that will not work loose. Inch-Marking—an exclusive ELECTRUNIT development, consisting of easy-to-read inch and foot marks on every length—greatly increases cutting and bending accuracy.

LIGHT WEIGHT

Because it requires no excess metal to serve as a base for thread-cutting, ELECTRUNIT E.M.T. is much lighter than ordinary threaded-type conduit. Thus, it is easier to handle—especially in cramped, hard-to-reach or overhead installations.

SAFETY

The wall thickness of ELECTRUNIT E.M.T. was not arrived at by guesswork. It was carefully and scientifically determined by Underwriters' Laboratories as being adequate to provide necessary electrical and mechanical protection throughout the system. Moreover, ELECTRUNIT E.M.T. is approved by the National Electrical Code for exposed, concealed and concrete slab construction.

Yes, consider these facts—investigate the many other advantages of ELECTRUNIT E.M.T.—and you, too, will agree that you can't beat this modern electrical raceway. For complete information, see your ELECTRUNIT 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 us for detailed information on these Republic Steel Building Products:
Pipe • Sheets • Roofing • Endura Stainless Steel
Tubular Smoothing Iron • E.M.T. • ELECTRUNIT E.M.T.
Fretz-Moore Rigid Steel Conduit • Taylor Roasting
Tams • Burger Lockers, Bins, Shelving, Kitchen
Cabinets • Tucson Steel Windows, Doors, Joists and other building products.
D oors offer positive Time-tested KINNEAR Rolling

tions of any type and size. Witness proof of

interlocking-slat steel curtain! It rolls weather, wear, and fire. Always ready

for instant use. Motor operation and

and efficient operation in

the smooth, quick, spring-counter­

push-button remote control are

of all adjoining space. Resists

clear of plant traffic. Permits full use

into a small area above the lintel,

Rolling Doors. For complete facts in

convenience and economy to KINNEAR

able for extra advantages of

this case, write today!

164

THE

1742

Factories: 1860-80 Fields Ave., Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, California
Offices and Agents in Principal Cities

KINNEAR
ROLLING DOORS

HOME BUILDERS

(Continued from page 162)

constructing at Kalamazoo, Mich. The mechanical heart of this unit is a box-
like steel frame containing a forced warm air furnace, blower, water heater, sewer
stack and vents, water lines, gas lines, electrical conduits, temperature con-
trols, circuit breaker, convenience outlets and space for a water softener. This
is delivered from the factory complete and ready to put into service as soon as
connections to service mains and sewer have been made. Wall panels for bath,
kitchen and laundry are packaged separately, as well as all other items neces-
sary for a complete assembly: cabinets, range, refrigerator, broom closet, laundry
tubs, bath tub, lavatory, toilet, medicine cabinet and the usual accessories. In-
direct lighting also is included. The simplicity and speed of installation result-
ning from such a unit are obvious.

Folding Walls Available

One of the few materials displayed at the show on which prompt delivery could
be promised was the folding curtain partition which has been receiving so much
attention in the design of presto-changeo, open-and-shut modern interiors. New-
castle Products, makers of the Modern-fold Door, stressed the fact that their
product has good sound absorbing qualities, tucks away into little space when
open, and compares favorably in price with the finished partition.

Aluminum Is Back

Products of aluminum were offered for the first time since our entry into the
war. Several manufacturers displayed overhead aluminum garage doors; alumi-
num window units with storm sash and screens reappeared, and there was also
a prefabricated aluminum house.

Insulations Numerous

As testimony to the continued growth of interest in insulation, manufacturers
offered products made of cotton, wood fiber, cork, asbestos, mica, glass and
metal foils. Experience having demonstr-
ated that in insulated houses control
of moisture condensation is highly im-
portant, copper, aluminum and asphalt-
coated moisture seals were also offered.

Air Controls Displayed

Several exhibits pointed to the fact
that air conditioning and air purification
may soon be accepted as an integral part
of home-heating installations. In the de-
sign of heating units, further simplifica-
tion had been accomplished. Unit heat-
ers were on display designed for instal-
lation in various locations; convectors
were in evidence. Manufacturers are
adopting modular standards.
TRUST TRANE FOR THE Right Design

In Heating and Air Conditioning Equipment

It pays to know your producer well—particularly the caliber and experience of his technical staff—when the successful operation of a heating or air conditioning system is at stake. Trane is essentially an organization of manufacturing engineers. They bring to the solution of any heating and air conditioning product design problem the individual talents of hundreds of technical minds plus their accumulated years of experience in these and allied fields. Wherever correct appraisal and solution of the equipment problems peculiar to any installation are vital considerations, you can depend on Trane engineering leadership for the right answer.

Such technical leadership results directly from the sound yet unique practice of engineering and producing within its own organization the elements necessary for complete heating and air conditioning installations. This results in uniformly higher quality and, what is equally important, assures that each part in the system is carefully matched to the operating characteristics of all others. Having designed and supervised the production of each component, Trane engineering is able to assist the architect, engineer and contractor select the proper equipment for the job—equipment that functions together as a balanced unit.

HOW TO DRAW ON TRANE'S EXPERIENCE TO SOLVE YOUR PROBLEMS

More than 200 engineers in Trane branch offices throughout the country comprise a field force created for the sole purpose of making available the vast fund of Trane's specialized product knowledge and experience to architects, engineers and contractors for the solution of heating and air conditioning problems.

TRANE REFRIGERATION EQUIPMENT FOR COMPLETE AIR CONDITIONING SYSTEMS

Trane Turbo-Vacuum and Reciprocating Compressors are only two representative items of the complete line of refrigeration equipment used in Trane Air Conditioning Systems. Turbo-Vacuum Compressors are completely self-contained, hermetically-sealed water chillers of exceptional efficiency. Trane Reciprocating Compressors with or without condensers provide efficient refrigeration for the smaller installations.

THE TRANE COMPANY

The House of Weather Magic

LA CROSSE - WISCONSIN

MANUFACTURING ENGINEERS OF HEATING AND AIR CONDITIONING EQUIPMENT
INSULATION
Outside

INSULATION
Inside

PLUS VAPOR CONTROL
THAT'S WHAT YOU GET WHEN YOU BUILD WITH INSULITE

Insulite Lok-Joint Lath, with asphalt barrier against the studs, retards vapor travel. And Insulite sheathing, being permeable to vapor, permits what little vapor that escapes the barrier to pass toward the outside.

Refer to Sweet's File — Architectural Section 10A/9

INSULITE

The original wood fibre structural insulating board — made exclusively from wood
For America's finest post war buildings

PERMATITE ALUMINUM WINDOWS

Selected for the new TRIPLER GENERAL HOSPITAL

PERMATITE—the window preferred by leading architects before the war—is again the outstanding choice for post war jobs.

More than 4500 PERMATITE aluminum windows are being used in the U. S. Army's new Tripler General Hospital now under construction on the island of Oahu in Hawaii. This is the largest single aluminum window contract ever placed and includes windows of every style—double hung, triple hung, casement and projected.

In its PERMATITE line, General Bronze offers specially designed windows, in either aluminum or bronze, for hospitals, schools, apartments, public and commercial buildings.

These fine windows have many unique, patented features—both in design and construction. They help assure years of dependable service and client satisfaction.

For complete information, full size details, etc., on PERMATITE windows and other General Bronze products consult Sweet's or write for catalogs.

GENERAL BRONZE CORPORATION
34-15 TENTH STREET
LONG ISLAND CITY 1, N.Y.

Architectural Metal Work · Windows · Revolving Doors

APRIL 1946
The modern, 100-bed hospital at Sylacauga, Ala., was designed in architectural concrete by Charles H. McCouley, A.I.A. of Birmingham. General contractor was Algernon Blair of Montgomery.

The main entrance of the Sylacauga Hospital is in an angle of the T-shaped building.

Solariums in the Sylacauga Hospital insure sunshine practically all day. Cantilevered canopies provide shade for southern exposure rooms.

ARCHITECTURAL CONCRETE FOR HOSPITAL BUILDINGS OFFERS FINE APPEARANCE...ECONOMY...FIRESAFETY

ARCHITECTURAL concrete fulfills every important construction requirement for modern hospitals, including sanitary cleanliness, firesafety, attractive appearance and economy. The rugged strength and durability of concrete structures keep maintenance cost at a minimum, giving many years of service at consistently low annual cost.

PORTLAND CEMENT ASSOCIATION Dept. 4-8, 33 W. Grand Ave., Chicago 10, Ill.

A national organization to improve and extend the uses of concrete ... through scientific research and engineering field work
PLANT owners all over the country have installed this cellular glass material on roofs, ceilings, tanks and processing equipment, in floors and core walls. They can tell you that PC Foamglas licks the toughest insulating jobs—for good.

Composed of millions of tiny air-filled glass cells, PC Foamglas is impervious to moisture, vapor, vermin, the fumes of most acids, many elements that cause other materials to lose insulating efficiency. It helps to maintain temperature and humidity levels permanently.

PC Foamglas is light, rigid, strong. It stays in place, does not pack down, check, warp, rot, swell, shrink, or burn. Big pieces are easily handled, quickly installed. PC Foamglas needs no repairs, maintenance or replacement during ordinary use. And the sum total of those advantages is economy. For with PC Foamglas, first cost is last cost.

We have published complete detailed information on PC Foamglas in three illustrated booklets which are of especial interest to architects. Send for your free copies today. Just check and mail the convenient coupon. You incur no obligation. Pittsburgh Corning Corporation. Room 127, 632 Duquesne Way, Pittsburgh, 22, Pennsylvania.

Also manufacturers of PC Glass Blocks

This re-roofing job includes permanent insulation with PC Foamglas. On new construction and on modernization projects on all sorts of plants, PC Foamglas Insulation has licked the toughest jobs. An impervious, inorganic, cellular material, PC Foamglas, retains its insulating value—indefinitely.

Pittsburgh Corning Corporation
Room 127, 632 Duquesne Way
Pittsburgh 22, Pa.
Please send along my free copies of the booklets I have checked. It is understood that I incur no obligation.

Roofs... Walls... Floors....

Name: _______________________

Address: _______________________

City: _______________________

State: _______________________

April 1946
FOR HEAVY STORE TRAFFIC

COME ONE... COME ALL. The more customers walk on it, the better the TERRAZZO floor in this store will like it. TERRAZZO will take all the tramping and look none the worse thereafter. And what a relief to forget floor maintenance, repairs and possible replacement.

TERRAZZO is made to order for all stores. Its unlimited possibilities for design and color combinations make it easy to use an individual distinctive store design. There's hardly anything you can't do with this modern floor to make a store attractive. It fits in perfectly with every architectural scheme.

And when you specify TERRAZZO your upkeep costs practically vanish. It is magically easy to keep clean. Initial cost is moderate and maintenance is low.

THESE 5 BENEFITS ARE YOURS WHEN YOU SPECIFY TERRAZZO
1. ECONOMY
2. COMFORT
3. CLEANLINESS
4. COLOR AND DESIGN
5. DEPENDABLE INSTALLATION

Complete Factual Story in FREE A. I. A. KIT
Architects, planners will find this handy fact filled FREE kit an important aid in providing full information about TERRAZZO installations.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION, Inc.
1420 New York Ave., N. W., Dept. A, Wash. 5, D. C.

Here's the inside story...

BENNETT
Fresh-Aire
FIREPLACE UNIT

You Face New Problems with the fireplace in the modern home

As you know, a fireplace when burning exhausts more than 200 cu. ft. of air per minute from the living quarters of a house. If tightly constructed, replacement air cannot enter from outdoors in sufficient quantity to supply the chimney draft. Result: partial vacuum, back-puffs, and smoke. If sufficient replacement air can enter, it lowers the average temperature of the entire house, cold drafts sweep the floor and automatic furnace controls are out of balance.

In sharp contrast, the Bennett Fresh-Aire Fireplace Unit draws replacement air from outdoors, through heating chambers, and circulates it into the living quarters—warm instead of cold. Result: no uneven temperatures, no interference with heat controls, and a net gain in evenly distributed warmth.

The benefits of this principle have been well proved in over 20 years experience and are especially important to you—in designing the modern, fully weather-stripped home with central heating.

There are four additional reasons why so many Bennett Fresh-Aire Fireplace Units are specified.
1. Thoroughly ventilates and "refreshes" the air.
2. Broad freedom to design the mantel... normal brick firebox sidewalls... no floor grilles.
3. Serves as a complete form for smoke-free internal proportions of throat dampers, smoke chamber and shelf, etc.
4. The small first cost is quickly offset by savings in construction and fuel.

For camps, summer and southern homes—places without furnace heating (also basement "playrooms") the Bennett Warm-Aire Fireplace Unit is recommended.

To add beauty and full protection—every fireplace should have a Bennett Flexscreen—the safety fireplace curtain.

For complete details
Send today for Bennett Fireplace Catalog—or see Sweet's

Bennett-Ireland Inc.
446 Maple Street, Norwich, N. Y.
A Necessity FOR YOUR FILES

... this new preprint of Truscon’s complete steel window and door catalog as it will appear in 1946 Sweet’s Architectural File

Gives complete details on types, sizes, specifications and installation of entire range of Truscon Steel Windows for every building need. Also complete information on Truscon Steel Doors for all industrial requirements. You need this new catalog, containing latest Metal Window Industry standards, for quick, accurate building design and construction. Simplifies your job of planning and specifying ... assures maximum economy of construction cost. Write for your free copy of the Truscon Steel Window and Industrial Door Catalog today.

TRUSCON STEEL COMPANY
YOUNGSTOWN 1, OHIO • Subsidiary of Republic Steel Corporation

Manufacturers of a Complete Line of Steel Windows and Mechanical Operators ... Steel Joists ... Metal Lath ... Steeldeck Roofs ... Reinforcing Steel ... Industrial and Hangar Steel Doors ... Bank Vault Reinforcing ... Floodlight Towers ... Bridge Floors.
Replace hot stale air with cool fresh air

Swartwout **AIRMOVER**
and Intake Louvers give you complete natural ventilation

- Get heat, smoke and fumes out of your buildings, quickly, for best working conditions, more contented employees, better production. Swartwout Ventilating Equipment supplies the needed combination of facilities to move unwanted air out through the roof ... and to let in the necessary fresh air.

  **AIRMOVER** Roof Ventilator, only 32 inches high, gives you unlimited air exhaust, according to your needs, without unsightly "top heavy" appearance on your roofs. Widely used — proved under severest conditions. For necessary replacement air, fresh from ground level, Swartwout Industrial Intake Louvers provide up to 90% clear opening — make an excellent appearance in the walls of any building.

  Modernize your ventilation as other efficiency-minded operators have done. Write for complete information on **AIRMOVERS** and Swartwout Louvers.

**THE SWARTWOUT CO.**
18639 Euclid Avenue
Cleveland 12, Ohio

---

**Almost...**
**AS quick**
**AS A**
**WINK**

**to Install**

**Grand Rapids Invizable Sash Balance**

Just three screws, quickly and easily placed will install a Grand Rapids Invizable Sash Balance. This simplicity and ease of installation is but one of the more commendable features that will prove a great factor in the great building program that lies ahead. And a factor in profits, also.

No tapes or cables or exposed tubes. Actually, six simple steps to install. No odd sizes. Amazingly durable, smooth, quiet and dependable in operation.

The saving and extra satisfaction realized on Grand Rapids Invizable installations has already been fully substantiated by the experience of scores of leading contractors.

**Send for Sash Balance Catalog**
This catalog contains complete information on sash balance sizes, directions for installing, etc. — all fully illustrated.

**Grand Rapids Pulleys**

- No. 103
  - Face plate, cone bearing type
- No. 175
  - Drive type saw tooth pulley

**Nos. 103, 175, 109 and 110 Cover 95% of all pulley requirements**

**Grand Rapids Hardware Company**

**GRAND RAPIDS • • MICHIGAN**

---

**Swartwout**

*The Airmover Line*

**EQUIPMENT FOR EFFECTIVE ECONOMICAL VENTILATION OF INDUSTRIAL BUILDINGS**

---

**172**

**ARCHITECTURAL RECORD**
Mr. and Mrs. America want YOU to give them—

and you can with MEDUSA WATERPROOFED WHITE and GRAY PORTLAND CEMENTS

—basements that are dry and will stay dry, so that they can be used for children’s playrooms, workshops or recreation rooms.

—stucco houses that will be as free as possible from cracks and disfiguring stains.

—concrete, brick, stucco and concrete block houses with interior walls free from dampness.

They are not asking too much—and you can gratify their wishes easily and at very little expense. The specification of Medusa Waterproofed Gray and White Portland Cements in mortar for masonry units...for plaster coats on interior walls...for scratch and brown coats as well as finish coats in stucco...and in fact all concrete construction...gives Mr. and Mrs. America complete immunity to damp basements, ruined stucco and damp interior walls,

for these cements repel all water at the surface. The additional cost is only a fraction of the cost entailed in correcting these troubles. These cements have been successful for 38 years.

The coupon below brings you a book on “How to Waterproof Concrete, Stucco and Masonry” and “A Guide to Finer Stucco”.

MEDUSA PORTLAND CEMENT COMPANY
1004 Midland Bldg., Dept. A, Cleveland 15, Ohio
Gentlemen: Please send me copies of the books, “How to Waterproof Concrete, Stucco and Masonry” and “A Guide to Finer Stucco”.

Name ____________________________
Address ____________________________
City ______ State __________

Also made by Medusa Products Co. of Canada, Ltd., Paris, Ont.
Keep control of the lighting in proper hands! Guard against unauthorized tampering with lights in schools, hospitals, theatres, auditoriums, hotels or any other building used by the general public.

The Lock Switches pictured here are no ordinary switches with locking device. They’re time-tested H & H Rotary Snap Switches, operated only by turning the key in a Corbin Pin Tumbler Lock.

No. 1281 is standard type, single pole, available also in double pole, 3-way and 4-way. No. 1281-WP is weatherproof, with cadmium-finish screw cap plate fitting on a weather-tight rubber mat. No. 1291 is a master lock switch, reciprocating type. After inserting key in lock, switch may be turned to right or left—ON or OFF, but key cannot be removed from switch in ON or OFF position. Write for specification data on this complete line.

HART & HEGEMAN DIVISION
ARROW-HART & HEGEMAN ELECTRIC COMPANY, HARTFORD 6, CONN., U.S.A.

Seaporcel
PORCELAIN ENAMEL

VERSATILITY

Architectural porcelain enamel is an established and accepted medium for the exterior and interior treatment of buildings. It is equally effective in new construction or in modernization of existing structures.

The flexibility of design afforded by sheet metal fabrication can fulfill the most critical requirements of aesthetic design as well as the practical demands of permanence, color-stability and ease of cleaning.

SEAPORCEL* can be executed in any color and tint and is available in standard finishes of gloss, semi-matte, “terra-cotta,” “granite” and “limestone.” It is fire-proof, corrosion and acid resistant; will not crack or craze when exposed to thermal shock and will withstand moderate mishandling.

Send for details of customary design, methods of erection and examples of work which has been completed.

*SEAPORCEL (Reg. U.S. Pat. Off.) is a ceramic coating fused into its metal base at 1550 degrees F.
It's hard to believe there's glass between the camera and the outdoors in this picture.

But there is—two panes, in fact, with a sealed-in air space between them. For this window is Thermopane—the transparent glass insulating unit.

The outdoor temperature was 19 degrees below zero when this picture was taken. The temperature differential between outdoors and indoors sometimes reaches 100 degrees or more. The clarity of the glass demonstrates how effectively Thermopane reduces the possibility of condensation. It points up the fact that when you plan large areas of glass to achieve pleasant interiors by making the most of exciting views—Thermopane is the practical answer.

Will the buildings which you are planning today be up-to-date a few years from now? A lot depends on how you use glass—and whether the window areas are effectively insulated. Write for our illustrated Thermopane book, which gives sizes, thickness of glass, insulation values and other pertinent data, before you put your designs on paper. Thermopane is also available in Canada. Write to Libbey·Owens·Ford Glass Company, 1746 Nicholas Building, Toledo 3, Ohio.
STEEL TRUSSES
by MESKER

Wherever Strength and Economy Count!

More and more of the nation's leading architects and contractors are registering preference for Mesker Steel Trusses because they have found from experience that Trusses by Mesker are correctly designed, easy to erect, economical, and fabricated by experienced workmen with the most modern machinery and equipment. Architects also prefer Mesker Trusses for their wide range of adaptability, from Mesker Free Span Trusses for the smallest light occupancy buildings—floors and roofs—to the Mesker Bowstring Trusses for any clear span needed up to 125 feet. No job is so small or so large but what you'll find the right answer with one of Mesker's steel truss designs. Complete catalogs and specifications on request. Write for your copies today.

GEO. L. MESKER STEEL CORP.
416 N. W. First St., Evansville 8, Indiana

Architects are doing interesting things with

Mo-Sai
Masonry Facing Slabs
IN REMODELING AND NEW CONSTRUCTION

Mo-Sai Architectural Concrete Slabs are 2" THIN. Cast in units of varied shapes up to 100 sq. feet. Weight: 25 lbs. per sq. foot. Color Combinations: Unlimited—through exposed aggregates of granites, quartz, and other selected vitreous bodies.

SEE OUR CATALOG IN SWEET'S OR WRITE NEAREST MO-SAI MANUFACTURER

MO-SAI ASSOCIATES
New Haven, Conn............ The Dartstone Co............. P. O. Box 606
Boston, Mass............... Cambridge Cement Stone Co..... 150 Lincoln St.
Richmond, Va................ Economy Cast Stone Co........ P. O. Box 1223
Greensburg, Pa............. Arnold Stone Co., Inc......... P. O. Box 477
Oshkosh, Wis.............. Badger Concrete Co............. 191 Marion St.
Salt Lake City, Utah...... Otto Buehner & Co.............. 640 Wilmingtan Ave.
Cleveland, O.............. The Geo. Ruckle & Sons Co........ Newburgh Sta.
A BUILDING WITHIN A BUILDING

... air conditioned with "FREON" for Safety

One of the outstanding features of the new, fully air conditioned Research Laboratory of the Firestone Tire & Rubber Company, Akron, O., is that it is actually a building within a building.

In designing the structure, Voorhees, Walker, Foley & Smith, New York architects and engineers, took another pioneering step. They were guided by the scientific need for positive control of temperature and humidity. The two-in-one theme was accomplished by arranging the Research Laboratory rooms in a prefabricated framework. This formed an inner building. Daylighted executive offices, stairs and library were built on the perimeter or outer shell of the structure.

"Freon" safe refrigerants are used exclusively for air conditioning in the 100,000-sq.-ft. structure through a unique system of design which completely exhausts all air. None of the air is re-circulated after it begins its one-way route from outside the building to the conditioning plant. From offices, the air passes through louvers in corridor doors ... travels along hallways into and through laboratory rooms to center pipe drafts, where it is expelled.

Refrigerating equipment consists of a 200-ton Worthington centrifugal compressor located in the basement of the building. Firestone engineers specified the refrigerant must be SAFE ... recommended use of "Freon" in all systems installed within the entire plant. The Avery Engineering Co., Cleveland, did the installation work.

"Freon" refrigerants are ideal for industrial, commercial and residential air conditioning systems. They are non-toxic ... non-flammable ... non-explosive and odorless. The low moisture content and other characteristics of "Freon" eliminate risk of corroding the equipment ... assure long life and satisfactory performance. Write for technical data for your files. Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington 98, Delaware.
MODERN H-H-M STEEL CABINETS

COMBINE ART WITH UTILITY

It is by seeing function and form through the master architect's eyes that H-H-M engineers have succeeded in combining the ultimate in eye appeal with the maximum of utility and protection in the design and construction of H-H-M Steel Cabinets for Hospitals, Industries, and Public Institutions. Drawing on the unlimited fund of more than a century of metalcraft leadership, the counsel of H-H-M engineers may prove a source of inspiration and of practical good on any steel-cabinet project the architect has under advisement.

IN PREPARATION: "Progress in Protection." An illustrated history of devices men have used to protect their valuables from the cave man era to the present. Limited edition. For architects, bankers, executives. Please reserve (by letter) your copy now. Gratis.

HERRING-HALL-MARVIN SAFE CO.
General Offices: Hamilton, Ohio
Branch Offices in New York, Chicago, Boston, Washington, St. Louis, Atlanta, Houston, Philadelphia, Los Angeles, ... Other Agencies All Over the World
Manufacturers of Bank Vault Equipment, Bankers' Teller Boxes, Buss and Lockers
Safe Deposit Boxes - Night Depositories - Bank and Office Safes
Builders of the United States Silver Storage Vaults — West Point Military Reservation

THE ALL-WEATHER, ALL-PURPOSE
INSULATING AND BUILDING BOARD

THAT COMES IN

BIG SHEETS

up to 8' x 14'

Here is the building material with outstanding features that mean easy handling, sound economy and speed of operation.

The big sizes—up to 8' x 14'—make it possible to avoid all unsightly batten strips and unnecessary wall joints. Simultaneously they reduce the number of handling and nailing operations.

The fact that Homasote is completely weatherproof means that it can be used for either exterior or interior finish—or for sheathing. Homasote has stood up under years of service in the coldest climates as it has in the tropics. Moisture-proof in itself, Homasote helps to keep buildings dry and free from mildew.

In one board, you have great structural strength combined with high and lasting insulating efficiency and important sound-deadening qualities.

When Homasote is used for interior finish, you have walls that are permanently crackproof, with a surface that has been pronounced ideal for either paint or wallpaper.

We invite architects and builders to write for our new fully illustrated booklet—suggesting some of the many uses for weatherproof Homasote. The book gives physical characteristics, performance charts, specification data and application instructions. Write for your copy today.

HOMASOTE COMPANY, Trenton 3, N. J.
"When it comes to the 'Heart of the House'—specify a sound SPENCER"

What feature of the modern home is more discussed, more heartily appreciated than an adequate, thrifty heat-and-hot-water system—the "heart of the house?"

It can add so much to the owner's praise of the architect, builder or heating contractor.

That's why men who "live" heating problems bank on Spencer—a great name and a great outfit to do business with. Combining precision-built efficiency and modern design, there is an economical Spencer steel boiler for every type of heat, for every fuel and for every size of building.

Write or wire for catalog and specifications of the new Spencer's. Also, let us send you the name of our nearest engineering consultant, skilled in advising on every type of heating installation. Send us a card today.

SPENCER HEATER

Division—The Aviation Corporation, Williamsport, Pa.
YOUNG DELIVERS HEAT
Where it's Wanted!

"Streamaire" Verti­flow Units; specially designed to heat rooms with high ceilings.

Horizontal "Streamaire" Units, heat large areas efficiently, most economi­cally.

- The most modern and efficient way to heat plants, stores, and other large areas, is with one or both types of "Streamaire" Unit Heaters. Thermostatic controls operate units individually or in series, providing comfortable, controlled temperatures. Young Units save floor space...are easy to install...are low in first and maintenance costs. Because "Streamaire" Units give such unprecedented satisfaction, they prevent heating-plant complaints from clients and customers. Write today for further information, without obligation.

YOUNG
HEAT TRANSFER PRODUCTS

OIL COOLERS • GAS, GASOLINE, DIESEL ENGINE COOLING RADIATORS • HEAT EXCHANGERS • INTERCOOLERS • ENGINE JACKET WATER COOLERS • EVAPORATIVE COOLERS • GAS COOLERS • UNIT HEATERS • CONVECTORS • CONDENSERS • AIR CONDITIONING UNITS • EVAPORATORS • HEATING COILS • COOLING COILS • AND A COMPLETE LINE OF AIRCRAFT HEAT TRANSFER EQUIPMENT.

YOUNG RADIATOR COMPANY
DEPT. 516-D • RACINE, WIS., U.S.A.

THE "FEAST" THAT COULDN'T BE EATEN

There's plenty of food here for wood-destroying fungi and termites to feast on—but they're doomed to die if they try.

Such wood as this, treated with "CZC," is protected from decay and termite attack. Du Pont "CZC" (Chromated Zinc Chloride) resists the development of fungous growths. In addition, "CZC"-treated wood is resistant to fire, has no objectionable odor, is clean and easy to handle, and can be painted. "CZC"-treated wood has all the characteristics of untreated wood, plus these other advantages.

Give your buildings additional long life and assurance of low maintenance costs by specifying "CZC"-treated wood. For detailed information about this wood preservative that makes wood last longer, write E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Dept., Wilmington 98, Delaware.

DU PONT CZC
Chromated Zinc Chloride

MAKES WOOD RESIST DECAY • REPEL TERMITES • RETARD FIRE

BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

ARCHITECTURAL RECORD
Will the new structures you design say "Welcome"? Will their main entrances be a permanent invitation to "come in," both for their tenants and their customers?

Whether your new buildings are "modern" or "traditional," smartly designed architectural metal work can do much to enhance their whole appearance.

There are many uses for architectural metals in every building. In addition to the entrance you can use them with great effectiveness in stairs, balustrades, grilles, windows, doors and all types of decorations, both interior and exterior.

Architectural metals offer you and your clients many outstanding features. Not only can they be fabricated to fit your own ideas of design but, in both ferrous and non-ferrous metals, they offer a wide range of materials, colors and other characteristics from which to choose.

The manufacturers and fabricators of architectural metals are anxious to work with you, to offer helpful suggestions and to be of assistance in any way they can. Consult them whenever you plan new buildings.

Architects who are interested in obtaining a copy of the new Handbook on Stairs and Railings just published by the Association are invited to contact any of the members. For a Directory containing names and addresses of Leading Fabricators write to Dept. R4.
ELLISON BALANCED DOORS

(SAFETY DOORS)

Because They Are Easy to Operate

Because They Are Furnished with Highest Quality Materials

Because They Are Complete

The ELLISON balance principle contributes to the solution of entrance door problems of architects and owners:

First, the ELLISON BALANCED DOOR is pivoted at the top and bottom so that when it is being opened the pull handle edge swings outward against the wind, and the opposite edge swings inward with the wind. The entire door, therefore, moves easily and quickly to one side of the door opening.

Second, the easy opening and quick closing of the ELLISON BALANCED DOOR permits an uninterrupted flow of traffic. This door can be opened and will close in any wind and weather condition — with a minimum of effort. The door in fully open position projects beyond the frame line 40% to 45% less than the ordinary door, saving lobby space and eliminating sidewalk obstruction.

ELLISON DOORS are self-contained units, including frames, mullions, trim, saddles, and all necessary hardware.

Send for our new booklet giving illustrations and details for various types of entrances.

Technological Institute, Northwestern University
Evanston, Ill. • Holabird & Root, Architects

ELLISON BRONZE COMPANY, INC., Jamestown, New York

WURLITZER ORGATRON

True Church Organ Tone with Important Savings in Space and Cost


*The Name That Means Music To Millions

OPPORTUNITIES AVAILABLE


ARCHITECTURAL DRAFTSMAN who has had experience in progressive architectural office. Western Architect. Give complete qualifications, experience, age, present salary and include small snapshot. Box 122, Architectural Record, 119 West 40th St., New York 18.

WANTED: Assistant Designer, general draftsmen and someone capable of drafting and preparing specifications or supervising. Foresee steady employment for experienced men. Please state background. Mauran, Russell, Crowell & Mullgardt, Architects, 1620 Chemical Bldg., St. Louis 1, Mo.


POSITION WANTED: Architectural Draftsman—Designer—Engineer desires position with firm of sound future. Nominal salary with opportunity of partnership later. 18 years experience on types work. Middle Atlantic or South preferred. Box 124, Architectural Record, 119 West 40th St., New York 18.

Three practical Joint treatments with Weldwood

A piece of sandpaper around a block is a quick and easy way to shape the panel edges for v-joints. The illustration shows panels erected over furring strips, but, if the framing is straight and dry, these are unnecessary.

In the installation of Weldwood Plywood for interior walls and ceilings, joints offer no problem. While many novel joint treatments have been developed by ingenious builders and architects, the three simple effects shown on this page fulfill most requirements. They are easy and inexpensive to make and assure trouble-free permanent walls and ceilings which home owners want today.

A new Weldwood installation manual just off the press illustrates and discusses in detail these three joint treatments and contains other valuable installation data. Sections of the manual show how Weldwood Plywood may be installed over masonry walls . . . plaster walls . . . how to use it for ceilings . . . how to handle base and ceiling details and dozens of useful hints in remodeling and new construction.

Write for your copy today.

WELDWOOD Plywood

Weldwood Plywood and Mengel Flush Doors are products of
UNITED STATES PLYWOOD CORPORATION
New York 18, N. Y.

THE MENGEL COMPANY
Incorporated
Louisville 1, Ky.


APRIL 1946
Use a Powers No. 11 Temperature Indicating Regulator when you want the advantages of an easy-to-read dial thermometer combined with a dependable self-operating regulator. The dial thermometer gives a visual check on the performance of the regulator and makes it easy to adjust for the required operating temperature. Various dials and ranges are available. Is Easy To Install—because both the thermometer and the regulator operate from the same thermal system—only 1 tapped opening is required. Write for Circular 2511.

THE POWERS REGULATOR CO.
2720 Greenview Avenue, Chicago 14, Ill.
231 East 46th Street, New York 17, New York
Offices in 47 Cities...See your phone directory.

Make 10 types of prints with Ozalid

The Job: Part of this design must be changed before production can begin.

The Ozalid Print For The Job:
OZALID TRANSPARENT CLOTH because an extremely durable "intermediate" print is desired. The obsolete lines on the print can be removed with Ozalid Corrector and the new design drawn in. The TRANSPARENT CLOTH intermediate is then used to produce the desired number of prints for the production line.

THE 10 TYPES OF OZALID PRINTS
For efficiency in routine jobs • For "impossible" jobs
1. Black-line
2. Blue-line
3. Red-line
4. Opaque cloth
5. Transblack Intermediate 10. Dryphoto
6. Sepia-line intermediate
7. Transparent cloth
8. Transparent foil
9. Chartfilm

Write for Free Samples of Ozalid's Ten Types and complete information.
OZALID Division of
General Aniline & Film Corporation • Johnson City, N.Y., U. S. A.

OZALID IN CANADA—HUGHES-OWENS CO., LTD., MONTREAL
In learning...IT'S STUDY

In ceramic glazed structural tile
..IT'S ARKETEX

ARKETEX FOR Budget Beauty

Even the budget committee will like this fine tile for the first cost is the only cost! No periodic painting or refinishing of walls is necessary with Arketex. It is not affected by steam, water, ink, or the action of acids and alkalies which would ruin the appearance of ordinary walls. The everlasting colors are protected by a finish which won't mar, scar, crack, or craze, and which requires only soap and water washing to keep its luster. Arketex is a permanent wall and finish all in one, available in enough sizes, colors, and textures to allow the architect innumerable opportunities for variety. Be sure that buildings will maintain their orderly appearance years after construction. When planning schools, hospitals, offices or factories, specify Arketex—first with the finest in ceramic glazed structural tile.

A Peacetime Promise

Arketex' continuous achievement in the ceramic glazed structural tile field assures you the finest in workmanship. Arketex...the standard of textured tile.

ARKETEX CERAMIC CORPORATION • BRAZIL, INDIANA

APRIL 1946
JAMISON VESTIBULE DOOR
Reduces refrigeration losses at busy doorways.

JAMISON-
BUILT COLD STORAGE DOORS
HAGERSTOWN, MARYLAND
BRANCHES IN PRINCIPAL CITIES

GET A CABLE SELECTION CHART
PLUS a complete listing of the principal Okonite and Hazard insulated wire and cable products. Get them in the just-off-the-press bulletin OK 1028, which gives you in only eight pages an over-all picture of a comprehensive line of products based on a specialized insulation and cable-making experience since 1878. Use it as a catalog, as a guide, as a reference. Write for your copy now. The Okonite Company, Passaic, New Jersey.

OKONITE
insulated wires and cables

Duromit
THE "BONDED" CEMENT FLOOR
FOR FLOORS THAT HAVE TO TAKE IT
Duromit is the hardest cement floor in existence. A mixture of hard mineral granules, it registers 9 points on the Mohs Scale of Hardness. Specify Duromit, with its three year Bonded Guarantee, for all places subjected to unusual abrasion, excessive moisture, or varied forms of chemical attack. Easily cleaned and highly sanitary. Duromit Floors are perfect floors for food processing, dairy and bottling plants, automotive and mechanical establishments, garages, etc.

Write for further information, or phone
Chickering 4-6782

Duromit
EMPIRE STATE BUILDING
WASHINGTON CONCRETE CO. NEW YORK N. Y.

How much fuel, energy and equipment could you save by saving conditioned air?

Converting 1000 CFM of stale, odorous air to fresh air with Dorex activated carbon Air Recovery Equipment, instead of bringing in and conditioning outdoor air, saves:

- 100,000 BTU of installed heating capacity
- 3 tons of installed refrigeration
- 1800 KW hours of current per cooling season
- 1500 gallons of fuel oil or
- 9 tons of coal per heating season

Incidental water consumption and maintenance

Per 1000 CFM

- of heated or cooled air saved

The above savings are figured for average temperate zones. Some installations have shown greater savings, some less. But in every case, Dorex Air Recovery has converted contaminated air to fresh air at a cost much below that required to replace it with an equal volume of outdoor air.

We will be glad to give you the details on actual savings in typical installations or estimate the savings on any existing or planned system. For full information call the nearest District Representative or write Dept. L-9.

W. B. CONNOR ENGINEERING CORP.
AIR DIFFUSION AIR PURIFICATION AIR RECOVERY
112 East 32nd Street New York 16, N. Y.

TEN years of "superior and exceptional service...no major breakdowns...a very small amount of money to maintain these burners in excellent working order...I would...recommend ENTERPRISE heavy-duty burners to any institution...looking for equipment that will provide them with many years of trouble-free service"! That's the record ENTERPRISE Oil Burners have set at Holy Cross College, Worcester, Mass., and at many other colleges and universities throughout the country.

Efficient low cost operation is engineered into ENTERPRISE Oil Burners for burning liquid fuels—particularly the low-cost heavy petroleum residual oils now being made available in increasing quantities and at lower cost to you.

Heavy Bunker fuels can be burned in ENTERPRISE Oil Burners with minimum equipment for your heating requirements and with positive control over wide load fluctuations.

ENTERPRISE Oil Burners are available in Manual, Semi-Automatic and Full-Automatic in combination with modulating fire control or special combinations for your specific requirements.
WHAT THE TABLES TELL YOU:
• The gallons per minute available at any distance along a pipe 1 1/4” to 2” in size, at any pressure up to 90 lbs.
• Correct pipe sizes to provide adequate water supply for residence or apartment buildings when pressure is known.
• The probable water requirements in gallons per minute of any residence building up to 10 apartments in size.
• Whether sufficient water is available for proposed remodeling of building to add new apartments or outlets.

AND ON THE OTHER SIDE:
Scientifically accurate tables for eliminating water-hammer from piping by proper selection of a WADE Air Chamber.
FREE: The Wade Wall Chart is available on request to architects, plumbers, contractors and dealers.

Well Known • Easier To Sell
PIPE SUPPORTS ACCESSORIES

Always fair in price, and always protecting the Plumbing Contractor and his Jobber with a fair profit, "F & M" products have an unmatched record for satisfactory service.

For safety and customer satisfaction look for the "F & M" trademark on every article. Send for illustrated Catalogue.

ORDER FROM YOUR JOBBER

Wade MANUFACTURING COMPANY
DRAINS AND PLUMBING SPECIALTIES
ELGIN, ILLINOIS

FEE & MASON
MANUFACTURING CO., INC.
81 BEEKMAN ST., NEW YORK 7, N.Y.
SALES OFFICES IN PRINCIPAL CITIES

FITZGIBBONS
for STEEL BOILERS
1886 - 60TH ANNIVERSARY YEAR 1946

Most Economical in the Field

There is a wealth of “know-how” to be learned in sixty years of building steel boilers. And there is a satisfying assurance that the boiler you select with that experience behind it, is the product of masters in boiler design and construction . . . Whether for the small home or the large institutional building, specify Fitzgibbons and be sure.

Fitzgibbons Boiler Company, Inc. 101 PARK AVE., NEW YORK 17, N.Y.

ORCO SAFETY TREADS AND FLOORING

Construction of standard 1/4-in. ORCO Safety Tread shown at left. Uniformly distributed abrasive grain (in nosings) and abrasive aggregate (in flat surface of tread) "locked" permanently in semi-resilient rubber base reinforced with 1/4-in. galvanized wire mesh.

ORCO Safety Treads are furnished in specified widths up to 45-in., and in lengths up to 96-in. inclusive. Standard thickness 1/8-in. ORCO Safety Flooring (Hard or Soft type) furnished in specified sizes up to 23-in. x 64-in. Thicknesses 1/8-in., 1/6-in. and 3/8-in. Standard colors for both treads and flooring: BLACK-BUFF-GRAY-BRED. Installed by soft flooring contractors. WRITE FOR COMPLETE DETAILS.

The Ohio Rubber Company
SAFETY TREAD AND FLOORING DIVISION
100 BEN HUR AVE.
WILLOUGHBY • OHIO

ARCHITECTURAL RECORD

188
You never saw a more satisfied building owner than The Snail. He likes his house so much, he takes it with him wherever he goes. It has an armored wearing surface that protects him from his natural enemies.

What keeps the snail snug and safe can keep your clients happy, too!

Over 90 years of successful roofing experience has demonstrated the sound value of the gravel or slag wearing surface of a Barrett Specification Roof:

1. It holds in place the heavy-poured (not mopped) top coat of coal-tar pitch—providing a doubly thick waterproof covering.

2. It provides protection against the sun's actinic rays which otherwise dry out the essential oils of the bitumen.

3. It protects the roof against mechanical damage, hail and wind, wear and tear.

4. It interposes a surface of fireproof rock between the building and flying embers—makes a roof that carries Fire Underwriters' Class A Rating.

The Barrett Specification* Roof, with its wearing surface of gravel or slag, provides building structures with the same measure of armored protection from their enemies—rain, hail, fire, sun, mechanical wear and tear.

Built of alternate layers of coal-tar pitch and felt, and capped with a heavy pouring of pitch to hold the gravel or slag wearing surface in place, it is the strongest, toughest, longest-lasting built-up roof made. No wonder it can be bonded against repair and maintenance expense for as long as 20 years.

Many of America's most famous buildings are Barrett Specification Roofed. You can do your clients no greater service than to recommend this roof on the buildings you design.

The Barrett Division
Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.
2800 So. Sacramento Avenue Birmingham
Chicago 23, Ill. Alabama
In Canada: The Barrett Company, Ltd.
5551 St. Hubert Street, Montreal, Que.
In the model home of Eastman Associates at Miami Beach, Florida, Hendrick grilles furnish a distinctive lead-glass effect for linen closet door panels. The grilles solved the decorative problem of open door panels, so necessary in the tropics to combat humidity and mildew.

The 194-page Hendrick Grille Handbook illustrates over 100 standard and exclusive designs. Write for your copy today.

Choose the RIGHT ERASER to avoid scuffing and marring!

A. W. FABER

offers Technical Men a wide range of Erasers, scientifically compounded in varying abrasive intensity, to give you quick, clean erasures of pencil and ink on any surface — from tracing cloth to drawing board. Ask your Stationer — and if you have a special erasing problem, ask us.

A MARK OF QUALITY

in home cellar construction

If you want the convenience and safety of an accessible cellar ... If you want a leak-proof, burglar-proof, termite-proof and permanently trouble-free cellar door which will always be a source of satisfaction to you ... buy

BILCO

COPPER STEEL

BULKHEAD DOORS

A Sound and Sensible Investment
AKS YOUR DEALER or write
BILCO MFG. CO.
164 Hallock Ave., New Haven, Conn.
SIDEWALK AND BULKHEAD DOORS • STEEL ROOF SCUTTLES
For the modern industrial plant
specify an RCA Sound System—

Modern industrial plants need engineered, built-in sound systems arranged to meet individual requirements, for better co-ordination of plant functions.

Paging facilities eliminate waste time and motion by permitting quick contact of key personnel. Sound broadcasts of announcements and special instructions provide complete and rapid plant coverage. Safety talks, work music and news broadcasts help cut production delays and employee fatigue, provide an effective boost to personnel morale. Inter-communication systems provide more efficient contacts between offices, stockrooms and production lines, inspection and shipping, plant and maintenance departments.

Any or all of these services can be provided by an RCA Sound System—engineered for top efficiency—built to suit specific needs of "matched" parts that really work together because they’re all made by RCA.

* * *

For full information consult the classified section of your telephone directory for the address of your local RCA Sound Equipment Representative—or write direct to Dept. 10-D, RCA Sound Equipment Section, Radio Corporation of America, Camden, N. J.

SOUND SYSTEMS

RADIO CORPORATION of AMERICA

ENGINEERING PRODUCTS DEPARTMENT, CAMDEN, N.J.
A "find" for the ARCHITECT! This comprehensive Color Guide (pages 9" x 15") displays 150 beautiful colors ranging from pastels to deep shades. Formulas are given on the reverse of each color sheet to show how the shade can be quickly made. Price, $5.00 delivered anywhere in the U. S. A. Write for your copy.

MONROE, LEDERER & TAUSSIG, INC.
606 N. AMERICAN STREET
PHILA. 23, PA.

Moleta FLAT OIL PAINT
THE TRULY WASHABLE FLAT PAINT

Horn Folding Bleachers and Electrically Operated Folding Partitions provide flexibility of gym layout that enables you to have two complete playing courts at the cost of one. For safety, smooth operation and dependability specify Horn equipment. Your Architect recognizes the superiority of Horn engineering.

Horn MANUFACTURING COMPANY
FORT DODGE, IOWA

Burt Free-Flow Ventilators — both gravity and fan types — have firmly established themselves as outstanding performers. Now, addition of Burt's new "K-Frame" of angle iron welded into a one-piece, rigid structure, gives larger sizes even greater strength, durability and ease of erection. New data sheets in Sweet's or write direct for copies.

THE BURT MFG. CO.
ROOF VENTILATORS • OIL FILTERS
EXHAUST HEADS
48 East South St., Akron 11, Ohio

SEND FOR CATALOGS
Burt Engineers are glad to help on plans

In the Heart of Pittsburgh's Golden Triangle ... within easy walking distance of all important office buildings, stores and theatres ... the Pittsburgher is the ideal spot to stay.

You'll enjoy the large comfortable rooms, every one with a private bath and radio ... the excellent restaurants ... and the friendly courtesy that always awaits you at the Pittsburgher

Single Rooms: $3.30 to $4.40
Double Rooms: $5.00 to $6.50

A KNOTT HOTEL—Joseph F. Duddy, Manager

Hotel Pittsburgher
... the stopping place of busy people!
PETRO STURDINESS, RELIABILITY...

Win Army Architect’s Endorsement

FOR PEACE-TIME BUILDING

Oil burning equipment for army cantonments, hospitals and other war buildings must have what it takes to give maximum performance with little if any attention. Such equipment cannot be fussy. Frequently called upon for long periods of uninterrupted service at peak capacity, it must be sturdily built to meet the most exacting requirements.

It is significant to note Colonel Arthur E. Allen envisions that oil burning equipment for peace-time building must measure up to the same specifications. In this connection his reference to Petro is of particular interest:

"The advancements under war pressure in war building necessitated the most sturdy equipment possible and that which would require the least amount of attention. In oil heating systems for peace-time building these requirements are still essential for continuous efficient operation with minimum maintenance. From my experience, I heartily endorse Petro Oil Burner Systems for most satisfactory results, for low upkeep cost and high efficiency."

Because of his wide experience over many years, Colonel Allen's remarks merit careful consideration in planning the oil burning installations of future peace-time construction.

INDUSTRIAL MODELS: No. 5 or No. 6 fuel oil, manual, semi- or automatic operation, 8 sizes to 450 bhp. "Thermal Viscosity" preheating.

DOMESTIC MODELS: No. 3 or lighter oils, "conversion" and combination-unit types, 7 sizes. Patented "Tubular Atomization."

FULL DATA on Petro Industrial Burners are in catalog files of Sweet's and Domestic Engineering. Details on Petro Domestic burners available in separate catalog. Copy of either sent gladly on request.

A nationally known architect, Colonel Arthur E. Allen, has been active for the past five and one-half years in the design and inspection of cantonments, hospitals and industrial installations for the Army in continental United States, in the Pacific area, Africa, India, the West Indies and Central America. Colonel Allen is returning to his former practice in Jamaica, Long Island, with a lot of ideas regarding construction and equipment which he picked up during his Army activities. From 1927 through 1940 more than 27,000 private homes, many theatres and industrial structures were built from Colonel Allen's plans. In view of Colonel Allen's wide experience, his comments on oil heating are especially interesting.

PETRO
REG. U.S. PAT. OFF.
cuts steam costs

PETROLEUM HEAT AND POWER CO. • Makers of Good Oil Burning Equipment Since 1903 • Stamford, Connecticut

APRIL 1946
NEW PRODUCT
with a Great NEW
"Double-Duty" Feature!

Meet the Unseen Guardian!
Symbol of Sisalkraft Products —
guardian of your comfort — pro-
tector of your home investment.

SISALATION
A PRODUCT OF SISALKRAFT

New Sisalation gives you a positive
moisture barrier—plus time-tested reflective
insulation at a new low price.

HERE it is — new Sisalation — that now gives you high
efficiency in moisture barrier paper — plus the time-tested
advantages of reflective insulation! Sisalation is low cost —
only about $20.00 for 5-room house (1,400 sq. ft. sidewall
area, allowing for window and door openings and laps.) That
means every home can now afford it. Write today for facts.

The SISALKRAFT Co.
205 W. WACKER DRIVE
CHICAGO 6, ILLINOIS

The LIFE-BLOOD
of a PENCIL
is the
LEAD!

atch the Navigator Pencil go to work! Notice the
unusual strength of the lead — its smooth uninterrupted
flow of continuous performance-right down to the last
dot!
Surround that fine quality lead with a "backbone" of
straight grained cedar—smoothly finished. Add both to-
gether and you have a pencil that unquestionably is a
leader in its particular class.

SEND FOR LEAFLET NO. 3

KOH-I-NOOR
The RIGHT pencil for the RIGHT job
KOH-I-NOOR PENCIL COMPANY, INC., BLOOMSBURY, NEW JERSEY

What’s The Best
Wood Preservative Known?
The answer is Creosote. Creosote Shingle
Stains contain from 65% to 90% creosote. That's why they penetrate deep and protect
better. That's why they give long-lasting beauty
bring out all the wood's natural loveliness. They're available in brilliant hues or weather-
ing grays or browns which give that authentic
"old" look in a few months.

FREE BOOKLET "Stained Houses"
gives complete information about Cabot's
quality Shingle Stains. Send for your copy
and color cards TODAY. Samuel Cabot,
Inc., 1280 Oliver Bldg., Boston 9, Mass.

Cabot's Shingle Stains

GIVE FIRE A FIVE MINUTE START in an unprotected plant or ware-
house and you can count on a crippled or destroyed business.
"Fireproof" construction will not prevent burning contents from
reducing a structure to twisted steel and broken cement.
FIRE CAN BE CONTROLLED. Fortunately there is one proved way of
checking this needless destruction at the source, when it starts... a Grinnell Automatic Sprinkler System. Protect your buildings
from this commonest of all hazards. See that they have this 24-
hour-a-day protection. Experienced engineers at nearby Grinnell
offices will help.

GRINNELL COMPANY, INC.
Executive Offices: Providence, R. I.
Branch Offices in principal cities.

ARCHITECTURAL RECORD
INDENTIFIES QUALITY IN BUILDERS' HARDWARE

LOCKWOOD identifies its Builders' Hardware with this famous Trade Mark. You will find it on cylinder locks and keys, on mortise locks, on door closers . . . a symbol of enduring quality since 1882.

To the Architect the name LOCKWOOD also signifies a line of Builders' Hardware embracing all requirements, characterized by steady advancement in feature and design . . . and a company that never hesitates to give full and prompt co-operation. We aim to keep it that way.

LOCKWOOD HARDWARE MFG. COMPANY
Division of Independent Lock Company
Fitchburg • Massachusetts

The A-B-C of Troublefree Valve Performance...
A. Use the right type valve for the service
B. Place valves correctly in the line
C. Choose Jenkins Valves for lifetime economy!

Base your valve selection on this formula and make sure of the extra value that means minimum maintenance, and the lowest cost in the long run. Over 600 patterns, described in the Jenkins Catalog, for every service. Jenkins Bros., 80 White St., New York 13, New York.

JENKINS VALVES
For Domestic, Commercial, Institutional, and Industrial Service . . . In Bronze, Iron, Cast Steel, and Corrosion-resisting Alloys . . . 125 to 600 lbs. pressure.

SPOT SASH CORD

is Tops in Value

Obtain complete drinking water satisfaction for college and university dormitories, dining halls and student union buildings—specify and install HAWS

Sanitary DRINKING WATER FOUNTAINS, FAUCETS and ELECTRIC WATER COOLERS

They're dependable, sanitary, easy operating, simple to install and give long lasting service. Write for catalog today!

HAWS DRINKING FAUCET CO.
Manufacturers and Designers of Drinking Fountains
Since 1909
1808 HARMON ST., BERKELEY 3, CALIFORNIA

Agents and Sales Representatives in all Principal Cities
These are some of the rooms in the General Offices of the Illinois Central Railroad in Chicago that were recently equipped with specially designed Caldwell Fluorescent Lighting Fixtures. For more than a half century the Caldwell name has been identified with lighting fixtures in the Nation's foremost buildings. We welcome consultation with architects.
Again Milcor is in a position to figure
on your metal trim jobs. To offer a fund
of information helpful in your planning.

The pre-war trend toward metal trim
for interior finish is now continuing
stronger than ever. Because of the in­
creased capacity for production of steel.
Because of the basic advantages of metal.

Metal trim is permanent, sanitary,
economical to maintain. It is fire-safe.
It lends itself to attractive treatments
in interior design, providing unobtrus­
ive beauty in the modern spirit.

There is an appropriate Milcor Metal
Trim item for every exposed interior
detail. Milcor, leader in this field, offers
everything you need for either monu­
mental or residential construction. And
only Milcor offers interior metal trim
with a sound-deadening insulmat lining.

Use Milcor Metal Trim, for credit­
able results on all your jobs. Write for
revised Milcor Metal Trim catalog. Or,
see the Milcor catalog in Sweet's.