...puts Sell into floor space!

- Make floors a feature that helps sell the house. Do it with this new plan that lets home buyers pick their own custom-designed floors of Texfloor... the luxurious linoleum with the textured look. It means the extra of colorful, individualized interiors, but that's not all. Long-wearing Texfloor saves work. It's easy to keep spotlessly clean. AND ECONOMICAL TEXFLOOR CUTS COSTS! Easy-to-install Texfloor costs up to 30% less, installed, than ordinary flooring. Texfloor offers more, for less.

HERE'S HOW TO DO IT!
Put Texfloor in your model home. Let prospects see how it makes your home more attractive... adds the newest decorating effect of sparkling room-to-room color coordination.
Tell your prospects how Texfloor saves them work and money... gives them long-wearing, easy-to-clean floors. Let your home buyers custom-design their own floors, selecting the colors and patterns they want for each room from your Texfloor samples.

Texfloor gives every room a guest room look!

FREE TEXFLOOR SAMPLES! Send for further information and FREE SAMPLES of TEXFLOOR today. Write Dept. AR-6, Sloane-Blabon Corpora-
tion, 295 Fifth Avenue, N.Y. 16, N.Y.

SLOANE quality LINOLEUM PRODUCTS
SLOANE-BLABON CORPORATION
295 FIFTH AVENUE, NEW YORK 16, N.Y.
Meet Mr. M. T. Broyhill and his two sons (M. T. Jr., left, and Joel T., right) leading Washington builders and developers. They asked homeseekers "What sort of a home do you really want?"

Here is a capsule of the answers: 74% said, "I want rambler!" 63% said, "I want 3 bedrooms!" 83% said, "I want a General Electric Kitchen!"

The Broyhills designed a home to meet these specifications. What followed is a most amazing success story. All 1000 G-E equipped houses were sold within 60 days!

This all-on-one-floor house is built of brick, has 3 bedrooms, a large living room, tile bath, copper plumbing, dining space, clear oak hardwood floors, furred and plastered walls.

Owners were given a choice of eleven distinctive exteriors; all lots are completely landscaped and include shrubbery.

This is the kitchen 83% of the people interviewed in the survey want in their new homes—General Electric! It includes the G-E Spacemaker Refrigerator, G-E Speed Cooking Range, G-E Dishwasher, G-E Disposal® Unit, G-E Steel Cabinets and G-E Texolite® Counter Tops. Yet, the complete house sold in the $10,000 class!
Take a tip from an enterprising Washington, D. C. builder and developer who asked thousands of homeseekers what they really wanted... then built houses to their needs... and sold all 1000 General Electric equipped houses within 60 days!!

**ADDITIONAL PROFIT... LESS SELLING EXPENSE... MORE SATISFIED HOMEOWNERS**

...when your houses are equipped with General Electric Kitchens!

Today, more than ever, people all over the country want complete General Electric Kitchens in the homes they buy.

And that's good for you!

It means you can realize an additional profit on your houses. The cost of the General Electric equipment is simply included in the selling price of the house. People recognize this additional value. Furthermore, you can include G-E Kitchen equipment in your homes for as little as $4.80 a month under the "Packaged Mortgage" Plan.

It means that your selling costs may be reduced. Builders all over America report that their General Electric equipped houses sell much faster than those in the same areas that do not offer all-electric living!

It means that your buyers will be more satisfied with their modern, all-electric home that eliminates drudgery in the kitchen!

So see your local General Electric distributor. He will be happy to work hand in hand with you on your projects.

Remember that G.E. offers you the brand of electrical appliances that people prefer to all others... tested merchandising programs... one source of supply for matched equipment... assistance in designing and improving kitchen layouts. And most important: G-E dependability!


You can put your confidence in—

GENERAL ELECTRIC

NOVEMBER 1950
One of the most convincing demonstrations on the economy of using durable material is a repair job where low-first-cost material has failed—and is being replaced.

The original installation had been quickly made by pipe fitters. But the replacement calls for hours of work by as many as five crafts: pipe fitter, mason, plasterer, carpenter, painter. And this is only part of the cost story. The loss in production or utilization during the shut-down may amount to far more than the maintenance charge.

True, you pay a little more to begin with for Byers Wrought Iron pipe . . . but you pay a lot less to end with. In literally thousands of applications where corrosion costs you more than wrought iron, the use of this material is the soundest kind of economy move.

You will find a lot of helpful information on the control of excessive maintenance through the use of Byers Wrought Iron pipe in our technical bulletin, WROUGHT IRON FOR PIPING SYSTEMS. We will be glad to send you a copy.

Vol. 108 • No. 5

November 1950

THE RECORD REPORTS

News from Washington. By Ernest Mickel .............. 9
News from Canada. By John Caulfield Smith ............ 15
News from the West. By Robert E. Fischer ................ 16
News from New York. By Robert E. Fischer ............... 20

REQUIRED READING

BUILDING RESEARCH AND MODULAR COORDINATION ARE NEEDED NOW ................................. 28
An Editorial

ART BUILDING, CARLETON COLLEGE ........................ 102

Bolton Hall, Northfield, Minn. Magney, Tueter & Setter, Architects

WEST COAST OFFICES FOR U. S. GYPSUM CO. ............. 108

Cejay Parsons, Architect

RIO GRANDE NATIONAL LIFE BUILDING ....................... 110

Dallas, Tex. Grayson Gill, Architects. George Foster Harrell, Consulting Architect

ARCHITECTURE IN HAWAII, PART II ........................ 113

TERMINAL FOR OAHU TRANSPORT CO., LTD., HONOLULU ............ 114

Law & Wilson, Architects, Engineers, Surveyors

MEDICAL ARTS BUILDING, HONOLULU ........................ 116

Kenji Onodera, Architect

WALTER N. BOYSEN CO. (HAWAII), LTD. .................. 118

Cyril W. Lemmon, Architect; Douglas Freeth, Associate

SEARS, ROEBUCK & CO., HONOLULU ........................ 119

Guy N. Rothwell, Architect. Edmund C. Abrams, Associate

MC CULLY SQUARE BUILDING, HONOLULU .................. 120

Wimberly and Cook, Architects

LOUNGE AND LOCKER BUILDING, PEARL HARBOR ............. 122

Public Works Office, Navy Yard., Pearl Harbor, J. B. A. Van Oort, Department Head Architect. Tom Litaker, Job Captain Architect

AUDITIUM, JOHN H. WILSON PLAYGROUND ................. 122

Ernest H. Harra, Architect

HOly TRINITY CHURCH, HONOLULU .......................... 124

Edwin I. Bauer, Architect

IOLANI SCHOOL FACULTY HOUSING ......................... 125

R. E. Windsich, Architect

RESIDENCE OF MRS. ALICE C. LENNING, HONOLULU ........ 126

Ives & Hogan, Architects

RESIDENCE OF MILDON A. PIETSCHMAN ....................... 126

Richard N. Dennis, Architect

AINA HAINA HOUSING .......................... 128

BUILDING TYPES STUDY NO. 168 ... HOUSES

A HOUSE IS A HOUSE IS A HOUSE ......................... 131

Beverly Hills, Calif. Sweet's Files, Home Owners Catalog, Dodge Reports & Dodge Statistical Research Service

HOUSE IN ANDOVER, MASSACHUSETTS ................. 133

Bernard Kessler, Architect

HOUSE FOR DR. MARY G. HAMILTON, SARATOGA, CALIFORNIA 138

Victor King Thompson, Designer

ARCHITECT'S OWN HOUSE, CINCINNATI, OHIO .............. 142

Carl A. Strauss, Architect

HEADMASTER'S HOUSE, COUNTRY DAY SCHOOL, ST. LOUIS, MO. 145

Frederick Dunn, Architect

HOUSE IN A NEW YORK SUBURB ......................... 148

Olindo Grossi, Architect

HOUSE IN BEVERLY HILLS, CALIFORNIA .................. 152

Paul Lazlo, Architect

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

TEST TILE FOOTINGS FOR EXPANSIVE SOILS ............. 155

By Raymond F. Dawson

ARCHITECTURAL ACOUSTICS .............................. 158

Article 3, Part Two: Reverberation. (Concluding Article.) By Richard H. Bolt and Robert B. Nesbitt

TECHNICAL NEWS ........................................... 161

MANUFACTURERS' LITERATURE ............................ 162

PRODUCTS ... for Better Building ...................... 164

TIME-SAVER STANDARDS .................................. 167

Modular Coordination I, II and III

COVER:


Cover Design by Frances Torbert

NOVEMBER 1950
In a City of Beautiful Buildings

Celotex Roof Insulation is proving itself where it counts most: ON THE JOB!

In roof insulation, as in everything else, the payoff is in performance! And no other roof insulation can challenge the job-proved record for quality, durability and economy set by Celotex Roof Insulation through over 25 years of actual use in all types of installations, all over the country.

Celotex Roof Insulation is low in initial cost, easy to handle, exceptionally durable. It speeds application, reduces labor costs, helps assure a superior, long-lasting roof that requires less maintenance.

So why take risks with untried materials? For complete satisfaction, always specify Celotex Roof Insulation. There's a type to meet every job requirement. Write now for complete technical data! The Celotex Corporation, Dept. AR-110, Chicago 3, Illinois.

It pays to specify genuine

CELOTEX

ROOF INSULATION

The Celotex Corporation
Chicago 3, Illinois

Only Celotex Roof Insulation offers all these advantages

KASS BUILDING, WASHINGTON, D. C.
specified Celotex Roof Insulation

Architect: James F. Hogan
Roofing Contractor: Easterday-Duckworth Company
Owner and Builder: Kass Realty Company, Inc.

Only the finest of materials were specified for the ultra-modern Kass Building — one of the newest office buildings in the nation's capital. Among these, naturally, was Celotex Roof Insulation.

There's a type of Celotex Roof Insulation for every job

REGULAR — for efficient insulation at lowest cost.
PRESEAL — with asphalt coating for extra moisture protection.
PRESEAL "30" — with asphalt coating; special low density core; guaranteed 0.30 conductance for nominal 1" thick material before coating.
VAPOR-SEAL — with asphalt coating; guaranteed 0.30 Btu conductance for nominal 1" thick material before coating; and patented recessed edges that form channels which help prevent roof blisters by equalizing the pressure of air trapped under roofing.

1. High Insulating Efficiency means greater comfort the year 'round, plus reduced heating and air conditioning costs.
2. Low in Cost all three ways: initial, applied, maintenance.
3. Quick, Thrifty to Apply: installed with less time, work and cost because it's light and easy to handle. Strong and rigid—doesn't have to be "babied" on the job.
4. Provides Excellent Bond for hot mopped roofing felts of either the asphalt or coal tar pitch type.
5. Durable, Long-Lasting. It is the only roof insulation made of long, remarkably strong Louisiana cane fibres—and protected by the exclusive patented Ferox® Process against dry rot, fungus and termites.

ARCHITECTURAL RECORD
When you want more impact in storefront identification *without* changing basic design—use PLEXIGLAS. The traditional storefront sign of this Loft Candy Shop in Philadelphia, for example, became three-dimensional and completely luminous when reproduced in this acrylic plastic.

PLEXIGLAS answers other design problems, too. Because it's so easily fabricated, it can be adapted to a wide variety of structural plans. PLEXIGLAS is shatter-resistant and light in weight (only half as heavy as glass), two mighty important properties in assuring low installation and maintenance costs. And too, its good weathering characteristics are important for long outdoor service.

Daytime GLEAM . . . Nighttime GLOW

Interior lighting gives this translucent, 3-dimensional PLEXIGLAS display complete luminosity at night—so that shape, design and colors are the same as in daylight. The giant PLEXIGLAS candy box is 11 1/2' long, 6 1/2' high, 10 1/2' deep, built of white translucent material with red and blue decorations and letters solvent-welded to background panels. Interior lighting consists of 20 mm cold cathode hairpins. Signs float in stainless steel frames and can be opened or removed for easy maintenance. Design: Van Seiver Associates, Philadelphia. Fabrication: Amplex Manufacturing Co., Philadelphia. Lighting and Erection: Modern Sign Advertising Co., Philadelphia.

Send for Free Booklets Today

For completely luminous signs and storefronts that gleam without glare, get full details of the outdoor plastic, PLEXIGLAS. Our new booklets, "PLEXIGLAS for Signs" and "PLEXIGLAS for Modern Storefronts" discuss properties, suggest uses, show applications. Write for them.

**CHEMICALS FOR INDUSTRY**
**ROHM & HAAS COMPANY**
WASHINGTON SQUARE, PHILADELPHIA 5, PA.
Representatives in principal foreign countries

**PLEXIGLAS** is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.
Canadian Distributor: Crystal Glass & Plastics, Ltd.
54 Duke Street, Toronto, Ont., Canada
Pin-tumbler security has been combined with economy, in the Kwikset "400" Line Locksets, making possible top-quality locks at rock-bottom prices. Architects prefer Kwikset's simplicity and beauty of design. Builders and contractors appreciate the economy of Kwikset's fast, easy installation. Wholesalers, Jobbers and Dealers cash in on Kwikset's low cost and fast turnover. Everyone deserves Kwikset's precision construction with high quality materials that results in such amazing durability.*

Whether you need one lock or thousands, investigate Kwikset's "400" Line pin-tumbler Locksets thoroughly before you buy. Remember, every Kwikset Lockset is unconditionally guaranteed.

IMPORTANT: Kwikset Locks, Inc. will soon be in production of their new "600" Line 6-pin tumbler cylindrical Locksets, of all steel and brass construction. Send for your copy of the new, colorfully illustrated catalog, giving full details of this new Kwikset Lock.

*Random selected Kwikset Locksets were subjected to wear tests equivalent to 100 years of hard, everyday usage on our specially designed testing machine. Every lock functioned perfectly at the end of the test.
A.I.A. CENTRAL STATES DISTRICT HAS BIGGEST CONFERENCE; VIRGINIA, CALIFORNIA UNITS MEET

High attendance and increasing enthusiasm for the conference idea are reported from three recent meetings of units of the American Institute of Architects.

The largest of these units, the Central States District, which held its annual meeting at Omaha October 13-14, reported the biggest attendance on record for sessions which were generally said to be the most stimulating ever arranged by the district.

With District Director Lorenz Schmidt presiding at most sessions, the architects heard two speeches which provided fodder for a lot of the corridor discussions on "the situation."

Thomas S. Holden, president of F. W. Dodge Corp., warned against either minimizing or magnifying the import of the limited mobilization program: "What we face is an adjustment, not a disruption, of the national economy."

A.I.A. Executive Director Edmund R. Purves urged architects to bulwark the Institute's active emergency program by making recommendations and providing information about themselves and problems on the local level.

On more general themes, the program included speeches by Dean William Wurster, University of California School of Architecture; Harold D. Hauf, editor of Architectural Record; Marshall Schaffer, U. S. Public Health Service; Engineer Fred Severud and Architect Roger Allen.

Virginia Chapter Sessions

One hundred members of the Virginia Chapter held their annual Fall meeting October 5-7 in Roanoke. Throughout the three-day sessions, small groups huddled in talk over upset conditions in the building industry, but the consensus of opinion seemed to be that things could be a lot worse.

Despite advance billing by Virginia newspapers as a touchy subject, the report on the Chapter's scheme for stock plans for small public schools created little actual excitement. Chapter President Marcellus Wright Jr. merely reported to the membership that a committee from the Chapter had been named to work with the State Board of Education on the matter. State school officials have asked the architects for assistance in the efficient planning of

At Omaha: Marshall Schaffer, Mrs. Lorentz Schmidt; Col. H. F. Cunningham of Lincoln, who introduced Speaker Edmund R. Purves; Lorentz Schmidt; Mr. Purves; Frank N. McNett, Nebraska Architects president, and Lyle A. Lydick, secretary; Harold D. Hauf; Fred N. Severud; Dean Wurster; Chairman Linus Burr Smith, Department of Architecture, University of Nebraska
A.I.A. MEETINGS

(Continued from page 9)

the new $45 million school building program.

Most unpleasant of the subjects reported on and discussed at the meeting was a tax decision by State and City officials. The Old Dominion has extended the gross receipts tax, previously applied to firms alone, to every professionally registered person in the State. Cities in the state also plan to extend their gross receipt levies to include anyone registered, whether a principal or associate of a firm or on salary.

Regional Director Cyrus Silling and Holman Willis addressed the two banquets.

California Council Meets

From California, too, comes the report that an attendance of 450 architects topped all records at the sixth annual convention of the California Council of Architects.

The two-day meeting at Yosemite's Ahwahnee Hotel was highlighted by a progress report from the Council's new executive secretary, Frederick Chase, on the achievements of its intensive public relations program.

Talks by several of the special speakers outlined the opportunities for private architects and engineers in the defense construction program, and a message from Thomas S. Holden, president of the F. W. Dodge Corp., discussed the status of the construction industry in an armament economy.

Tops in popularity among the several seminars were the provocative sessions on "The Young Man in the Institute" and "Schools of Architecture — their Relation to Architects and Architectural Practice.”

ARCHITECT AND DEFENSE DISCUSSED AT MEETING

An informal dinner conference was held October 16 at the Architectural League of New York, for a round-table discussion on the place of the independent architect in defense construction. Representatives of the U. S. Corps of Engineers, the A.I.A., and the architectural press were present.

Col. Edwin Ketchum, Commander, New York District, U.S.C.E., and Charles K. Panish, of the civilian staff, stated that if a national defense program is set up, the government will need to rely heavily on the services of independent architects. The discussion included suggestions on how both large and small architectural offices might best be employed in such work.

Harry M. Prince, vice chairman of the A.I.A. Committee on National Defense, pointed out the steps the A.I.A. already has taken to secure a place for the independent architect in such a program, and to insure close cooperation of the A.I.A. with the various government agencies.

HOSPITAL GROUP ADOPTS OWN APPROVAL PROGRAM

Authorization of its own hospital approval program at an estimated cost of $100,000 a year was the biggest news from the 52nd annual convention of the American Hospital Association this Fall.

Membership dues were increased an average of 58 per cent to finance the program, which was adopted over the strong objections of the American Medical Association. The American College of Surgeons had decided to drop the approval program which it has conducted for the past 25 years. Criteria for approval will continue to include physical facilities, balanced representation of medical specialties, medical records, etc.

Of major architectural interest was an all-day seminar on problems in hospital design. Presenting the architect's point of view on successive panels were Aaron Kiff, A.I.A., of York and Sawyer, New York; Carl A. Erikson, A.I.A., of Schmidt, Garden and Erikson, Chicago; George Holderness, A.I.A., of Eggers & Higgins, New York; and Arthur G. Stephenson of Stephenson & Turner, Melbourne, Australia. Two half-day sessions for architects also were held.

Other major convention developments included a resolution asking restoration of a proposed $75 million cut in Hill-Burton funds.
MOST REPRESENTATIVE BUILDINGS, 1925-1950?
58 ARCHITECTS RESPOND TO ANOTHER'S "POLL"

Fifty-eight contemporary architects have joined a historical parade by turning speculative eyes on the panorama of recent American architecture.

They were pulled into the ranks by Howard Dwight Smith, of Ohio State University's Department of Architecture and Construction, who hoped to find by a sampling of current professional opinion a list of structures which might be accepted as bases for analyzing the architectural trends of the time.

Several months ago Mr. Smith sent queries to 140 architects selected by him as reflecting "a broad cross-section of architectural interest covering a wide geographical area."

His question was: "Based on your snap judgment and without benefit of extensive research, what American build-
ings of 1925 to 1950 will in your opinion be accepted as examples of the best architectural expression of the period?"

The 58 architects who sent lists in response named Radio City more times than any other project. It got 40 "votes," while the next-most-frequently-named, Cranbrook, had 25.

Next in order came the Philadelphia Savings Fund Society building and Falling Water, with 20 "votes" each; and the United Nations Secretariat, Taliesin West and the Nebraska State Capitol, each listed by 14 architects.

Altogether, 135 buildings or integrated projects were named; 60 only once, 18 only twice, five only three times, and six only four times. Most lists named 10 or 12 buildings, but one named 18 and one named only three.

Two of the buildings which were mentioned most frequently might on the strictest interpretation of Mr. Smith's question have been disqualified by a date: the Nebraska State Capitol was actually designed before 1925 but not in use till 1927. But, says Mr. Smith, "Surely the license which includes the presently uncompleted U.N. Secretariat at this end of the quarter-century could not exclude Nebraska at the other. . . ."

The 12 architects who responded without naming any projects included Frank Lloyd Wright, whose reply was terse: "Dear Smith, How am I to know and comparisons are odious anyway."

Except for four who wished to remain anonymous, these are the architects whose lists were tabulated:


58 ARCHITECTS LISTED THESE BUILDINGS:

<table>
<thead>
<tr>
<th>Project</th>
<th>Year</th>
<th>Architects</th>
<th>Times Listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio City</td>
<td>1931</td>
<td>Reinhard &amp; Hofmeister</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corbett, Harrison &amp; Mac-Murray</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hood &amp; Fouilhoux</td>
<td></td>
</tr>
<tr>
<td>Cranbrook</td>
<td>1925</td>
<td>Eliel Saarinen</td>
<td>25</td>
</tr>
<tr>
<td>Philadelphia Savings Fund Society</td>
<td>1932</td>
<td>George Howe and William Lescaze</td>
<td>20</td>
</tr>
<tr>
<td>Falling Water</td>
<td>1937</td>
<td>Frank Lloyd Wright</td>
<td>20</td>
</tr>
<tr>
<td>United Nations Secretariat</td>
<td>1949</td>
<td>United Nations Headquarters Planning Commission; Wallace K. Harrison, Director</td>
<td>14</td>
</tr>
<tr>
<td>Taliesin West</td>
<td>1938</td>
<td>Frank Lloyd Wright</td>
<td>14</td>
</tr>
<tr>
<td>Nebraska State Capitol</td>
<td>1925</td>
<td>Bertram G. Goodhue &amp; Assoes.</td>
<td>14</td>
</tr>
</tbody>
</table>

NEW YORK CENTRAL OPENS FIRST STATION IN 20 YEARS

ELABORATE DEDICATION ceremonies were staged by the city of Toledo to mark the opening in September of its new $5 million Union Station (photo above), the first station built by the New York Central System in two decades.

The structure, which has exterior walls of yellow brick and glass block, is built on four levels, with a sublevel utility room which contains equipment rooms, transformers and storage facilities.

Waiting rooms, restaurant and ticket offices are on the main or third floor, entered by passengers from the Plaza. Covered ramps and stairways lead to track locations.

On the first floor are operating and maintenance offices and baggage room. On the second level are sleeping quarters for train crews between runs—an innovation in railroad planning—and an employees' recreation room and restaurant. Administrative offices and dispatching facilities are located on the fourth floor, a mezzanine built around the two-story-high waiting room.

There are windows in the concourse walls overlooking the tracks. Paired arches provide entrances to stairways and ramps, with a system of lights to control passenger traffic flow. Ticket counters are open. Throughout interiors, emphasis is on easy maintenance.

R. L. Corsbie of the New York Central Architectural Department was project architect.

OFFICERS ELECTED

Officers elected at the recent meeting in New York City of the Producers' Council, Inc., are pictured above: (left to right) president—R. S. Hammon, vice president, Johnsville Sales Corp., New York City; secretary—Charles A. Snyder, president, Richmond Screw Anchor Co., Inc., New York City; treasurer—F. J. Close, manager of architectural sales, Aluminum Company of America. P. C. was created as an A.I.A. affiliate in 1923.
NEVER Ventilate a Ceiling or Wall Space to the Inside...

If you do, the better the insulation, the worse will be the condensation; for the colder the air in the space between insulation and roof, or walls, the less vapor can it support.

In new construction, thousands of tons of cement and plaster are evaporating. Vapor flows from areas of greater density into this small, cold space, an area of less vapor density and small capacity.

Multiple sheets of accordion aluminum, because impervious to vapor, force out through exterior walls and roofs, ordinary amounts of fortuitous vapor formed from rain leaks, etc. With unusual amounts of vapor, as from crowds, in theatres, schools, stores, etc. provision should also be made to vent this vapor to the outside.

In the illustration, an actual case, it was recommended that the inner vents above the insulation be eliminated. More details about this frequent error and other data on vapor flow and condensation sent on request.

Three-sheet accordion aluminum, permanently separated by fiber partitions, is commercially available as Type 6 Infra, and costs less than 9¢ sq. ft., material with labor, installed between wood joists in new construction.


THERMAL FACTORS, TYPE 6 INFRA
Down-Heat $C.044$, $R22.72$ equals $7\frac{1}{2}''$ DRY Rockwool
Up-Heat $C.080$, $R12.50$ equals $4''$ DRY Rockwool
Wall-Heat $C.073$, $R13.69$ equals $4\frac{1}{2}''$ DRY Rockwool
VAPOR PERMEABILITY equals ZERO
A new type plumbing fixture for Women's toilet rooms by American-Standard

Here are the Watrous Flush Valve Combinations recommended for use with American-Standard F-5800 fixture — the new Sanistand fixture recently developed for use in women's toilet rooms.

These Watrous Flush Valve combinations have been worked out in cooperation with the fixture manufacturer, and provide the necessary 3½ gallon flush and 3 quart refill. As furnished they include Watrous Flush Valves with foot pedals, foot levers or handles as desired, shut-offs, wall flanges, flush connections, spud nuts, spud flanges and vacuum breakers. All exposed parts are heavily chromium plated; concealed valves are rough finished.

The flush valves themselves, of course, offer all those basic Watrous superiorities—water-saver adjustment, self-cleansing by-pass, self-tightening handle packing and single-step-servicing. Screenless silent-action can also be furnished at slight additional cost. Write for Watrous "Series S" Data Sheets.
First NPA Regulations Restrict Inventories, Set Up Priorities; New Real Estate Credit Curbs Come as Housers Protest Earlier Restrictions; BRAB Surveys Building Research; HHFA Projects Listed; B.O.C.A. Basic Code Stirs Interest; Hospital Plant Grows

NATIONAL DEVELOPMENTS affecting all construction came rapidly as 1950 moved into the last quarter.

The abrupt turning of the military tide in Korea left some problems in Washington as well as at Lake Success. Federal officials feared a public reaction that might threaten support of the continuing war against material shortages and inflation on the domestic front. So there were many signs of outspoken comment in high places about the need for constant alertness.

These things seemed assured: Rearmament would continue. There was no backing down from earlier pronouncements concerning an army of three million men. Nor was there any intention to slacken the arms order pace. Higher taxes were in view. The big bugaboo of economic controls had returned to plague industry in earnest; and there were unmistakable signs these controls would be strengthened through the fall and into 1951.

All segments of the construction field, along with other industries, were asking the usual question — how much and how far? Two weeks after the National Production Authority issued its first regulation — the inventory controls order — there still were no definitive answers.

It still remained for the Munitions Board to make known publicly the exact requirements for steel and other basic materials for the defense program. Much of the future planning by builders depended upon this.

NPA Regulation 1 tried to restrict supplies of 32 essential materials to “a practicable minimum working inventory.” In the building materials category, it covered Portland cement, gypsum board, sheathing and lath. Forest products controlled ran through construction grades of softwood and hardwood, but hardwood flooring was expressly excepted. The explanation was that officials believed an armament program would not require large amounts of this item; therefore it did not need to be included. Material for box, crate and package stock manufactured from saw timber was in the NPA order.

Softwood plywood products were placed under inventory controls by the order. Hardwood veneer was specifically excluded, however. Items controlled under this listing included softwood plywood made in hardwood plywood mills; plywood which has a softwood face; and softwood plywood which has been overlaid with paper, plastic, metal or other material. Wood pulp was included.

The government clamp-down was felt by metals even more extensively. Iron, steel, aluminum, copper, manganese, nickel, tin, zinc and other metals and minerals appeared in Regulation 1. And later the Commerce Department imposed additional destination (export) controls on several non-ferrous metals and manufactures. These included manufactures from aluminum, copper, brass, lead and zinc.

Credit Curbs Disturb Housers

Almost immediately, Commerce let it be known that moderate revision of the controls list was being considered.

Meanwhile, the machinery of NPA moved slowly but surely toward a multiplicity of regulations. The inventory order launched a series with a priority for earmarked defense orders following the first of October. Firm allocations were in the wind.

At higher policy levels the Administration was establishing a price-wage stabilization agency.

While the overall controls program shaped up slowly, certain industry segments were complaining bitterly that credit restrictions already imposed in the real estate field were too severe. These regulations, coming out July 18 as the first move to curtail housing construction and conserve scarce building materials, were proving to be bitter medicine for the home building industry. President Thomas S. Coogan of the National Association of Home Builders talked of drastic curtailment of the housing supply. He said a rude awakening was in store for veterans wanting to purchase new homes. They would wake up to the fact that the days of no down payments and five per cent on government-backed mortgage purchases were over, he predicted.

But in spite of the home builders’ protests, government went ahead with plans (Continued on page 16)
to strengthen these credit curbs. New regulations which became effective October 12 call for down payments on a sliding scale from 10 per cent in the $5000-and-under price range to 50 per cent at $25,000 and over, with preference for veterans amounting in most cases to 10 percentage points.

The regulations, made public in a joint announcement from the Federal Reserve and the Housing and Home Finance Agency, are geared to the marketing of housing production of not more than 800,000 to 850,000 new housing units next year. This year's output is now estimated at 1.3 million; official government figure on 1949 production is 1,037,000.

Credit restrictions on non-government-aided housing loans are covered under Regulation X issued by the Board of Governors of the Federal Reserve System. Companion restrictions on government-aided housing finance were announced by HHFA.

Credits secured by new construction as well as credits extended to finance the purchase of homes were affected. The regulations applied only to residential real estate credit on one- and two-family houses. However, regulations applying to construction credit on rental-type projects, non-residential properties and other real estate credit were under consideration and appeared sure to follow Regulation X very shortly.

Projected into the background of the planning was the assertion by Leon H. Keyserling that credit restrictions and other controls to guide housing production would be necessary. He is chairman of the President’s Council of Economic Advisers. In that capacity his statements are watched closely by the trade.

Mr. Keyserling said he hoped that what is left of production after the strict regulations make their mark can be a balanced program, benefiting all classes of citizens.

Yet he wants the restricted program to contain a share of public housing. Raymond M. Foley, housing administrator, also has said he wants continued public housing production in relative proportion to the output of all housing units.

(November 12, 1949)

WASHINGTON
(Continued from page 15)

Government Acts to Counter Repercussions of Emergency

The troubled waters of the international situation have reached the toes of the Canadian government. To counter possible repercussions in the construction industry, the government has price controls ready, is discouraging non-defense capital outlays, and has cancelled much of its own public works program.

In a recent budget speech, Hon. Douglas Abbott, minister of finance, stated that controls would be acceptable and effective only “in a great crisis” and followed this remark with a strong hint that, were controls to be instituted by U. S., Canada would have to do likewise. At present, President Truman has shown no inclination to use his recently acquired power to impose such controls.

We require, according to Mr. Abbott, a “prompt and effective anti-inflationary program.” He urged private business and public authorities alike to keep their capital investment spending within the limits of immediately essential undertakings. The government promises to do its share by launching an economy drive and by budgeting for a surplus.

Our new and vastly increased appropriations for defense will not cripple Canada’s thriving investment program. It will simply direct it into another channel: rearmament. Of course, a major portion of the expenditure is to go into construction and the re-tooling and production of equipment. This will require large quantities of building materials, steel and basic metals. Heavy demands will be made upon our supply of skilled manpower. Defense investment, Mr. Abbott said, “will compete with, and where necessary it will have to displace, non-essential investment.”

Government building projects already under way will be continued, but few new ones will go ahead. Huge cuts are involved in a public works program that was to have cost about $200 million. Post offices, wharves and other items are being cancelled by the score. At the same time, the Government promises that no obstacles will be put in the way of hospital construction. If controls do come, their administrator — Rt. Hon. C. D. Howe, minister of trade and commerce — will be empowered to allocate strategic materials as he sees fit. Hospitals will enjoy high priority.

How municipal undertakings will be affected is uncertain. Toronto’s subway, which is being built in five sections, may have its completion delayed. Steel for the first section came from U. S., for the second section from Luxembourg. Tenders will be called shortly on the third section. “All we need,” declares W. C. McBrien, chairman of the Toronto Transportation Commission, “is the same cooperation from Mr. Howe that we have had in the past.”

Nearing completion one block north of Toronto General Hospital is a new hospital planned exclusively for children. The Hospital for Sick Children will have the largest milk lab known, with a sterilizer of 1500-bottle capacity. Architects Gowan, Ferguson, Lindsay, Kaminker, Maw, Langley and Keenleyside have given the new building design features which tie in with those of nearby Toronto General Hospital.

NEWS FROM CANADA by John Caulfield Smith

Government acts to counter repercussions of emergency

The troubled waters of the international situation have reached the toes of the Canadian government.

To counter possible repercussions in the construction industry, the government has price controls ready, is discouraging non-defense capital outlays, and has cancelled much of its own public works program.

In a recent budget speech, Hon. Douglas Abbott, minister of finance, stated that controls would be acceptable and effective only "in a great crisis" and followed this remark with a strong hint that, were controls to be instituted by U. S., Canada would have to do likewise. At present, President Truman has shown no inclination to use his recently acquired power to impose such controls.

We require, according to Mr. Abbott, a "prompt and effective anti-inflationary program." He urged private business and public authorities alike to keep their capital investment spending within the limits of immediately essential undertakings. The government promises to do its share by launching an economy drive and by budgeting for a surplus.

Our new and vastly increased appropriations for defense will not cripple Canada’s thriving investment program. It will simply direct it into another channel: rearmament. Of course, a major portion of the expenditure is to go into construction and the re-tooling and production of equipment. This will require large quantities of building materials, steel and basic metals. Heavy demands will be made upon our supply of skilled manpower. Defense investment, Mr. Abbott said, "will compete with, and where necessary it will have to displace, non-essential investment."

Government building projects already under way will be continued, but few new ones will go ahead. Huge cuts are involved in a public works program that was to have cost about $200 million. Post offices, wharves and other items are being cancelled by the score. At the same time, the Government promises that no obstacles will be put in the way of hospital construction. If controls do come, their administrator — Rt. Hon. C. D. Howe, minister of trade and commerce — will be empowered to allocate strategic materials as he sees fit. Hospitals will enjoy high priority.

How municipal undertakings will be affected is uncertain. Toronto's subway, which is being built in five sections, may have its completion delayed. Steel for the first section came from U. S., for the second section from Luxembourg. Tenders will be called shortly on the third section. "All we need," declares W. C. McBrien, chairman of the Toronto Transportation Commission, "is the same cooperation from Mr. Howe that we have had in the past."
FOR COMPLETE SAFETY specify
QC METALBESTOS
GAS VENT PIPE

• Listed by Underwriters’ Laboratories without qualification as a Type B Gas Vent.
• Double-wall, all-aluminum construction assures maximum venting efficiency.
• Die-formed, gastight couplers permit easy, fast foolproof installation.
• Adjustable lengths and elbows eliminate cutting, reduce installation costs.

Designed solely for venting gas appliances, QC Metalbestos provides complete protection against gas fumes and fire hazards while assuring a quick, strong draft for proper venting. It fulfills all requirements of the National Board of Fire Underwriters and Underwriters’ Laboratories, Inc.

Available through contractors and dealers throughout the nation.

Write for METALBESTOS Catalog No. 6
To Department L
MODERNIZE WITH HARDWOOD FLOORS!

Economize with PARKAY

Ready-Finished; In Resilient Floor Thickness; Laid Quickly Over Concrete, Wood or Terrazzo

New floors for old offer no problem with the use of Parkay. Only 3/16" thick. All the wearing surface of standard flooring without useless bulk or weight. Permits use with other resilient materials without changing floor levels. Factory finishing by craftsmen insures a lasting lustre and beauty not obtainable by on-the-job methods.

Parkay floors are applied with special adhesive to any smooth, sound subsurface. Simple and clean to install for new construction as well as for remodeling. Time and money saved on every job.

Parkay flooring, made of choice American Oak, is available in two styles—9" x 9" Tiles and 9" wide Broadboard in random lengths. Both styles can also be used for impressive, low-cost wall paneling. For complete details, see Sweet's Architectural File or write direct for free samples and complete information. Wood-Mosaic Co., Inc., Louisville 9, Ky.

THE RECORD REPORTS

WASHINGTON
(Continued from page 16)

The Council chairman put the Administration thinking in the following words:

"Great as our resources are, we cannot support our military defense effort without cutting back very, very substantially and very, very soon from the level of housing production at the middle of this year. . . . If we are going to have to cut back severely on housing — and we are — then we will have to cut back on most of the housing needed least, and less on the housing that is needed most."

If there had been any doubt, this confirmed that the forthcoming restrictions of housing credit would be severe for so-called luxury-type homes. (Note: home builders consider that true luxury type housing constitutes less than one per cent of overall production.)

Then Mr. Keyserling summed up as follows:

"Measured in terms of our resources, we certainly never lived as a nation in housing as good as we could afford to live in, or as good as some other advanced nations of the world. . . . There is no prospect of increasing the supply of all housing materials as fast as the military steps up its demands for them, but we will not have to cut back as much as we endured during World War II, as long as we remain in this intermediate situation."

Why Credit Control?

The former chairman of the President's Council, Dr. Edwin G. Nourse, expressed his views at a recent meeting of the Producers' Council in New York. After telling the building product manufacturers that life had been good to them for some time, and Uncle Sam even better, he said market supporting factors were reaching a waning phase. He listed as conspiring to "release some of your capital" these factors: (1) the real estate credit restrictions; (2) materials allocations; (3) smaller consumer incomes after taxes; and (4) an interruption to family formation.

Dr. Nourse ventured the guess that right after elections, if not before, the building industry would see a set of controls (except wages) reaching wartime proportions. It must be remem-

(Continued on page 20)
More positive and more complete control of door-opening and door-closing, longer service life under all service conditions and complete adaptability to modern design are combined in the DOR-O-MATIC Door Control.

**DOR-O-MATIC Offers**

**ECONOMY...**
Complete control of all door functions in one concealed unit eliminates the need for costly accessories and permits easier installation.

**QUALITY...**
Manufactured by Logan Engineering Co., makers of precision mechanical equipment known and used throughout the world. The Logan reputation is assurance of outstanding quality.

**ADAPTABILITY...**
Can be used with exterior or interior glass, metal or wood doors under all service conditions. Weather-proof operation—no need for seasonal adjustments.

**Write for the**
DOR-O-MATIC Folder
It belongs in your specifications file.

See the Logan DOR-O-MATIC Section in Sweet's File, Architectural

DOR-O-MATIC Equipped Entrance
Florsheim Shoe Company, Chicago
Shaw, Metz and Dolio, Architects
Campbell-Lowrie-Lautermilch Corporation,
General Contractors

DOR-O-MATIC Division of LOGAN ENGINEERING CO.
4908 W. Lawrence Avenue • Chicago 30, Illinois

NOVEMBER 1950
As the air from roof or ceiling areas is passed through the heating element of a Wing Revolving Unit Heater and projected downward through discharge outlets that slowly revolve, the heated air is not delivered to the working area in single-direction blasts, but in moving air-streams that sweep slowly through 360 degrees, covering successively every direction. The heated air moves around and under obstructions reaching to walls and remote corners. Every part of the plant is thus kept at an invigorating comfortable temperature.

L. J. Wing Mfg. Co. 151 Vreeland Mills Road, Linden, N. J.
Factories: Newark, N. J. and Montreal, Canada

Only Wing Revolving Heaters Circulate the Heated Air Around Obstructions

The Record Reports

Washington

(Continued from page 18)

bered that Mr. Keyserling, not Dr. Nourse, now is in the driver’s seat on the President’s Advisory Council.

Late in September, M. S. Szymczak, member of the Board of Governors, Federal Reserve System, further clarified government thinking on the question of need for restricting housing credit. He told the Savings and Mortgage Division of the American Bankers Association:

"Real estate mortgage credit plays a very important and desirable role in our economic system in normal times. Without such credit, widespread home ownership would not be possible. However, in order that such financing may be of greatest value, it is important that it be used most fully when the construction industry as well as all other industries is in a position to meet demands without inflating prices and otherwise damaging the whole economy.

"When industry in general is running at capacity and increased needs for national defense require a substantial diversion of labor and materials for civilian use, the expansion of mortgage credit will only add fuel to the fires of inflation. If mortgage credit is appropriately limited now, it will be in a better position to play its essential role when more productive capacity becomes available to meet consumer demands."

He then described Federal Reserve’s approach in these general terms:

"Restrictions will be imposed on credit (whether or not secured by a mortgage) granted for new construction, including major additions and improvements to existing structures, and may cover industrial and commercial as well as residential properties. Interest rates will not be regulated, but minimum down payment requirements will be established on residential properties. Consideration is also being given to maximum maturity and/or minimum rate of repayment requirements."

The restriction of real estate credit posed new problems for the men in Federal Reserve and HHFA who worked out details. There was plenty of precedent for the consumer credit regulations that came along under Regulation W, reimposed; but there was no such basis from which to project the real estate program.

(Continued on page 22)
ELECTRO fluorescent fixtures

now let you safely specify
the added shielding
advantages of

LUSTREX* styrene

Added light—added beauty—and added assurance of complete satisfaction are all now available in ELECTRO commercial fluorescent luminaires with LUSTREX Styrene louvers.

Only ELECTRO Lustrex Styrene Fluorescents offer these better lighting features:

- Guaranteed against warping and discoloration under normal use for the life of the fixture.
- No light loss! Translucent side panels transmit light—do not trap it.
- Louver panels are moulded—not just interconnected—for added rigidity and superior conformation...the dimensions of the openings remain constant!

CHOOSE FROM A COMPLETE VARIETY OF SMARTLY STYLED, MODERN COMMERCIAL FIXTURES...featuring the ELECTRO "Basic Unit," the exclusive engineering idea that permits easy interchangeability of luminaires.

ALSO! LUSTREX STYRENE IN A COMPLETE RANGE OF SLIMLINE MODELS.

ELECTRO MANUFACTURING CORPORATION

2000 WEST FULTON STREET • CHICAGO 12, ILLINOIS

*A product of Monsanto Chemical Co.

NOVEMBER 1950
THE RECORD REPORTS

Research

The Building Research Advisory Board has found a firm foundation after a somewhat uncertain beginning over a year ago. Twenty-two of its 39 Board members attended a regular meeting in Washington a month ago. It was clear at this session that BRAB will play an important part in correlating research at a time when it is most needed.

The board discussed general policy matters, its future programs, the place of building research in the defense program, considered the financial report and the Director's report.

Under the guidance of Director William Scheick, the BRAB effort has expanded and become better known in industry circles during the past year. Mr. Scheick, by the way, has secured another year's leave of absence from his position as Director of the Small Homes Council of the University of Illinois. While he is on active duty with the Board here, James T. Lendrum is acting as director of the Small Homes Council.

BRAB presently is engaged in a project calling for research on research. Under a contract arranged between the Housing and Home Finance Agency and the National Academy of Sciences, the board's parent body, BRAB is conducting a survey of building research throughout the United States. Proposed scope of the survey, said Mr. Scheick, will encompass research activities directly related to housing carried out by educational institutions, trade associations, professional societies and independent research organizations. The study will cover research both under way and completed.

The next general conference of the board will be on the subject of fire resistance of exterior walls. This will be held in Washington, D. C. November 21. The first such conference was here in January on the subject of weather and the building industry.

At the recent board meeting the question of many other smaller conferences, to be held in cities other than Washington, was discussed. BRAB will continue to foster the general conference on specifically selected subjects periodically. But it was thought a new plan could be devised whereby certain members of the board might sponsor round-table group sessions on subjects of special interest to them in their own localities. The new approach was not drawn out to final conclusion; it was discussed as a possibility.

New BRAB Members

Nine new members have joined BRAB ranks, and five of the original members have departed. New members are: John E. Burchard, Dean of Humanities, M.I.T.; Kermit Eby, associate professor, Division of Social Sciences, University of Chicago; Henry T. Heald, President, Illinois Institute of Technology; R. J. S. Piggott, director, Engineering Division, Gulf Research & Development Co.; M. Allen Pond, chief, Division of Engineering Resources, Public Health Service; Ralph Walker, president, American Institute of Architects; Stanton Walker, director of engineering, National Sand & Gravel Association; B. L. Wood, consulting engineer, American Iron and Steel Institute; and W. R. Woolrich, Dean, College of Engineering, University of Texas.

(Continued on page 24)
FOR new departures in store front architecture Brasco Construction adds distinctive beauty that attracts new customers and brings old ones back time and again. The classic styling of our Safety-Set line is in complete harmony with advanced design treatment, blending artistically with structural glass and other modern facings.

Structurally sound, Brasco is your safest store front setting. The deeper grip incorporated in all Brasco sash and bars supports window plate firmly and evenly, entirely without strain. Continuous tubular steel reinforcement in our rugged division bars adds the extra protection necessary for enlarged and heightened glass areas.

Here is beauty and brawn combined to provide store fronts with architectural distinction, structural stamina and potent sales appeal. Handsome Brasco stock assemblies in infinite variety are available in both heavy gauge stainless steel and anodized aluminum. Write for catalog and full size construction details.

* * * A COMPLETE LINE FOR EVERY DESIGN * * *

Brasco MANUFACTURING CO.

HARVEY • (Chicago Suburb) • ILLINOIS

Specialists in Metal Store Front Construction for more than 40 Years
THE RECORD REPORTS

HHFA Lists Projects

Meanwhile, the Housing and Home Finance Agency is finding that mounting defense activity puts a special emphasis on the objectives of lower costs and economic stability in its own comprehensive research program. The magnitude of the broadened effort is shown in the recent listing of 37 research projects under contract to 35 colleges and universities, other private and nonprofit organizations, and government agencies.

In addition to those previously reported (ARCHITECTURAL RECORD, July 1950), these are the organizations, together with brief descriptions of the research projects they have undertaken:

- Miami University (Oxford, Ohio) — extensive study of growth patterns of metropolitan areas.
- Pennsylvania State College — study of effect of weather on full-size wood frame structures; study of temperature and humidity effects on selected houses in central Pennsylvania.
- University of Florida — pilot study of a mortgage market (Jacksonville, Fla.) to develop techniques for mortgage market reporting and mortgage market analysis.
- University of Illinois — determination of minimum standards of household plumbing to effect improvements and simplifications.
- University of Miami (Coral Gables, Fla.) — development of technique for forecasting (short term) the market for housing in an industrialized middle-size housing area.
- University of Michigan — appraisal of the changes over a period of time in the labor-management relations of the building industry; survey of recent home buyers to determine the relative importance of various factors entering into the transaction.
- University of Minnesota — study of temperature and humidity effects on selected houses in the Minneapolis area.
- University of Toledo — study of relationship in concrete building units of changes in volume and in moisture content.

Southwest Research Institute will carry on a research project calling for development and testing of economical designs for combined concrete floor slabs and foundations, for unusual soil conditions found largely in the Southwest.

U. S. government agencies under contract for research projects include:

- Bureau of the Census — development of statistical method of determining inventory of nation's housing at intervals between census periods.

- Department of Agriculture (Bureau of Entomology and Plant Quarantine) — study of various construction methods, including those used in World War II housing projects, as measures of termite prevention; (Bureau of Plant Industry, Soils, and Agricultural Engineering) —testing of soil cover materials for use in basementless dwellings; study of construction practices and effects in the use of wood siding; regional studies of deleterious effects in the use of crawl spaces under dwellings; (Forest Products Laboratory) — preparation of manual on recommended practices for dwelling construction; appraisal of current practices in the construction of frame dwellings to determine extent to which available improvements have been applied and

(Continued on page 174)

HERE'S AID TO ARCHITECTS and ENGINEERS in planning SOUND SYSTEMS!

ARCHITECTS and their engineers are invited to make full use of the experience of RCA Sound System engineers and the great RCA research and engineering laboratories, in planning and engineering sound systems.


• • •

Call on RCA Sound System engineers while your plans are still in formative stage. No obligation, of course.

SOUND PRODUCTS

RADIO CORPORATION of AMERICA

ENGINEERING PRODUCTS DEPARTMENT, CAMDEN, N.J.

Please have one of your sound system engineers call on us.

NAME.

FIRM.

ADDRESS.

CITY. STATE.

(Continued on page 174)

ARCHITECTURAL RECORD
Crawford announces the publication of a new tool for Architects and Engineers

THE CRAWFORD 60-Second DOOR SELECTOR

This new type of reference book is dedicated to the idea that you should be able to find any door you want in 60 seconds, together with all the information you need for specifications. Covers doors for warehouses, loading docks, factories, service stations, boat wells, residence garages, etc., and all auxiliary equipment such as operators, controls, etc. This book should save you much time and effort. A copy is yours for the asking.

Call your local Crawford Door Sales Company, listed in your Yellow Pages, or write us on your letterhead.

CRAWFORD DOOR COMPANY
Main Plant: 49-401 St. Jean Ave., Detroit 14, Michigan

FABRICATING PLANTS in Portland • Tacoma • Los Angeles • San Francisco • Dallas
Kansas City • Chattanooga • Milwaukee • Hudson, Mass. • Cadillac • Ottawa, Canada.
DISTRIBUTING WAREHOUSES in 79 major cities.
SALES AND SERVICE companies everywhere.
THE RECORD REPORTS

CONSTRUCTION COST INDEXES
Labor and Materials
United States average 1926-1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assoc., Inc.

NEW YORK

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Brick</td>
<td>Frame</td>
<td>Brick and Concr.</td>
<td>Brick and Steel</td>
</tr>
<tr>
<td>1925</td>
<td>121.5</td>
<td>122.8</td>
<td>111.4</td>
<td>113.3</td>
</tr>
<tr>
<td>1930</td>
<td>127.0</td>
<td>126.7</td>
<td>124.1</td>
<td>123.6</td>
</tr>
<tr>
<td>1935</td>
<td>93.8</td>
<td>91.3</td>
<td>104.7</td>
<td>105.5</td>
</tr>
<tr>
<td>1939</td>
<td>123.5</td>
<td>122.4</td>
<td>130.7</td>
<td>130.1</td>
</tr>
<tr>
<td>1940</td>
<td>126.3</td>
<td>125.1</td>
<td>132.2</td>
<td>131.4</td>
</tr>
<tr>
<td>1945</td>
<td>160.5</td>
<td>161.7</td>
<td>156.3</td>
<td>155.4</td>
</tr>
<tr>
<td>1946</td>
<td>181.8</td>
<td>182.4</td>
<td>177.2</td>
<td>174.8</td>
</tr>
<tr>
<td>1947</td>
<td>219.3</td>
<td>222.0</td>
<td>207.6</td>
<td>203.8</td>
</tr>
<tr>
<td>1948</td>
<td>250.1</td>
<td>251.6</td>
<td>239.4</td>
<td>235.6</td>
</tr>
<tr>
<td>1949</td>
<td>243.7</td>
<td>240.8</td>
<td>242.8</td>
<td>240.0</td>
</tr>
<tr>
<td>June 1950</td>
<td>255.6</td>
<td>254.4</td>
<td>246.8</td>
<td>245.9</td>
</tr>
<tr>
<td>July 1950</td>
<td>261.3</td>
<td>261.0</td>
<td>251.1</td>
<td>250.0</td>
</tr>
<tr>
<td>Aug. 1950</td>
<td>264.5</td>
<td>265.0</td>
<td>252.1</td>
<td>251.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% increase over 1939</th>
<th>Residential</th>
<th>Apts., Hotels Office Bldgs.</th>
<th>Commercial and Factory Bldgs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>114.2</td>
<td>116.5</td>
<td>92.9</td>
<td>89.9</td>
</tr>
</tbody>
</table>

ST. LOUIS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Brick</td>
<td>Frame</td>
<td>Brick and Concr.</td>
</tr>
<tr>
<td>1925</td>
<td>118.6</td>
<td>118.4</td>
<td>116.3</td>
</tr>
<tr>
<td>1930</td>
<td>108.9</td>
<td>108.3</td>
<td>112.4</td>
</tr>
<tr>
<td>1935</td>
<td>95.1</td>
<td>90.1</td>
<td>104.1</td>
</tr>
<tr>
<td>1939</td>
<td>110.2</td>
<td>107.9</td>
<td>118.7</td>
</tr>
<tr>
<td>1940</td>
<td>112.6</td>
<td>110.1</td>
<td>119.3</td>
</tr>
<tr>
<td>1945</td>
<td>152.8</td>
<td>152.3</td>
<td>146.2</td>
</tr>
<tr>
<td>1946</td>
<td>167.1</td>
<td>167.4</td>
<td>159.1</td>
</tr>
<tr>
<td>1947</td>
<td>202.4</td>
<td>203.8</td>
<td>183.9</td>
</tr>
<tr>
<td>1948</td>
<td>227.9</td>
<td>231.2</td>
<td>207.7</td>
</tr>
<tr>
<td>1949</td>
<td>221.4</td>
<td>220.7</td>
<td>212.8</td>
</tr>
<tr>
<td>June 1950</td>
<td>233.8</td>
<td>231.0</td>
<td>222.4</td>
</tr>
<tr>
<td>July 1950</td>
<td>237.1</td>
<td>235.0</td>
<td>223.9</td>
</tr>
<tr>
<td>Aug. 1950</td>
<td>240.0</td>
<td>238.6</td>
<td>224.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% increase over 1939</th>
<th>Residential</th>
<th>Apts., Hotels Office Bldgs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>117.8</td>
<td>123.0</td>
<td>89.2</td>
</tr>
</tbody>
</table>

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.: index for city A = $110$ 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.

\[
\frac{110-95}{95} = 0.158
\]

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 list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.
"Our Home Needed 4 Thermostats for Comfort!"

Says CEDRIC ADAMS
Noted CBS Radio Personality

The friendly informality of Cedric Adams' newspaper column and news broadcasts have long made his name a household word in Twin Cities homes. Today, a national TV and radio personality, Cedric's easy, comfortable manner and broad smile have won millions of new friends across America.

Recently he built himself a new home in Minneapolis. It was designed from stem to stern for pleasant living. The heating system received the special attention it required in a home of this type—zone control of different living areas to maintain ideal temperature conditions in all rooms at all times.

The Adams home has four properly located Honeywell thermostats. While some homes require but 2, larger homes may require 5 or more thermostats, depending upon the number of rooms, area of ground covered, exposures to sun or storm. But most larger homes can't get along comfortably on one thermostat. The next home you are commissioned to design may be one of them.

In any event, we suggest that you consult your nearby Honeywell field engineer. His broad experience in zone control will serve as an important aid in determining the proper number of controls needed for best results. Meanwhile, write for informative folder, "Residential Zone Control Applications and Specifications."

This Home Has FOUR Thermostats
1. In the Recreational Area
2. Also in Recreational Area
3. In the Living Area
4. In the Sleeping Area

Electronic Clock Thermostat
Automatically lowered night temperatures may be provided for each zone, for additional convenience and fuel economy.

November 1950
REQUIRED READING

MASONRY HOUSE BUILDING


Economies possible in small house construction through use of modular coordination and engineering methods were demonstrated convincingly by the Industry Engineered Homes Program. Now Lee Frankl's organization presents a step-by-step guide showing just how to build a particular masonry house designed according to the principles of this program.

Much of the utility of the book is due to the visual training technique employed: drawings integrated with concise explanatory text answer specific problems involved in building this house. At the same time it contains helpful information for building any masonry house, showing various types of masonry construction, how brick and tile are laid, and simplified floor and roof framing systems. The construction process is covered so thoroughly that anyone who has some degree of mechanical skill should be able to build a masonry house. The book is appropriate that the first section outlines the basic principles and advantages of the modular system and gives background information on their application in a study conducted in 1947 by the Small Homes Council of the University of Illinois.

Following sections cover the selection of materials, use and care of tools, and on-the-site construction.

HOUSE BUYER'S PRIMER


Although this chatty little book is written mainly for prospective house buyers, it might be of great use to the architect trying to convince an over optimistic client as to the cost of what type of house he can afford. Most of the text is accompanied by comments on the relative costs and values of different kinds of construction. Architect Peters also has compiled a specification chart of "the standard house," which he classes as having "all the essential qualities of the millionaire's house without the price to go with it."

Plan of typical house that can be erected by techniques given in The Masonry House

Homes are analyzed from foundation to roof, including such items as cellar drainage, terraces, decay, insulation, vapor barriers, radiant heating and the heat pump.

Unfortunately, Mr. Peters dismisses the question of architectural design with a terse "Which is best? Which is arry? Who cares, so long as you select the one that is you." His middle road policies prompt him to refer to contemporary styles as "Modernes." However, he writes glowingly of such new materials as waterproof plywood and metal siding.

Architects are defined as those who are "informed in the technical matters and trained in the art of home midwifery," and who "must crawl as far into your skin as possible, to look out of your eyes, to feel your brain react, and even to study how you sleep."

With the good and the bad, the book stands well above the usual run of manuals aimed to instruct the layman on home building, and deserves a place on the bookshelf reserved for clients.

PLANNING AND RESEARCH


The book is a valuable study of a housing development in terms of group needs and satisfaction of these needs. It has been written from the social psychologist's point of view with the psychologist's method of investigation.

From the architect's and city planner's standpoint, the study's worth is in its thorough evaluation of a housing project. From certain defects and successes alike, salient considerations are presented which would be helpful to one concerned with designing in units for a number of people. The challenge set forth is to create housing whether in small or tremendous units which will fulfill human requirements.

The experiment in this case is M.I.T.'s Westgate, a development sheltering veteran's families, a congregation of people generally in the same age level. Westgate's group structure has undergone an analysis which draws a line of interaction among group functions, homogeneity, cohesion, communication, behaviour, etc.

As architect Robert Kennedy indicates in his chapter, "Sociopsychological Problems in Housing Design," in view of the increased occupancy of housing communities, planners are dealing with a whole new dimension. It is essential now to plan for every need of a collection of people rather than for the needs of an individual household. The "city is beginning to be thought of as a constellation of neighborhoods rather than a maze of streets." There is a certain

(Continued on page 30)
Rolling Steel DOORS

Manually, Mechanically, or Power Operated

Here is a shipping dock application where only a Rolling Steel Door would serve the purpose... each door opening is equipped with a hydraulically controlled floor leveling ramp to permit the use of lift trucks for rapid unloading of large trucks and truck trailers. You, too, will find that Rolling Steel Doors offer more desirable operating features than any other type of door... Open or closed, they occupy no usable space inside or outside the opening... their all-metal construction provides permanence, and a lifetime of continuous, trouble-free service. Comparison will convince you, also, that when you buy Mahon Rolling Steel Doors you can rest assured that you will get the finest materials, finest workmanship, and the latest developments in doors of this type. See Sweet's Files for complete information, or write for Catalog G-50.

THE R. C. MAHON COMPANY
Detroit 34, Michigan - Western Sales Division, Chicago 4, Illinois
Representatives in all Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls, Steel Deck for Roofs, Partitions, Acoustical Ceilings, and Permanent Concrete Floor Forms.

Twelve of thirty-four Power Operated Mahon Rolling Steel Doors installed in a large midwest automobile plant. Note hydraulically operated floor levelers in each door opening.

MAHON

NOVEMBER 1950
All you've ever wanted in a fine bathroom cabinet is in this new Hall-Mack Mirro-Glide

Here is the very most in bathroom cabinet beauty and convenience... two sliding plate glass mirror doors which conceal a spacious, double size recessed cabinet.

There's beauty in the large handsome expanse of plate glass mirror (39" x 22") completely bound by a wide chrome frame... in the gleaming white baked enamel steel cabinet... in the fine Hall-Mack workmanship and finish.

And there's real convenience in the big divided cabinet with more than twice the room of an ordinary cabinet... in the six fully adjustable glass shelves... in the smoothly sliding mirror doors which always provide a 20" x 12" mirror for use even when one cabinet is opened.

Wherever you want the ultimate in cabinet quality, and the most in beauty and practical convenience—install the new Hall-Mack Mirro-Glide.

In the complete Hall-Mack line are cabinets for mansion or modest cottage, all made to exacting quality standards to give years of satisfying service. Hall-Mack seamless steel cabinets with lifetime porcelain interior... fluorescent and lumiline lighted cabinets... seamless enamelled cabinets... wall or recessed types... provide a selection for every requirement. Write for folder. Hall-Mack Company, 1344 W. Washington Blvd., Los Angeles 7, Calif.

And remember... Hall-Mack accessories...

ARCHITECTURAL RECORD

REQUIRED READING

(Continued from page 28)

homogeneity, and the satellite town is studied in terms of economics and design.

What the book suggests is that as long as it is both possible and important to know how people live in relation to their families as well as to others in a housing group, cooperation of the planning and social professions will advance the idea of "optimum standards." Thus these findings of the Westgate researchers will help point out to creators of future developments the means of providing the physical environment for satisfactory living.


In this book James Dahir shows how good planning will produce better community living conditions. He has added his voice to Mr. Lewis Mumford's thesis that giant city housing developments (familiar especially to the New Yorker) are no solution to mal-housing, and that through these the problems of unplanned urbanism are by no means resolved.

Mr. Dahir explains that the problem does not lie only in the smoke and smog filled city thoroughfares; but that the rural town, too, has its complexities. (Like Thoreau, in Walden, "From the desperate city you go into the desperate country . . . ") In studying aspects of both rural and urban living, Mr. Dahir has reported the projects destined to make possible more liveable communities. Having accounted for such factors that contribute to "better living" as recreation centers, shopping centers and local institutions (orchestras, museums, theaters, etc.) he shows his concern for the social as well as physical implications of planned communities.

Further emphasized are the responsibilities of every citizen—not only to apprise himself of what must be done, but also to participate in the doing. Thus in its appeal for organization the book encourages both study and action.

Sources of help for future planning, suggested in the final chapter, include the efforts of government, public schools and social sciences.

Not only has Mr. Dahir shown himself to be a community planner, but in addition, he has revealed the social conscience as a compelling force in creating communities for better living.

(Reviews continued on page 32)
IGO's gigantic South District Filtration plant gains light, cuts energy and maintenance costs with Insulux Glass Blocks that resist corrosion, condensation, need no painting, never rust or rot, designed by Paul Gerhardt, Jr., constructed by S. N. Nielsen Co.

DESIGN FOR DAYLIGHT THROUGH

Old style windows need shades, blinds or awnings, that shut out an average of 44% of the light, to reduce sunshine to tolerable levels. When pulled up and down these light-reducers make a crazy-quilt effect on the faces of beautiful buildings.

Now, with an Insulux Fenestration System you can direct daylight UP to ceilings, spread it evenly over large areas. Annoying contrasts are eliminated. Wall insulation increased. Fire hazards diminished.

An Insulux Fenestration System also picks up early morning and late afternoon light and refracts these low-angle light rays over the ceiling surface. The lighting effect is like having the building turn with the sun.

Our Daylight Engineering Staff is at your service. Call on it for information, specifications or help in applying the principles of Insulux Fenestration to your special needs. Write: Daylight Engineering Laboratory, Dept.A111, Box 1035, Toledo 1, Ohio. Insulux Division, American Structural Products Company, Subsidiary of Owens-Illinois Glass Company.

INSULUX FENESTRATION SYSTEMS

by the pioneers of Daylight Engineering
an Architect's File of Information
on FOLLANSBEE TERNE METAL ROOFING

- How to specify it.
- How it's applied.
- Design and color details.
- Use in weathersealing.

Your copy of this A.I.A. File is all ready for mailing. Just use the coupon or write us on your business letterhead. If you'd also like a copy of the Follansbee Forge Certificate Book, just check the coupon.

FOLLANSBEE STEEL CORPORATION
GENERAL OFFICES, PITTSBURGH 30, PA.
COLD ROLLED STRIP • ELECTRICAL SHEETS • POLISHED BLUE SHEETS
SEAMLESS TERNE ROLL ROOFING
Plants—Follansbee, W. Va.
Follansbee Metal Warehouses: Pittsburgh, Pa. • Rochester, N.Y. • Fairfield, Conn.

TERNE METAL DEPT. R
Follansbee Steel Corp., Pittsburgh 30, Pa.
Please send me the following:

☐ A.I.A. File
☐ Certificate Book

Name: ___________________________ Company: ___________________________
Address: ________________________

REQUIRED READING
(Reviews continued from page 30)

NEW EDITIONS

WELDING

Procedure Handbook of Arc Welding Design and Practice. Lincoln Electric Co. (Cleveland, Ohio), 1950. Ninth Ed. 6 by 83/4 in. xi + 1200 pp. illus. $2.00 (domestic); $2.50 (elsewhere).

Aimed to aid designers of welded machines and structures, the revised handbook includes the newest procedures for welding all metals and alloys. The structural design section has been enlarged to provide further information on welded rigid framing, and there are new chapters on weldability and welded design data.

FOR TEXT AND REFERENCE


This text treats such steel structures as industrial buildings, truss bridges (for dead, highway and railway loadings), office and commercial buildings. Included are considerations of lateral and portal bridge bracing, the plate girder, towers and wind bents in tall buildings and other aspects.


"An introduction to the basic concepts and principles of structural theory relating to trusses, rigid frames and space framework." Revisions include the addition of solutions of compound trusses by the Williot-Mohr diagram, explanation of fixed points in continuous beams, and a consideration of members of varying moment of inertia supplementing the treatment of moment distribution.

BOOKS RECEIVED


ARCHITECTURAL RECORD
This is Armstrong’s Asphalt Tile

It’s hard to believe that the floor that contributes so much to the rich decoration of this restaurant is low in cost—but it is. Armstrong’s Asphalt Tile was developed particularly to meet the need for an attractive floor at minimum cost. In addition, it has a special advantage for basements or for any concrete floor slab in direct contact with the ground. It is not affected by the alkaline moisture always found in floors of that type.

Countless color combinations and geometric designs can be created with Armstrong’s Asphalt Tile. Any of the wide variety of smart colors can be combined because this floor is put down tile by tile.

The tough composition of Armstrong’s Asphalt Tile makes it a durable floor that will give long service even under heavy traffic. It is manufactured in two service thicknesses—1/8” and 3 16” and in two types—Standard and Greaseproof.

This is Armstrong’s Linoleum

Where unusual beauty in floor color and design is desired, Armstrong’s Linoleum offers almost unlimited opportunity. Custom designs are easy to create because of its wide range of colors and style effects. The moderate cost of Armstrong’s Linoleum also makes it practical to have an individually styled floor. It is made in six different types and three service thicknesses. Through the years, Armstrong’s Linoleum has gained a reputation for long, satisfactory service in busy stores, shops, and offices.

For additional information on these floors as well as for data on resilient floors of Armstrong’s Linotile®, Arlon® Tile, Rubber Tile, or Cork Tile for commercial, industrial, or residential use, see the latest edition of Sweet’s Architectural Files, section 13, catalog B or the latest edition of Armstrong’s Pattern Book. For samples, literature, or unbiased help on any flooring problem, contact your nearest Armstrong District Office or write directly to the Armstrong Cork Company, Floor Division, 2411 State Street, Lancaster, Pa.
"I am planning to build a large freezer room, to be insulated with 6" of corkboard," writes a man about to enter the frozen food distribution business. "I have heard that dropping outlets through the ceiling reduces the efficiency of the insulation. Is this true, and if it is, how do I hang electrical fixtures from a cork ceiling?"

**HERE'S THE ANSWER:**

Dropping electrical outlets through a freezer room ceiling violates a cardinal principle of cold room construction; that is, the insulation envelope should be broken only at a minimum number of places. Metal conduits are good conductors of heat and warm air. Moisture in the air flowing into the room through the break made by the conduit will condense, turning to ice in the surrounding insulation, and on the outer surfaces of electrical fixtures. The same thing happens inside the conduit. Over the years, this condensation and freezing is bound to have a damaging effect on both the insulation and the electrical wiring.

Freezing in and around conduits and fixtures can be avoided by bringing all electrical wiring in through one conduit, sealed into the wall. Warm air can be kept from flowing through the conduit with a special sealing condulet outside the wall. In the room, leads are distributed under the ceiling. The problem of holding the fixtures to the cork ceiling is solved by the use of wooden blocks, fastened to the ceiling in the first layer of insulation. Blocks should be at least 6'' x 6'' and as thick as the first layer of insulation. When the second layer of insulation is applied, the location of the blocks can be indicated with chalk. The electrician can then drive lag screws into the wooden blocks to support the electrical fixtures.

This problem is not difficult, but if ignored can cause trouble on the job. Like so many aspects of low-temperature insulated construction, the best electrical wiring system can be assured by careful planning before the job begins. Armstrong engineers will gladly help you plan your next low-temperature insulation work.

**SEND US YOUR QUESTIONS:** If you have any questions on the construction of low-temperature facilities, please do not hesitate to write to us. We'll do our best to give you a practical answer. Just address a letter or post card to Armstrong Cork Company, 2141 Concord St., Lancaster, Pa.
Putting stainless steel to work in a given application requires experience. Since stainless is a whole family of steels, the right analysis must be used... or stainless steel will not function properly. That's why Crucible, pioneer in the development of this specialty, offers you, freely, the experience of an alert metallurgical staff. These engineers and metallurgists know which stainless fits your job best... and their advice can save you time and money in applying stainless steel to your requirements.

The painstaking care Crucible shows in finding the best answer to Industry-posed problems is the measure of Crucible's half century of specialty steel leadership. Put this experience to work for you. And, whether the order is in tons or pounds, your problem is assured prompt attention. When it's stainless...call in Crucible.

CRUCIBLE STEEL COMPANY OF AMERICA, Chrysler Building, New York 17, N.Y.
The cost of Q-Floor becomes less as the building nears completion, because Q-Floor construction saves time—a factor that influences the cost of the whole building. Therefore, to quote the actual, final, installed cost, an architect first must figure out how much Q-Floors will save.

Q-Floor construction being lightweight, saves other materials in foundation and frame; it also eliminates much material (such as formwork), necessary to wet construction methods . . . but which does not become part of the building.

Q-Floor, being quick-in, cuts building time 15 to 20%. This saves time, financing, and produces revenue sooner.

Q-Floors and the steel frame are erected together. Therefore, they become immediately a dry, uncluttered platform for subcontractors. Materials are stored right on the floor near where they will be used. All trades move ahead at full speed, independent of each other.

The cost of Q-Floor per square foot, as quoted, is less than the price of carpet. And when you subtract the savings in other materials and in time, you find Q-Floors are less expensive than other forms of floor construction. Then too, Q-Floors protect a building from ever becoming electrically obsolete. They also spare prospective tenants the usual overwhelming initial cost of electrical alterations. The fact that tenants can establish new electrical outlets on every exposed six-inch area of floor—in a matter of minutes, without digging trenches, gives a Q-Floor building an edge in the competitive rental market.

Write for latest Q-Floor literature

H. H. ROBERTSON CO.

2404 Farmers Bank Building
Pittsburgh 22, Pennsylvania

Offices in 50 Principal Cities
World-Wide Building Services
ABOUT EFFICIENT INSULATED PIPING SYSTEMS

School and institutional architects and engineers as well as those responsible for operation and maintenance of educational, commercial, and residential building groups, will welcome the complete descriptive technical information available in the series of catalogs and data books recently published on Ric-wil Prefabricated Insulated Piping Systems.

Publication of these books is in keeping with the Ric-wil policy established forty years ago of providing not only the finest insulated piping and accessories but also complete technical information for users of Ric-wil products.

There are five books in the series, each of which deals with specific phases of insulated piping design, engineering, and installation.

Section 480-2—Engineering Data—A comprehensive data book containing pertinent engineering data as applied to insulated piping and steam distribution.

Section 480-3—Typical Engineering Drawing—Consists of a series of typical engineering drawings for insulated piping.

Section 480-4—Insulated Piping Systems Catalog—Contains pertinent general information about Ric-wil Prefabricated Systems, with many illustrations of the products, their dimensions, installation, and other valuable data.

Section 480-4A—Ric-wil Tile and Cast Iron Conduit Catalog—Contains complete illustrated and descriptive material dealing specifically with Sectional Tile and Cast Iron conduits, their applications and specifications.

Section 480-5—Specification Data—This book contains specifications for all types of insulated piping and installation procedures.

Copies of any of the described books are available. Write to Dept. 9-X, The Ric-wil Company, Cleveland, Ohio.

DO YOU WANT THE FACTS?

OVERHEAD
THE RIC-WIL COMPANY· CLEVELAND, O.

UNDERGROUND

FOR FORTY YEARS THE GREATEST NAME IN INSULATED PIPING SYSTEMS

NOVEMBER 1950
Master Selector Switch Adds New Remote Control Uses

Have you stopped to consider the amazing versatility added to General Electric's remote-control wiring system by the master selector switch?

Replacing gangs of separate ON and OFF controls, the compact master selector switch, RMS-1, provides instant, positive control of up to nine different circuits. With its help you can now plan wiring systems to provide the utmost in convenience—and, best of all, at a cost you'll find hard to believe. Here are just a few of the step-saving advantages you can give clients by using one or more master selector switches.

In Homes and Apartments

Instant bedside control of all interior and exterior lighting . . . an invaluable asset in emergencies. Added convenience through control of kitchen appliance outlets and attic ventilators from several different points. Control of key indoor and outdoor lights from the garage, front door, back door, and bedroom.

In Plants and Factories

Control of fire and alarm circuits. Control of watchman's circuits and provision for pathway lighting on his rounds. Selective control of aisle lights, individual work-area lights, outlets, and small electrically-operated machinery from any desired point.

Then too, there are many applications for farms, swimming pools, parking lots, athletic fields, tourist cabins, schools, museums, hospitals—and you have probably already thought of many more. For further information simply check box (A) below.

New Levelock Switch Box Takes Job-site Abuse

Neither hammer blows nor construction-site abuse can dislodge the side plates of the new General Electric Levelock switch box. Wedging action of a new locking mechanism locks box parts securely in place — yet is simple enough to permit fast, certain assembly of switch-gangs.

Leveling the box against the studding is also a faster, easier operation. Four contact points — instead of the usual three — prevent tilting or rocking of box during nailing.

In addition to nail-through holes, an extra set of nail holes through the side plates allows speedy gang mounting of the Levelock box direct to studding. Extra side-plate pryouts provide for out-of-the-ordinary installations. All pryouts are easily removed by a quick twist of a screwdriver.

A new single-screw ear adjusts from slightly above to ½-inch below the edge of the new Levelock box; while an extra-sturdy bridge across the ear adds increased strength. There's plenty of space, too, within the bridge to accommodate the device strap.

The ingenious construction of General Electric's Levelock saves time when used on either new construction or modernization work. Builders and contractors will appreciate your specifying the Levelock box, so check box (B) in the coupon and get complete information.

Safe, Dependable . . . Easy-to-install G-E BX Cable

More than a half-century of research and improvement are reflected in today's General Electric BX armored cable. Factory-assembled and factory-tested, BX armored cable is still the most practical metal-protected wiring system available for general purpose use. For new construction or modernization work, BX armored cable provides safe, dependable, long-term operation.

Added, best of all, a BX system is a cinch to wire. A few strokes of a hacksaw and a quick twist of the wrist removes the armor and leaves the conductors ready for easy stripping. Cable armor provides grounding protection. In Awg sizes 14 and 12 a metal bonding strip is included under and in contact with the armor to provide increased conductivity in case of ground faults.

You'll like the ease and simplicity of a BX armored cable job, so make it a point to offer your customers this added protection. You'll be more than repaid by savings in installation and "call-back" time. Underwriters' Laboratories inspected, General Electric BX armored cable is available in Awg sizes from No. 6 to No. 14 in both two-conductor and three-conductor types. Specify it on top-quality jobs.

Section K15-115

Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut

☐ A—Remote-control Master Switch
☐ B—Levelock Switch Box
☐ C—Hung Ceiling Box

Name__________________________Title__________________________
Company__________________________Address__________________________
City__________________________Zone__________________________State__________________________

General Electric

ARCHITECTURAL RECORD
For complete details on the Type D Aerofuse, size selection information and engineering data . . . send for Catalog 103.
LOW-COST, DEPENDABLE RUST-RESISTANCE

... for all Types of Sheet Metal Work

You get it in TONCAN IRON—the architect's favorite for every installation in which rust may be a problem.

TONCAN is an alloy iron. Its basic ingredient is highly-refined open hearth iron. Copper is added—twice as much as in ordinary copper-bearing steels or irons. Then the correct amount of Molybdenum is alloyed to bring out the full effectiveness of this double dose of copper.

This high rust-resistance is no mere surface quality. It extends all through the iron. Fabrication does not lessen it. TONCAN IRON readily can be formed, punched, sheared, riveted, soldered, welded and otherwise worked—and still it fights rust.

How about cost? . . . only slightly higher than less rust-resistant materials when you figure the total labor-material-haulage costs of any job. For your client, TONCAN IRON quickly becomes a real saving through its long years of rust-resisting service.

You'll find more information in Sweet's Architectural File, or write to:

REPUBLIC STEEL CORPORATION
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N.Y.

for 40 years . . . HIGHEST RUST-RESISTANCE OF ALL FERROUS MATERIALS IN ITS PRICE CLASS

Here's the story

COPPER-BEARING STEEL

Open hearth steel + Copper = Ordinary copper-bearing sheets

TONCAN IRON

Open hearth iron + Molybdenum in proper proportion = Twice as much copper TONCAN IRON SHEETS, most rust-resistant ferrous sheets in their price class!

Republic

TONCAN COPPER MOLYBDENUM IRON

for ducts, gutters, conductor pipes, roofing, siding, tanks, ventilators, skylights, hoods and other sheet metal applications requiring rust-resistance—and for corrugated metal drainage products.
NOW—SELECTOMATIC PLUS

Synchro-Glide Landing
cuts elevator travel time 1½ seconds per stop

Only Synchro-Glide Landing, the new, Westinghouse-perfected automatic landing control, gives you all these remarkable features:

FASTER FLOOR-TO-FLOOR TIME—Synchro-Glide makes the car accelerate fast and evenly to the maximum possible speed... slow down quickly and smoothly. And—as the car is making its perfect-level landing, the doors are opening... ready for passengers to exit. The total result—floor-to-floor time reduced by 1½ seconds per stop!

SOFTER, SMOOTHER LANDINGS—The smooth, uniform gliding stops will astound you. Synchro-Glide’s dynamic braking action lands a car so softly you scarcely feel the brake set.

ACCURATE FLOOR-LEVEL LANDINGS UNDER ALL CONDITIONS—With Synchro-Glide you are sure of floor-level landings of unmatched exactness regardless of load or temperature changes. Yet, the accuracy of these landings is protected while passengers are entering or leaving the car.

The secret of Synchro-Glide Landing is the teaming of experience-proven Inductors with Rototrol—the exclusive Westinghouse developments that force each car to follow a predetermined pattern.

And—Synchro-Glide Landing is integrated with Selectomatic Supervision (the ingenious “electrical brain” that instantly and automatically matches calls to cars to floors.) This integration gives you the most perfect vertical transportation system you can buy... Selectomatic PLUS!

SEE IT TODAY—right in your own office! See and hear how Selectomatic PLUS Synchro-Glide Landing solves elevator problems. Write on your letterhead and we’ll gladly arrange a showing of our new, sound motion picture “Synchro-Glide Landing for Elevators.” Elevator Division, Westinghouse Electric Corporation, Dept. D-1, Jersey City, N. J.
IT'S EASY TO SEE why glass is so prominent in today's traffic-building storefronts. Glass has a unique combination of characteristics that storefronts require:

Transparency plus a hard, impervious surface. Plate Glass is practically immune to weathering—maintains its lustrous beauty and clarity.

DESIGNER: RAY EMERSON, DAVENPORT, IOWA:

Color—Vitrolite* glass paneling is made with color all the way through. It doesn't need refinishing and is unaffected by weather.

Toughness plus transparency—in clear doors of Tuf-flex* tempered plate glass that extend an invitation to enter.

The Visual Front has won its popularity by the beauty of its simplicity and on its merchandising power. For more information on Visual Fronts and on uses of glass in them, write for our new Visual Fronts book.
Keep heat and heating costs from "HITTING the CEILING"

LET Thermolier Unit Heaters bring both heat—and heating costs—down to a reasonable level.

HEATING COMFORT Thermolier Unit Heaters provide quick heating from a cold start. Desired temperatures are easily maintained within a close range. Heat is uniformly distributed in the working zone by forced air circulation. It is a very flexible system because different or changing heating requirements are easily satisfied by means of different models, a range of capacities, single—or two-speed motors and individual thermostatic controls.

LOW FIRST COST Thermolier Unit Heaters are so efficient and so compact that their heating capacity is often equivalent to the capacity of cast iron radiation or pipe coils of twice the cost. Additional savings are effected because the system requires a proportionately smaller amount of pipe, fittings and accessories.

ECONOMY OF OPERATION Heat is forced down to the working level...not banked uselessly at the ceiling level. Heat is turned on and off merely by throwing a switch either manually or automatically by simple thermostatic controls. The rapid response means that heat is furnished only when and where it is wanted...no heat is wasted.

ADAPTABILITY TO EQUIPMENT AND FLOOR LAYOUT Thermolier Unit Heaters are widely used in industrial plants and warehouses, garages, stores and public buildings. The units and the simple piping are overhead where they do not interfere with arrangement of operating machinery or equipment and do not take up valuable floor or wall space. Units are easily relocated at any time to meet changes in layout.

THERMOLIER UNIT HEATERS HAVE IMPORTANT CONSTRUCTION ADVANTAGES The design of Thermolier Unit Heaters is the product of Grinnell Company’s 100 years of heating experience. Heating experts like Thermolier’s dependable operation, freedom from maintenance troubles and durability. Typical of its construction features is the patented internal cooling leg which permits the use of a plain thermostatic trap, the simplest, least expensive kind of a trap. Other features are built-in drainage, continuous rated capacity and provisions for expansion of U-tubes.

Get in touch with Grinnell or your local Thermolier distributor.
How To Create A Modern Laboratory

as demonstrated at this midwestern university

ANOTHER WAKEFIELD STAR INSTALLATION

The laboratory described is lighted with Wakefield Stars using four 96", 300 ma. 4500° Slimline Lamps. Fixtures have 3'-6" suspension, 8' spacing, and are grouped in 8' and 16' sections as permitted by existing ceiling obstructions-taking full advantage of ceiling bays. Note the similarity in intensity between the Star reflectors and the ceiling above, that made possible taking this photo with the Stars as the main source of illumination.

How an Electrical Machine Laboratory was successfully lighted for the "critical task of meter reading" and to give "a pleasant and restful environment for the eye" is reported in this In-Service Study of Lighting by a registered professional engineer. In spite of undesirable structural elements and physical characteristics of laboratory equipment, the illumination is highly uniform on horizontal and vertical working surfaces, and is free from inherent shadows, high brightness contrasts and objectionable glare. For your copy of the study, write

THE F. W. WAKEFIELD BRASS COMPANY, VERMILION, OHIO

Wakefield Over-ALL Lighting

THE GRENADE
THE COMMODORE
THE STAR
THE WAKEFIELD CEILING

ARCHITECTURAL RECORD
SECURITY because the door locking mechanism is pickproof. Dual-latch concealed in the channel lock rod it is pre-locking, positive latching. Operates whether door is slammed or gently shut. Exclusive Medart patent.

LONG LIFE because of channel frame construction. 16 gauge steel, top, bottom and side frame members ensure rigidity and added strength. All parts electrically welded into solid square frame to assure proper fitting of door.

STYLING for efficiency and modern streamlined appearance. Absence of hinge bolt-heads on doors, styling of louvers, handle and legs give Medart Lockers that smart modern "functional" look. Simplicity that bespeaks smooth operation.

STURDY BOTTOMS...to take punishment. Full width 1/4 inch flange of bottom rests solidly on heavy 16 gauge steel frame member. No possibility of breaking or sagging. Be sure to compare this Medart feature with ordinary type locker bottoms.

ADJUSTABLE LEGS that can be raised or lowered to compensate for unevenness of floor. Legs are correctly spaced every two or three lockers (depending on locker width) to facilitate cleaning under lockers.

MEDART STEEL LOCKERS available in all standard types and sizes...either recessed or free standing. Write for descriptive literature.

P.S. Wire Basket Shelving and Wire Baskets for use where the privacy of Steel Lockers is not required. Write for descriptive literature.

Medart Steel Lockerobes with "Simultaneous Opening - Master Door Control" for elementary school use. Write for descriptive literature.
Paneling the Fireplace Wall is an inexpensive method of decorative accent. Remind clients that interior Weldwood is guaranteed for the life of their home.

Frame a Picture Window in the soft luxury of Weldwood, and you have a striking center of interest. Another of Weldwood's decorative advantages.

A Television Corner provides an attractive setting for this coming "must" in home furnishing. Adds a distinctive touch that clients like.

Built-in Bookcases add dignity and charm. Design them with or without cabinets, according to your client's individual needs.

Corner Cupboards fit in almost anywhere. And clients quickly appreciate the charm and convenient storage space this addition brings.

**6 SUGGESTIONS FOR DESIGNING INEXPENSIVE BEAUTY INTO CLIENTS' HOMES**

Clients will be quick to appreciate how much appeal Weldwood® can add to any home ... in so many ways ... at comparatively little cost.

If you're designing a Builder's project, your suggestions will be welcomed because ... regardless of a still-existing housing shortage ... prospective buyers are looking more and more for "plus-es" that lift new homes out of the ordinary.

Panel a room with Weldwood ... finish one wall in it ... or specify it even for just a corner cupboard ... and you do just that.

If you're designing a new home ... or even remodeling ... for a Private Owner, he'll thank you because, in most cases, you'll have added just the touch he wants, with Weldwood.

The few sketches shown above barely suggest the possibilities. Weldwood is available in birch, oak, walnut and many other fine decorative hardwoods, and is unusually versatile. Try it. You'll find it a stimulating, rewarding material with which to work.

**WELDWOOD Plywood**

Manufactured and distributed by

UNITED STATES PLYWOOD CORPORATION

New York 18, N. Y.

and U. S.-MENGEL PLYWOODS, INC., Louisville 1, Ky.

Branches in Principal Cities • Distributing Units in Chief Trading Areas • Dealers Everywhere
EVERY ADLAKE ALUMINUM WINDOW GIVES YOU THESE "PLUS" FEATURES:

- Minimum Air Infiltration
- No Warp, Rot, Rattle, Stick
- Finger-tip Control
- No Painting or Maintenance
- Ease of Installation

YES, the ADLAKE ALUMINUM WINDOWS in handsome Georgia Baptist Hospital form a perfect weather seal against air infiltration—and ultimately they will pay for themselves by eliminating all maintenance costs except routine washing! And what's more, they'll last as long as the hospital itself!

In a test conducted by an independent research organization, an ADLAKE ALUMINUM WINDOW was opened and closed one-million times—and after the millionth opening still moved as easily, and fitted as snugly, as it did before its test! Only ADLAKE WINDOWS offer the combination of woven-pile weather stripping and patented serrated guides that assures minimum air infiltration and absolute finger-tip control. They keep their smart, modern good looks and easy operation for the life of the building.

Find out how ADLAKE WINDOWS can save you money! For full information, drop a card to The Adams & Westlake Company, 1102 N. Michigan, Elkhart, Indiana. No obligation, of course.
What makes Kleinhans Music Hall acoustically perfect?

A FEW weeks ago, Buffalo's 10 year old Kleinhans Music Hall underwent a rigid acoustical examination by eminent sound control experts from M.I.T. They pronounced it one of the world's five most-acoustically-perfect concert halls.

Inspired design and the use of the finest acoustical materials helped make it so.

The Gold Bond products that went into Kleinhans Music Hall will serve just as effectively in schools, hospitals, offices, factories and bowling alleys. Gold Bond Acoustical Applicators, located in all key cities, are factory-authorized experts, equipped to solve any sound control problem you may have. They will work with you during the planning stage, and figure cost estimates at no obligation; but more important, their supervision follows right through to the finish, insuring complete satisfaction to you and your client.

Choose from Tiles of metal (Acousti-metal), fireproof mineral wool (Travacoustic), wood fibre (Acoustifibre, drilled, and low cost Econacoustic), as well as new lightweight Acoustical Plaster...all fully described in Sweet's.

NATIONAL GYPSUM COMPANY
BUFFALO 2, NEW YORK

The 52-ft. long bar ceiling is faced with Travacoustic, National Gypsum's new fireproof mineral wool tile that closely resembles travertine stone.
WHEN YOU PLAN FOR PLAY

**DUPLICATE RADIO OUTLET**
For aerial, ground and power. GIH radio cap is supplied. Impossible to reverse aerial and ground or power connections.

**BACK-WIRED SIDE-WIRED DUPLEX OUTLET**
Duplex outlet is easy and economical to install, provides lifetime service and convenience for connecting electric appliances.

**FLUSH TUMBLER SWITCH**
Small, easy to install; tough; dependable. Specify these for general lighting control and at all room entrances.

**CLOCK OUTLET**
No wires exposed. Clock hangs picture-fashion on wall. Recess for plug cap provides completely flush job.

---

**AT TIME OF CREATION PLAN FOR RECREATION WITH H & H WIRING DEVICES IN PLAY ROOM OR HOBBY ROOM**

Electrical convenience in recreation or hobby rooms calls for meeting the needs of today and for twenty years to come. Handy switches for general lighting can be supplemented by many plug-in outlets for electric trains, radio, television, projector, table lamps, corn popper, and electric clock, and be sure the snack bar is electrically convenient too. You'll find the complete line of H&H wiring devices contains everything in modern, dependable, service-proved units, standard and special. Plan to specify H&H on every job.

For more information, write today to: 1911 Laurel Street, Hartford 6, Connecticut. Idea-prompting Good Housekeeping booklet "Electrical Planning in The Home" sent on request.

**QUALITY-MINDED ARCHITECTS SPECIFY**

---

Branch Offices: Boston, Chicago, Dallas, Denver, Detroit, Los Angeles, New York, Philadelphia, San Francisco, Syracuse — In Canada: Arrow-Hart & Hegeman (Canada) Ltd., Mt. Dennis, Toronto
Where THERE'S BUILDING... there's WHEELING

Wheeling Diamond Lath
Standard and Bantam Mesh

Wheeling Bar-X-Lath
with solid steel ribs

Wheeling ¾" and
¾" Rib Lath

Wheeling Flat Rib
Metal Lath

Wheeling Expansion
Corner Bead

Wheeling Arch Lath
for extra fire resistance

Wheeling Corner Lath
an improved cornerite

Wheeling Strip Lath
for strengthening joints

Wheeling Combination
Lath. Diamond or
Bar-X-Lath

Wheeling Cold
Rolled Channels

Wheeling Stucco
Binder Mesh

Wheeling Bar-Z-Partitions
Studs, track, and shoes

ARCHITECTURAL RECORD
Leading architects and builders always turn to Wheeling

Wherever you see buildings going up, you will see Wheeling products being put to good use. Architects and builders know that it pays to back up good design and workmanship with the finest materials available. And Wheeling offers them a complete line of dependable, high-quality steel building materials...each soundly designed on the basis of 60 years of research and experience.

A job done with Wheeling is always a job done well. Wheeling products are available at 15 convenient warehouse points and leading dealers across the country. Write today for free descriptive literature or for special information.

Wheeling Curved and Straight Point Base Screed
Wheeling Metal Picture Mould
Wheeling Scallop Edge Corner Bead
Wheeling Flat Apron Corner Bead
Wheeling Bull Nose Bead
Wheeling Casings and Corner Grounds
Wheeling Ashpit and Clean-out Doors
Wheeling Coal Doors
Wheeling Anti-Skid, Expanded Metal
Wheeling Flattened Expanded Metal
Wheeling Tri-Rib Roof Deck
Wheeling Expanded Metal

WHEELING CORRUGATING COMPANY
BUILDING MATERIAL DIVISION
WHEELING, WEST VIRGINIA

ATLANTA BOSTON BUFFALO CHICAGO COLUMBUS DETROIT KANSAS CITY
LOUISVILLE MINNEAPOLIS NEW ORLEANS NEW YORK PHILADELPHIA RICHMOND ST. LOUIS

NOVEMBER 1950
WHY TROFFERS? WHY DAY-BRITE?

There's this to say about troffer lighting: good taste and good light! The smart, modern appearance of recessed troffers . . . the smooth, unbroken surface of the ceiling . . . the endless variety of lighting patterns . . . all contribute an atmosphere of elegance and discrimination.

And when interiors deserve top-quality troffer lighting, there's no equal for Day-Brite troffers . . . in appearance, in quality, in true economy. Day-Brite quality is especially important, for troffer installations are permanent . . . you must be sure of long-term, trouble-free performance before you buy!

Six basic groups to choose from . . . each available in 96" Slimline and 48" Standard Fluorescent . . . each available in snap-in and flange types . . . each adaptable for countless geometric patterns or for unit or continuous installations. Fine lighting equipment? Yes . . . and fine lighting value: value that only famous Day-Brite quality can produce.

DISTRIBUTED NATIONALLY BY LEADING ELECTRICAL WHOLESALERS

Day-Brite Lighting, Inc., 5465 Bulwer Ave., St. Louis 7, Mo.
In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ontario

ONLY QUALITY IS ECONOMICAL

ARCHITECTURAL RECORD
Don't Worry... It's Clay Tile!

When the family “nurse” develops “fumble-fingers” it’s comforting to rely on Genuine Clay Tile.

Even iodine can be whisked cleanly from Clay Tile’s smooth beauty. Hot grease won’t burn Clay Tile—abrasive materials cannot scratch it. Could you say the same about old-fashioned floor and wall coverings? Clay Tile is surprisingly economical in the long run... your clients never have to “baby” it.

It’s in for good! Best of all, there are limitless decorative combinations in color, size and patterns.

The Tile Council of America, Room 3401: 10 East 40th Street, New York 16, New York. Room 433: 727 West Seventh Street, Los Angeles, California.

PARTICIPATING COMPANIES:
American Encaustic Tiling Co.
Architectural Tiling Company, Inc.
Atlantic Tile Manufacturing Co.
B. Mifflin Hood Co.
Cambridge Tile Manufacturing Co.
Carlyle Tile Company
General Tile Corporation
Gladding, McBean & Co.
Mosaic Tile Company
Murray Tile Company, Inc.
National Tile & Manufacturing Co.
Olean Tile Company
Pacific Clay Products
Pacific Tile and Porcelain Co.
Pomona Tile Manufacturing Co.
Robertson Manufacturing Co.
Summitville Face Brick Co.
United States Quarry Tile Co.

THE MODERN STYLE IS CLAY TILE
Handy guide for low-cost heat

CARRIER 46U HORIZONTAL DISCHARGE UNIT HEATER

RECOMMENDED for garages, factories and other industrial spaces as well as beauty shops, exclusive stores and quality buildings.

FOR USE with steam or hot water.

ADVANTAGES: Combines attractive appearance with quiet operation and sturdiness that assures long life. New single-row coil construction offers less air resistance and facilitates cleaning.

CAPACITIES range from 13,400 to 200,000 Btu's per hour.

CARRIER 46S FOUR-WAY DIRECTED-FLO UNIT HEATER

RECOMMENDED for buildings best served by quick heat from relatively high ceiling suspension.

FOR USE with steam or hot water.

ADVANTAGES: Air discharges from 1, 2, 3 or 4 sides provide maximum flexibility in air distribution. Heat can be directed in any quantity and at any angle.

CAPACITIES range from 49,000 to 500,000 Btu's per hour.

CARRIER 46T GAS-FIRED UNIT HEATER

RECOMMENDED for clean, economical heat in offices, factories, warehouses and other types of buildings where gas is available.

FOR USE with gas.

ADVANTAGES: Heat exchanger and combustion chamber of Aluminized Steel are welded into one leakproof assembly for long, trouble-free life. Requires no pipes, ducts, boilers.

CAPACITIES range from 70,000 to 230,000 Btu's per hour input.

CARRIER 46PQR HEAT DIFFUSER

RECOMMENDED for ventilating as well as heating large enclosed spaces in factories, warehouses, hangars, garages and similar buildings.

FOR USE with steam or hot water.

ADVANTAGES: Multiple discharge outlets with adjustable louvres permit air to be delivered in practically any direction. Sectionalized for easy handling, lower erection costs and convenience in installing. Floor, wall or ceiling mounted—right or left assembly.

CAPACITIES range from 115,000 to 1,570,000 Btu's per hour.

Pick the Carrier Unit Heater that's right for the job and you're assured maximum efficiency at minimum fuel cost. Every Carrier Unit is field-tested for superior performance, and engineered and constructed for years of service. Whatever its style, size or type, you get plus values when you install a Carrier Unit Heater. Carrier Corporation, Syracuse, New York.

AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING
Here's why—Laboratory tests and studies in the construction field have demonstrated that cold rolled, light-tempered sheet copper, commonly known as cornice temper copper, is the best quality, most satisfactory material for copper roofing of all types.

Cornice temper copper, with its greater stiffness and higher yield strength, is better able to distribute the stresses induced by contraction and expansion caused by temperature changes and to eliminate sharp local buckling. The stiffer sheets also slide more readily in expansion joints and other mechanical devices used to absorb contraction and expansion.

Ask your supplier for ANACONDA Sheet Copper. It is available in all standard sizes and weights for roofing, flashing, valleys, hanging and built-in gutters, leaderheads and leaders. He also handles such specially developed ANACONDA products as Economy® Copper Roofing, Economy Strip Copper and ANACONDA Through-Wall Flashing.

Get this new, helpful Anaconda Bulletin


You can build it better with ANACONDA® COPPER
Parklabrea, near Los Angeles’ famous “Miracle Mile” Wilshire Boulevard district, is probably the biggest architectural concrete job ever built in the United States. Owned by the Metropolitan Life Insurance Company, it will provide 2,754 dwelling units of architectural concrete. Part of this 176-acre housing development was begun before the war. Present construction includes eighteen 13-story buildings and seven 2-story garages.

Architectural concrete was chosen for this project because it combines economy, beauty, durability and firesafety. Moreover, both structural and ornamental parts could be cast in one operation.


Whether you are designing a huge rental development like the Parklabrea project or a small commercial structure, architectural concrete is an ideal construction material. Versatile and adaptable, it can be used to create imposing and functional schools, hospitals, churches, theaters, office buildings, apartments and other structures. Concrete’s long life and low maintenance cost result in low annual cost. That’s important to owners, investors and taxpayers alike.

For additional information about architectural concrete write for free, illustrated literature. It is distributed only in the United States and Canada.
Here’s one more reason why B & G Hydro-Flo Heating is tops in modern heating. Hot boiler water can be circulated by a B & G Booster through pipe coils under the driveway and sidewalk, melting snow as fast as it falls. Another tiresome job eliminated!

B & G Hydro-Flo Heating is known the country over for its outstanding advantages . . . controlled radiant warmth . . . fuel economy . . . supreme comfort in any weather! This forced hot water system permits a choice of baseboards, radiators, convectors or completely concealed radiant panels. Whatever your selection, you’ll have the finest in automatically controlled heating.

The B & G Hydro-Flo System matches the heat supply to the weather—so exactly that from Fall to Spring, indoor temperature is held constantly at the comfort level. And besides, it provides a year-round supply of hot water for kitchen, laundry and bath.

NO JOB TOO BIG OR TOO SMALL

Hundreds of thousands of B & G Hydro-Flo Systems are in operation today. You’ll find them in low-cost homes, apartments, industrial and commercial buildings, delivering the same comfort regardless of the size of the building.

B & G HYDRO-FLO HEATING EQUIPMENT

The basic units of a B & G Hydro-Flo System are simple and dependable—an assurance of long years of trouble-free service. Any hot water boiler—new or old—can be equipped with B & G Hydro-Flo Products.
New Versatile Division Bar

IN PITTCO PREMIER STORE FRONT METAL

This new Pittco Premier Division Bar (No. 28 H or V) will simplify design and construction on jobs where large areas of Plate Glass must be subdivided. Two features make it extremely practical. An interchangeable spring member permits this new bar to be used both horizontally and vertically. And skillful design has achieved unrivaled simplicity of structure and of installation. At intersections, a concealed fastening locks cross members together securely. Because of the bar’s construction, mitering is unnecessary.

Division Bar No. 28 has a shallow profile and plain face, making it suitable for use in a wide variety of store front designs. It is extruded to give it maximum strength, yet it is not large and heavy. The extruded method of production assures a finish rich in tone and gloss.

The production of this versatile division bar is a result of Pittsburgh research . . . aimed to help solve architectural and building problems encountered in the field.

PITTCO STORE FRONT METAL

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

ARCHITECTURAL RECORD
The preference for pre-stained cedar shake walls has increased phenomenally during the past two years. Architects, builders and contractors all over the land are switching to this excellent wall material because it has the basic qualities that assure complete client approval:

QUALITY APPEARANCE is self-evident. The overwhelming approval of the textured beauty of pre-stained cedar shakes has made this the most imitated wall material in America.

VARIETY OF TREATMENT is exceptional. Exposures may be varied to conform with the design of each house; and color variations are virtually limitless.

DOLLAR VALUE, in original cost as well as upkeep expense, makes the wall of cedar shakes a sound investment.
When the Berlo Vending Company of Philadelphia took over the concessions of Cleveland's Municipal Stadium last spring, they were faced with a crisis.

The old refrigeration equipment was obsolete—couldn't serve a stadium of people—and baseball season was almost at hand! Plenty of the right equipment had to be installed—and fast! So Frigidaire was called in to solve the problem.

30 Frigidaire Beverage Coolers and 21 Compressors Installed

Soon, an army of workmen had made alterations and erected 21 sectional walk-in coolers. Then, in four days, the Gardella Brothers Refrigeration Company, Frigidaire dealer in Cleveland, installed compressors and coils for the walk-ins, put in 30 beverage coolers, and had the complete system in operation—in time for the season "opener"!

Since then, and throughout the baseball and football season, concession officials say they "always have ample supplies of cold drinks to fall back on in any emergency." Moreover, they point out that food preservation is more efficient, providing clean, healthful conditions as well as practical, economical operation.

Food and Drink Cooled for an Army of Fans

This was amply demonstrated when 79,000 roaring fans watched a doubleheader between the Indians and Yankees one day last spring. These fans consumed 100,000 hot dogs, 19,000 ice cream bars, and 85,000 bottles of beverages—all refrigerated by this Frigidaire equipment.

Donald Holt, operations manager, says "The installation in Cleveland may go a long way toward revolutionizing the refrigeration systems in other stadiums throughout the country."

Frigidaire Beverage Coolers assure cold drinks at least cost. Dry storage types available in sizes to fit your needs. All powered by the famous Meter-Miser—simplest refrigerating mechanism ever built.

Frigidaire Compressors provide trouble-free service at lowest cost. Regardless of the refrigerating capacity you require, you can assure yourself of dependable, uninterrupted, automatic service from Frigidaire.

You can't match FRIGIDAIRE

Water Coolers • Low-Temperature Cabinets • Compressors
Ice Makers • Self-Contained and Central System Air Conditioners
Beverage Coolers • Reach-In Refrigerators • Electric Dehumidifiers
Household Appliances

Whatever your refrigeration problem, we suggest you see your Frigidaire Dealer. Look for his name in the Yellow Pages of your phone book, under "Refrigeration Equipment." Or write Frigidaire Division of General Motors, Dayton 1, Ohio. In Canada, Leaside 12, Ontario.

Over 400 Frigidaire Commercial refrigeration and air conditioning products—most complete line in the industry
The Improved Modulating Control for Hot Water and Radiant Heating Systems.... a good product made better

Sarcotherm engineers are constantly searching for a better product.

While utmost simplicity is still the dominant design principle, the new models now available show many important improvements and refinements.

Double Seated Valves are now used in the larger sizes, greatly increasing valve capacity and permitting smaller valves being used on a given size job. Convenient manual adjustment features are now provided in a variety of combinations. Program control systems are available to meet any specification.

Easy Installation. New body construction simplifies piping and allows for easy servicing.

Hundreds of successful installations testify to the efficiency of this simple system. Our Engineering Department will be glad to recommend a suitable control system for your particular job.

ALUMINUM LOOKS GOOD

Riverton Station, Northern Virginia Power Company, Front Royal, Virginia. Sanderson and Porter, Engineers and Constructors; Chapman, Evans and Delehanty, Consulting Architects. Aluminum-faced wall panel fabricated and erected by H. H. Robertson Co.

Wall panels, surfaced with Alcoa Aluminum, have fluted steel backs and 1.5 inches of glass fiber insulation. Conveyors covered with Alcoa Industrial Building Sheet.

Big, metal wall panels went up fast, required no painting or caulking. Good appearance makes for better public relations in any community.
Behind the gleaming surface of this aluminum-clad power plant are shining facts to gladden the heart of a cost-conscious treasurer.

The owners estimate that building with big, easy-to-erect, aluminum-faced panels saved more than $50,000 over masonry wall construction. Big, 18-foot-high panels were erected quickly by five-man crews. Speed in construction means that plants start producing income sooner. This pleases not only treasurers, but presidents and directors, too. The many aluminum-faced plants now in operation have proved that the savings go on year after year. Aluminum surfaces need no painting, pointing or upkeep. Wall panels with glass fiber, or similar insulation, equal foot-thick masonry in insulating value. And they remain a thing of beauty for years to come, for aluminum can't rust-streak, rot or warp.

Aluminum building panels and Alcoa Industrial Building Sheet are available in standard and special types and sizes with complete engineering data. For information on these and other building applications of aluminum, call your nearby Alcoa Sales Office or write ALUMINUM COMPANY OF AMERICA, 1888J Gulf Bldg., Pittsburgh 19, Penna.
**Easy!**

So easy to install new Reflective Kimsul*—you actually save time, save labor!

1 Required length of KIMSUL* blanket is cut from roll and stapled to top plate through fiber strip.

2 Snug fitting, many-layer KIMSUL blanket is then expanded to full length of stud space.

3 Staples through fiber strip attach end of KIMSUL blanket securely to floor plate. Stitched construction assures uniform coverage—prevents thick spots, heat-leaking thin spots.

4 Flanges stapled to sides of framing hold blanket permanently in position and also provide air space. Part of flange folds over face of framing to complete vapor seal.

For complete information about new Reflective KIMSUL, see Sweet’s Architectural and Builders’ Catalogs, or write to Kimberly-Clark Corporation, Neenah, Wisconsin.

**KIMSUL INSULATION**

With Reflective Vapor Seal

Now 2 types of Kimsul Insulation—
Regular and Reflective
(Red Roll) (Gray Roll)
You're looking at the Last Word in Flexible, Low-Cost Installation

Westinghouse Dishwasher Waste-Away® Combination Offers New Opportunities For Better Kitchen Plans

Here's a 48" electric sink that should make a hit with every architect and builder for these very practical reasons:

1. Only ONE drain connection is required for BOTH the Dishwasher and Waste-Away Garbage Disposer, and all plumbing is simplified to save HOURS of installation time.

2. Being of the FRONT-OPENING type, shelves or cupboards can be placed ABOVE the dishwasher at standard height. Its top is an unbroken work surface. And the user still has the convenience of top loading.

3. For custom work surface kitchens, the under-counter model dishwasher and the matching sink cabinet permit use of any type counter and drainboard material, without breaks. Waste-Away fits standard sink bowls, connections are unchanged.

This Westinghouse combination has been HOME-PROVED in all types of installations. It is truly the last word in serviceability. Investigate its possibilities now. Tear out the attached coupon and mail today for complete information.

WESTINGHOUSE ELECTRIC CORPORATION
ELECTRIC APPLIANCE DIVISION • MANSFIELD, OHIO

YOU CAN BE SURE..IF IT'S Westinghouse

Both Electric Sink and 24" Cabinet Model use Under-Counter Dishwasher as a basic unit. Note removable top and side panels.

Westinghouse Electric Corporation
Appliance Division
Mansfield, Ohio

Gentlemen:
Please send me complete specifications and details about your Dishwashers, Waste-Aways and Electric Sink Combinations.

Name ________________________
Firm ________________________
Address ______________________
City _________________________

NOVEMBER 1950
"LOOK AT THAT! A BUILT-UP ROOF THAT'S SMOOTH-SURFACED. NO SLAG! NO GRAVEL!"

"YEH, YOU SAID IT! AND IT'S GOT ASBESTILE* FLASHING FOR ADDED PROTECTION."

"LISTEN, TOPMAN... CAST YOUR EYE ON THOSE FELTS. THEY'RE FIREPROOF, ROTPROOF ASBESTOS!"

Yes—it's a Flexstone* Roof
Each ply is a flexible covering of stone!

- The secret of a Johns-Manville Flexstone Roof is in the felts. They're made of fireproof, rot-proof, enduring asbestos.
- Flexstone Built-Up Roofs won't dry out from the sun... need no periodic coating. They're smooth-surfaced, too—permit thorough drainage, make any damage easy to locate and repair. They are engineered to each job... applied only by J-M Approved Roofers. J-M Asbestos felts are perforated to make application easier, give a smoother job, conform better to roof decks.


Johns-Manville FLEXSTONE* Built-Up Roofs
CORRUGATED TRANSITE® · ACOUSTICAL CEILINGS
DECORATIVE FLOORS · "TRANSITE WALLS · ETC.
Whenever you feel rich thick hard-twist carpet beneath your feet—like the Hollyberry Red Bramble shown here—you whisper "Ah—this is a Lees!"
Because Lees is famous for rugs loomed from yarns of 100% imported wool. Now Lees presents two exciting new carpets—Predecessor and Successor—woven from a miraculous man-made fiber—Estron. They're lovely, long wearing, moderately priced, safe from moths. Another quality triumph by Lees!
23 Years of Salt Spray and Not a Sign of Rust!

23 years right on top of the salt water and these galvanized, unpainted Fenestra® Steel Windows in the Galveston Wharf Company's Mallory Pier, Galveston, Texas,

... look like new (remember, they were made in 1927)
... work like new (they still open and close without a hitch)

They didn't rust a bit. And now Fenestra Engineers have developed a galvanizing system that does a better galvanizing job all around! Control is the secret. Control by Fenestra's Craftsmen in Fenestra's own special galvanizing plant.

HERE'S HOW IT GOES:

Specially Planned Fabrication. To insure proper galvanizing, fabrication and assembly of window parts are especially engineered.

Hot, Deep-Dip Galvanizing. To give lasting protection, the windows are cleaned, rinsed, fluxed and then completely immersed in a bath of molten zinc.

Bonderizing. To give them a perfect finish, the windows are Bonderized and rinsed. (This also provides an excellent base for a decorative paint-finish, when desired.)

For further information, call your Fenestra Representative (he's listed in the yellow pages of your phone book).

Or write to Detroit Steel Products Company, Dept. AR-11, 2252 East Grand Boulevard, Detroit 11, Michigan.

Steel-Strong Windows made to STAY new

Fenestra

HOT-DIP GALVANIZED STEEL WINDOWS
INSULITE*  

Complements any Modern Interior  

INSULITE has given the above interior added beauty and comfort. See how the Tileboard ceiling enhances the over-all decorative scheme. And its surface and lustrous color insures the high light reflection which you desire in a ceiling material. But INSULITE adds more than beauty and high light reflection to this contemporary setting. INSULITE Tileboard insulates as it decorates—cuts heat passage through ceilings as much as 30%. Another advantage of this type of ceiling construction is its exceptionally low cost. INSULITE offers a new and complete line of insulating interior finishes in tileboard, plank and large interior board sizes. Variable in adaption to give the architect ample range of imagination in design and treatment. Words and pictures can’t do justice to their beautiful new colors and surface textures. They must be seen to be appreciated. May we show them to you? Just drop a card to INSULITE, Minneapolis 2, Minnesota.

INSULITE INTERIOR FINISHES: Durolite Plank and Interior Board... Lusterlite Tileboard and Interior Board... Wevelite and Smoothlite Interior Boards... Acoustilite and Fiberlite Acoustical Tileboards.

INSULITE DIVISION  
MINNESOTA AND ONTARIO PAPER COMPANY  
MINNEAPOLIS 2, MINNESOTA

Refer to Swet’s File, Architectural Section 10a/8

Thrush Radiant Heat
quiet, efficient low cost forced hot water circulation

GIVE YOUR customers the finest, most efficient Radiant Heat . . . Hot Water with Forced Circulating Thrush Flow Control System. It provides uniform heating without continuous Circulator operation. Maintains constant flow of radiant heat under all weather conditions. Summer-winter domestic hot water for kitchen, laundry and bath is provided automatically. If you are not familiar with Thrush Flow Control System and heating specialties, see our catalog in Sweet's or write Department J-11.

leading name in
HOT WATER CONTROLS

H. A. THRUSH AND COMPANY
PERU, INDIANA
Black print or blue print
Turquoise makes a true print

MAKE THIS TEST YOURSELF: Reproduce a Turquoise pencil tracing by any method you choose. Note that every detail comes out sharp. “Electronic graphite (used exclusively in Turquoise) is reduced in Eagle’s patented attrition mill to particle sizes of 1/25,000” to deposit knife-edge lines of maximum opacity.

STRONGER POINTS, SMOOTHER LEAD: You’ll find “Chemi-Sealed” Turquoise points stronger because of Eagle’s patented super-bonding process . . . the lead smoother because impregnation with rare waxes gives every particle of the lead a film of lubricant to glide on.

FOR FREE SAMPLE, just write us . . . naming this magazine, your dealer and the grade you desire.

EAGLE DRAWING PENCILS AND LEADS

EAGLE PENCIL COMPANY • NEW YORK • LONDON • TORONTO

IN NEW
Alabama
Livestock Coliseum

When this striking 1.5-million dollar Livestock Coliseum was being planned for Montgomery, Ala., the architects—Sherlock, Smith & Adams, Inc.—executed two alternate designs for the 286-ft clear span, thin-shell barrel roof and ceiling ribs. One design used structural steel, the other reinforced concrete. Bidding showed that concrete cost slightly less than steel. But it was construction time that made reinforced concrete the overwhelming choice. The estimate for concrete was 500 days—230 days less than structural steel!

Reinforced concrete not only requires less time to erect—it has many other advantages. It provides a rugged, durable monolith that is inherently firesafe, as well as highly resistant to wind, shock, and quakes. It costs less. And, reinforcing bars, cement, and aggregate are readily available. On your next building, it will pay you to consider reinforced concrete.

CONCRETE REINFORCING STEEL INSTITUTE
38 S. Dearborn Street
Chicago 3, Illinois

YOU'LL GET MORE FOR YOUR MONEY WITH REINFORCED CONCRETE

ARCHITECTURAL RECORD
"Low Impedance BUS DUCT for the Long Run"

“We've found Westinghouse low impedance bus duct to be ideal for long transmission runs in a plant,” say Mr. R.W. Holicky, Chief Engineer, and Mr. W. F. Nock, Field Supervisor, of the Doan Electric Company in Cleveland. “It's easy to handle and no trouble at all to hook up.”

Let bus duct answer your secondary power distribution problems—whether you're building or expanding. Low impedance bus duct provides required voltage right out to the end of your system... keeps lights, motors, and other equipment functioning at top efficiency. In addition, it packs greater carrying capacity into a smaller space than either conduit or wire. And bus duct means reduced maintenance.

Completely pre-fabricated sections can be installed up out of the way of plant traffic—quickly and easily. What's more, the sections can be disassembled immediately and rushed to new locations with no wiring mess to unravel.


J-30042

Westinghouse

BUS DUCT
ONLY ONE MOVING PART—Powerful thermostatic motor assembly is easily accessible from the front. Simple and durable construction insures long life and minimum of maintenance.

SAFETY TESTS PROVE

POWERS Type H
THERMOSTATIC WATER MIXERS
will out-perform
all other thermostatic or
pressure actuated mixers

Only ONE shower accident may cost many times the price of a Powers mixer. Why settle for anything less than the SAFEST SHOWER MIXER MADE?

POWERS

Thermostatic SHOWER MIXERS

are SAFE against scalding caused by

1 PRESSURE or 2 TEMPERATURE
fluctuations in water supply lines

Safer—because of their quick acting response to any change in temperature setting, pressure or temperature variations in water supply lines. Users report control within 1/2°F. Greater Comfort—shower temperature remains constant wherever set. No jumpy temperatures. More Economical—POWERS thermostatic mixers promptly deliver showers at the right temperature...no waste of time, hot or cold water. For new installations or when modernizing obsolete showers . . . play safe, use Powers type H thermostatic shower mixers.

THE POWERS REGULATOR CO.
OFFICES IN OVER 50 CITIES • SEE YOUR PHONE BOOK
Over 55 Years of Water Temperature Control

CHICAGO 14, ILL., 2753 Greenview Ave. • NEW YORK 17, N. Y., 231 E. 46th St. • LOS ANGELES 5, CAL., 1808 W. Eighth St. • TORONTO, ONT., 195 Spadina Ave. • MEXICO, D. F., Edificio "La Nacional" 601
60 nations to be served by
OTIS AUTOTRONIC ELEVATORS

—and equally interesting, is the fact that all 60 nations are represented among the 16,700 employees of the international Otis organization.

"We assume full responsibility." When Otis turns over the keys to a new installation, management and architects alike are confident of its successful operation. For Otis is the only elevator manufacturer that designs and builds everything—from pit to penthouse!

Likewise, the vertical transportation system in the Secretariat Building of the United Nations is our responsibility. The unusually complex working day of the Secretary-General's administrative staff of 3,200 people presented an unusual combination of vertical traffic patterns. But we knew from long years of planning that 18 Autotronic elevators, coordinated with 8 Otis escalators would provide fast, dramatic—and unexcelled service! Autotronic elevators will serve 39 floors and 3 basements. Escalators will run from the 1st basement to the 4th floor.

We'll be glad to assume full responsibility—anywhere—for planning, designing, manufacturing and installing complete vertical transportation systems. In NEW or MODERNIZED office buildings, hospitals, banks, department stores and industrial plants. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.
It's CERTAIN-TEED's Gypsteel Plank, incombustible gypsum slab—reinforced with galvanized steel wire mesh and locked in a welded steel frame.

Tongued and grooved, Gypsteel Plank handles like lumber. It is easily and quickly installed, saving valuable time and labor costs. It is light (only 12 lb. per sq. ft.) and strong (safe load, 75 lb. per sq. ft.; safety factor of 4).

The insulation value of Gypsteel Plank is high—2" of it equals 10" of cement. And it is permanent—fire-resistant, rot-, vermin- and termite-proof.

Gypsteel Plank makes an attractive ceiling, one that is easily painted. The Plank does not collect dust and dirt as do ceilings of ribbed or flanged materials.

Size of Gypsteel Plank, 2' x 15" x 10'.

Gypsteel is tough as nails! 16 g. galvanized steel wire reinforces the highly compressed gypsum slab. Its frame is electrically welded steel, .032" thick.

The tongued and grooved Gypsteel frames form a sinewy steel I-beam of calculable strength and flexibility. Joints can be safely broken between supports.
Business is on the carpet and carpet is our business

A carpet specialist can help you in many ways. He can help you select the weave your client needs, for luxury and durability.

He can show you scores of colors and patterns, to meet your own decorating specifications. He can help you effect economies, through expert installation. Your local Alexander Smith-Masland contractor is a carpet specialist. Consult him.

Let him save your time, and your client's money.

Alexander Smith
and
C. H. Masland

CONTRACT CARPETS

205 Fifth Avenue, New York 10, New York
New Features Save Floor Space, Speed Up Wiring, Facilitate Operation

**LESS FLOOR SPACE NEEDED**
Compact trough design allows more troughs to be used in a given area of floor space.

**LOTS OF ROOM FOR WIRING**
Generous (4 x 8 in.) wiring gutter makes wiring easier—can be accomplished with units in the trough—and allows use of over-size cable on long runs, keeping voltage drop low.

**ACCESSIBLE FROM FRONT**
CENTR-A-POWER Switchboards are completely accessible from the front, permitting aisle, back-to-back, "L" and "U" installations, further saving floor space.
Switchboards
...at money-saving prices

To save you money on installation time and maintenance costs, Trumbull has designed a new type of switchboard for complete low voltage (600 V and under) switching requirements. Because of pre-engineering and standardization, you can now have the highest quality construction at the lowest possible cost. Here are some of the features:

Pre-fabricated, rigid steel troughs can be placed in any arrangement to provide a completely dead-front, totally-enclosed switchboard. Wiring gutter design is such that load wiring is isolated from incoming load bus. Compact switch or breaker units, called CENTR-A-PLUGS, are easily mounted or removed. A quick-clip attachment saves time in installation, inspection and maintenance. Self-aligning latches replace bolts and nuts. Positive connection to bus bars is assured by use of spring-loaded, reinforced stabs. Each CENTR-A-POWER unit self-contained and electrically isolated from adjacent units.

How CENTR-A-POWER Fits in with Your Present Rigid Type Switchboard Equipment

CENTR-A-POWER is made from three standard troughs, all 90 in. high. At left is unit type CENTR-A-POWER with 18 in. trough; it handles fusible switches through 200 amp. and circuit breakers through 600 amp. Two standard section troughs are indicated in the center. Type A is 22 in. wide, handles 400 and 600 amp. fusible switches. Type B is 28 in. wide, handles fusible switches through 1200 amp. and circuit breakers through 1600 amp.

Unit-Type Troughs (18 in.) are furnished assembled or unassembled. Large standard sections are furnished assembled only.

ASK ABOUT TRUMBULL CENTR-A-POWER CONTROL CENTERS which are of similar construction and line up mechanically and electrically with CENTR-A-POWER Switchboards.


TRUMBULL ELECTRIC

TRUMBULL'S TRAINLOAD OF NEW PRODUCTS

NOVEMBER 1950
To keep pace with modern ideas in planning and new, better standards of comfort which demand higher efficiency from heating systems, an ever increasing proportion of America's schools are using Kewanee Boilers.

The McKeesport Vocational High School, McKeesport, Penna., an outstanding example of today's modern schools, is equipped with 3 Kewanee Type "C" Boilers for stoker firing, with a total steam capacity of 22,000,000 Btu hourly.

McKeesport Vocational High School
McKeesport, Penna.
C. R. Moffit, McKeesport, Architect
F. J. Firsching, Pittsburgh, Engineer
The Withers Co., New Castle, Htg. Engineers
New! 200 M.A.

SOLA "sequenstart"
FLUORESCENT BALLASTS

for two 96-T-8 lamps
and
two 72-T-8 or 64-T-6 lamps

SMALLER: The famous SOLA Sequenstart design greatly reduces bulk and weight. Decreases fixture weight, cuts shipping costs and installation expense.

COOLER: Maximum heat rise, 35°C or less (thermo-couple measurement). SOLA Sequenstarts are the only ballasts with ventilated capacitor compartments. Cooler operation reduces air conditioning load and prolongs ballast life.

MORE VALUE: All SOLA Ballasts are guaranteed for one year. In addition to the significant saving on original cost, these extra values save many dollars on operating costs: less watts loss . . . more lumens/watt . . . lumen output varying less than ±2.5% regardless of line voltage fluctuations of ±15%.

COMPLETE RANGE: Four brand new ballasts, including two new Sequenstart Ballasts, have been added to the SOLA line. These new Sequenstarts bring the advantages of the SOLA Sequenstart principle to any installation.

For full data on the SOLA "Sequenstart" Ballasts write to Department T.

SOLA "sequenstart" BALLASTS

Transformers for: Constant Voltage * Fluorescent Lighting * Cold Cathode Lighting * Airport Lighting * Series Lighting * Luminous Tube Signs * Oil Burner Ignition * X-Ray * Power * Controls * Signal Systems * etc. * SOLA ELECTRIC COMPANY, 4633 W. 16th Street, Chicago 50, Illinois

NOVEMBER 1950
unusual features...

AVERAGE ANNUAL NUMBER OF CLEAR DAYS

for efficient classroom lighting

This U.S. Department of Agriculture map indicates that more than 90% of America has an average of 180 or less clear days in each year. A large percentage of these days will be during class-free summer and week-end periods. In selecting a type of daylight opening for classrooms, it is imperative to use one that transmits the maximum amount of light... while permitting controlled ventilation in either fair or inclement weather. Truscon Intermediate Classroom Windows provide these requirements, and permit selection of glass in upper fixed panel to meet exactly the varying needs of geographical location, climatic conditions, and degree of window exposure to direct solar rays. Write for free literature giving complete details.

FREE Book on Truscon Steel Windows. Write for it. The Truscon Steel Company Manufactures a Complete Line of Steel Windows and Mechanical Operators... Steel Joists... Metal Lath... Steeldeck Roofs... Reinforcing Steel... Industrial Steel Doors... Coal Chute Doors... Steel Lintels... Concrete Reinforcing Bars... Welded Steel Fabric.

TRUSCON STEEL COMPANY
Subsidiary of Republic Steel Corporation
YOUNGSTOWN 1, OHIO
Warehouses sales offices in principal cities
... AND FROM NORTH TO SOUTH—
UP GO THE HOUSES
IN GOES RICHMOND...

In Memphis, Tennessee


In Boston, Massachusetts


Richmond plumbing knows no boundaries—
when it comes to meeting fine housing requirements. From North to South ... from East to West ... more and more ... leading builders, contractors and architects are consistently recommending Richmond.

That speaks well for Richmond quality, and for Richmond economy, too. For over the years, Richmond plumbing fixtures have given lasting satisfaction.

Richmond offers you a wide variety of top-quality plumbing fixtures in "whiter-white," or choice of four pastel colors. You can order for a custom-built home, a large-scale project or a modernization job and always be confident of complete and lasting customer satisfaction. Whatever the plumbing requirement, wherever the building location, you know it's right with Richmond.

RICHMOND
RICHMOND RADIATOR CO.—AFFILIATE OF REYNOLDS METALS CO.

See your wholesaler or Mail Coupon Today:

Richmond Radiator Company
19 East 47th Street
New York 17, N. Y.

Please send me information and literature on the Richmond Plumbing Fixtures. No obligation, of course.

NAME: ........................................
COMPANY: .................................
ADDRESS: .................................

NOVEMBER 1950
"The little red schoolhouse" of song and story is, today, quite apt to be an imposing structure of gleaming white. In schools—as in hospitals, apartment, office, public and industrial buildings—whiteness gives smartness to current designs. Trinity White—the whitest white cement is a true portland cement and meets Federal and ASTM Specifications. Use it in architectural concrete units and in a variety of other forms including terrazzo, stucco and cement paint.

TRINITY WHITE portland cement

Trinity Division, General Portland Cement Co., 111 W. Monroe St., Chicago; Republic Bank Bldg., Dallas; 816 W. 5th St., Los Angeles; 305 Morgan St., Tampa; Volunteer Building, Chattanooga.
Specify NEORAY the LOUVRED CEILING that Satisfies All!

"I Want Simple Low Cost, One-Man Installation"

Neo-Ray hangers and tracks are of simple, labor-saving design without complicated fittings or gadgets. Every 12 to 16 sq. ft. merely requires installation of 1 hanger and 4 screws.

"I Want Adjustable Accent Lighting on Displays from My Louvred Ceiling"

Spot lighting with Neo-Ray "Roto Spot" is available at any point in the louvred ceiling. "Roto Spot" fits flush, and allows a 75° swivel in all directions.

"I Want Perfect Alignment Under All Conditions"

Only Neo-Ray Louvred Ceiling has patented mating slots and tracks to assure perfect alignment always... eliminates corkscrew effect.

"I Want Versatile Louvred Lighting Adaptable To Every Type of Ceiling"

Neo-Ray Louvred Ceilings are made in stock sections. They can be cut on the job to meet any condition such as projections from wall, curved areas or columns.

"I'M A NEO-RAY USER"

SEND FOR NEW 64 PAGE CATALOG

Gives complete engineering data and lighting tables for each item in our complete line of fluorescent, slimline, and incandescent fixtures.

PLUS new simplified spot lamp tables for computing light intensities in show windows and all high-lighted areas.

See our catalogue in Sweet's Architectural File for 1950, sec. 31a 16

NEO-RAY PRODUCTS, Inc.
315 East 22nd St. • New York 10, N. Y.
NEW KAWNEER STOCK SASH
CUSTOM-STYLE FOR
MODERN ARCHITECTURE
UNEQUALED IN PRECISION ENGINEERING AND WORKMANSHIP

Striking simplicity in styling and sound construction make this Kawneer Assembly one of today's truly outstanding architectural metals.

The graceful curve of the sash, the dramatic shadow-line, and the clean plane of the sill create a visual unit which meets the highest standards of contemporary design.

Like all other Kawneer Glazing Assemblies, this Sash incorporates the famous Kawneer resilient-grip principle which insures maximum safety and reliability. The resilient steel spring-clip minimizes breakage due to sudden blows, strong winds, and normal structural settling.

For further information and details, write The Kawneer Company, Department AR-60, 1105 North Front Street, Niles, Mich., or Department AR-60, 930 Dwight Way, Berkeley, California.

THE KAWNEER COMPANY
ARCHITECTURAL METAL PRODUCTS
Store Front Materials
Aluminum Roll-Type Awnings • Modern Entrances
Aluminum Facing Materials • Flush Doors
Your clients know General Electric. They have faith in its products. Now General Electric makes Textolite — a quality plastic surfacing material — a beauty with brawn. It's tops for tops wherever you need it — homes, stores, restaurants, clubs, cocktail lounges. Available in a wide variety of solid colors and patterns to carry out decorative schemes.

G-E Textolite is distributed through a nationwide Roddiscraft warehouse organization.

Here you have the perfect combination — a top quality surfacing material that your clients know and accept, easily available for prompt delivery wherever you are.

Your nearest Roddiscraft warehouse will show you samples of G-E Textolite. A descriptive folder illustrating the many attractive patterns and solid colors is yours for the asking.

Roddiscraft
RODDIS PLYWOOD CORPORATION • MARSHFIELD, WISCONSIN

*Nationwide Roddiscraft Warehouse Service
Cambridge, Mass. • Charlotte, N. C. • Chicago, Ill. • Cincinnati, Ohio • Dallas, Texas
Detroit, Mich. • Houston, Texas. • Kansas City, Kan. • L. I. City, N. Y.
Los Angeles, Calif. • Louisville, Ky. • Marshfield, Wis. • Milwaukee, Wis.
New York, N. Y. • Port Newark, N. J. • Philadelphia, Pa. • St. Louis, Mo.
San Antonio, Texas • San Francisco, Calif.
Whether a fluorescent or incandescent light source is required for your next lighting installation, there is a Curtis quality luminaire that will meet exact requirements for efficiency, appearance, installation and maintenance. The "Coronet" and "Sno-Flake" are two new Curtis developments designed and engineered to provide quality illumination for all commercial interiors and the modern classroom. Write for descriptive illustrated bulletins.
PLANNED FOR PLAY — BUILT TO STAY. Architect’s drawing of bath house entrance at St. Clair Metropolitan Beach, new Michigan play spot constructed by the Huron Clinton Metropolitan Authority. The two supporting beams are of steel, covered with long-lasting, corrosion-resistant Monel. All fasciae and gravel stops are also Monel. Architects: O’Dell, Hewlett and Luckenbach, Detroit 26, Mich. Fabricator: W. P. Hickman Co., Birmingham, Mich.

Where clients seek economy—

Careful planners put MONEL on top

Come along to St. Clair Metropolitan Beach—Michigan’s newest play spot!

The voters of five counties approved a special levy enabling the Huron Clinton Metropolitan Authority to finance this multimillion dollar recreational area, located just 22 miles from Detroit’s City Hall.

For a good many roofing parts—and for a good many reasons, too—the architects, O’DELL, HEWLETT AND LUCKENBACH, specified MONEL® Roofing Sheet.

With its low expansion rate, its high strength and toughness, its resistance to fatigue, corrosion and erosion, Monel assures “life-of-the-building” protection for structures at the playground.

Structures, for example, like the flat concrete canopies above the promenade walks. (See illustration at left.) These canopies have Monel fasciae and gravel stops. And the canopy supports at the bath house entrance (shown above) are sheathed with Monel.

As we move around the 550-acre tract that was reclaimed from the low, swampy ground of the Lake St. Clair shore, we find that every building has Monel fasciae, Monel gravel stops. That all exposed flashings are Monel. That leaders and gutters on the administration building and cafeteria have been fabricated from the same rugged Nickel Alloy.

For all these applications, the excellent mechanical properties and high corrosion-resistance of Monel are important. They bring dependable protection from heat, sun, and dampness—from wind, rain and swirling sand. They mean long life and low maintenance expense.

And here’s another advantage! They make it possible to use reduced sheet thicknesses, which are more economical and lighter in weight.

Do your clients a lasting service—recommend Monel for roofs and roofing parts on their buildings!

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.
QUICK RESPONSE
another comfort and economy feature of Heating Equipment

fedders

CONVECTOR-RADIATORS
Made in a complete line of free standing and recessed models, combining handsome appearance, and uniform comfort. Easily installed in new or remodeling work.

WALL RADIATION
Available in a wide range of lengths with expanded mesh, flat and sloping top cabinets for residential, institutional, commercial and industrial applications.

BASEBOARD RADIATION
Features exclusive ANTI-STREAK COVER DESIGN which eliminates streaking of walls and draperies (patents pending).

UNIT HEATERS
Made in a complete line of horizontal and downblow models ranging from 100 EDR up. Widely used throughout industry for heating in winter and air circulation in summer.

for HOME, APARTMENT, BUSINESS, INDUSTRIAL AND INSTITUTIONAL USE

Men who know heating are welcoming the quick response of Fedders high efficiency fin and tube heating elements. They are component parts of Fedders Convector-Radiators, Wall-Radiation and Baseboard Radiation. They provide quick warm-up and reduce time lag with resulting even firing curve so necessary under today's critical requirements for fuel economy. Overheating in off-season months and forcing of fire in severe weather are reduced because Fedders modern radiation equipment...

WORKS HAND-IN-HAND WITH MODERN THERMOSTATIC CONTROLS

Handsome styling, space saving, light weight for easy handling combine to provide ideal installations for the ultimate in comfort. Fedders offers a complete line to fit household, commercial, institutional and industrial requirements.

Write for Bulletins

FEDDERS-QUIGAN CORPORATION
BUFFALO 7, NEW YORK

fedders-Quigan
One of a series of papers prepared by leading authorities on air conditioning. The opinions and methods presented in each instance are their own and are not necessarily endorsed by the manufacturers of "Freon."

AIR CONDITIONING

THE MODERN HABERDASHERY

by A. Urban Zimmermann

A. URBAN ZIMMERMANN—Mechanical Engineer—is a graduate of the University of Illinois. A member of his own firm—Zimmermann & Lukx, New York—he has supervised air conditioning several important stores and structures including Wallowachs (men's clothing) Brooklyn, Newark; White Plains, New York; the Great Lakes Carbon Building, offices of the Continental Can Company, and the Lehman Bank Building, all in New York; and various others.

It was over twenty years ago that a New York City firm operating a chain of men's furnishing stores first decided to invest in an air conditioning system. At the time, these stores operated with open doors during summer months, but this was an unsatisfactory practice at best.

The installed air conditioning system consisted of two suspended cooling and dehumidifying units, similar in design to unit heaters of that day. A water-cooled refrigeration condensing unit was also located in the basement of the structure.

One of these two units, without filters, was suspended at the rear of the conditioned area. This served to cool and dehumidify recirculated air. The second unit, with filters, was located in an enclosure over the entrance door, and this both cooled and dehumidified air taken from the display foyer. The intake of air assured an excess of pressure in the conditioned area and gave the air a tendency to flow out the door, minimizing influx of dust, dirt and insects. Although of simple design, this pioneer air conditioning system proved to be an exceptionally good investment.

It is naturally desirable that merchandise be displayed to best advantage in an orderly, neat and clean manner. Of course, arrangement of the stock and good lighting are essentials, but the introduction and recirculation of filtered air in the store is the most contributive factor toward maintaining the neatness and cleanliness of the merchandise.

Control of temperature and humidity in the conditioned area of the store reduces, or entirely eliminates, employee and customer perspiration. This materially lessens risk of damaging the stock in handling. It also minimizes the need for periodic cleaning, renovating or disposal of the merchandise at lower prices. Still another advantage accruing from the air conditioning system is the reduced amount of store interior redecorating required.

STIMULATES SALES

Because customers are naturally the most important consideration of any store owner, it stands to reason that every effort should be made to provide for their comfort at all times. The modern, air conditioned store attracts customers, encourages them to remain longer in the store and to be more favorably impressed with the merchandise offered. It definitely helps boost sales.

RECOMMENDED INTERIOR CONDITIONS

While the atmosphere maintained by air conditioning systems within stores will necessarily vary in different locations of the country, the chart, upper right, shows recommended interior summer conditions for stores in northern sections of the United States at sea level with outside design conditions of 93°F Dry Bulb and 75°F Wet Bulb.

Note that where customers remain for long periods in the store, both temperature and humidity should be lower than for transient occupancy.
The modern air conditioning system should also fit in other locations. Owners to install air conditioning in all sections of the
nation of units, and require no particular architectural
have a self-contained 2, 3, or 5-ton unit, or a combi­
with the architectural design of both the interior and
partments, window-display preparation rooms, and
store areas - basement, ground and upper floors - and
system should be predicated by: (1.)
stores may be substantially enhanced by installing con­
ing merchandise, and eliminates many basic factors that
contribute to fatigue and irritability, it should not be
confined to actual selling areas. It will readily repay
owners to install air conditioning in all sections of the
store, such as tailor shops, stock rooms, shipping de­
ments, window-display preparation rooms, and
other locations.

ARCHITECTURAL DESIGN
ALSO IMPORTANT
The modern air conditioning system should also fit in
with the architectural design of both the interior and
exterior of the individual store. Some small stores may
have a self-contained 2, 3, or 5-ton unit, or a combi­
nation of units, and require no particular architectural
treatment. However, many small and medium-sized
stores may be substantially enhanced by installing con­
closed self-contained units with disguised duct work for
air distribution, return, and make-up. Larger stores,
although sometimes handled by self-contained units, are
more often served by a central system with concealed
air distribution, return, and make-up air systems. While
it is desirable that component parts of the system har­
monize with the architectural design of the store proper,
correct distribution and introduction of air into the
area, as well as return air systems, must take prece­
dence. Wherever possible, however, design of all outlets
and return grilles should harmonize with the general
decorative scheme.

LOCATION OF EQUIPMENT
The main equipment room for the larger-type store may
be in the basement, on the top floor, or even on the
roof. Each location, of course, will involve its own spe­
cific construction problems. In some localities, a chilled
water circulating system may be required with air han­
dling units located on individual floors. Water-savers may
be needed for condensing units in the equipment room.

Introduction of outside air is also an individual prob­
lem, depending upon location of the air handling units
and where freshest, cleanest and most odorless air may
be obtained.

Fresh, outside air intake should always be sized for
100% of the total capacity of the air handling units.
This is so that fresh air, without refrigeration, can be
circulated within the structure when outside air con­
ditions are suitable.

IMPORTANCE OF SAFETY
Safety is a feature that should be carefully considered
in every installation. It is often found economical and
desirable to add some features that are not specified or
made mandatory by local laws governing the installa­
tion. These added features may include: duct smoke
and fire detectors; fire control switches; automatic fire
extinguishers; automatic duct fire dampers and so on.
Still another safety factor which most certainly should
not be overlooked is the selection of air conditioning
equipment designed to utilize "Freon" safe refrigerants.

Air conditioning the modern store has practically
become a "must." But there is ample evidence that it's
a profitable investment from the store owner's point of
view.Conditioned air not only insures the personal com­
fort of customers and employees, but also aids materi­
ally in maintaining high efficiency. . . . a definite con­
tribution toward more and bigger sales.

Because safety is obviously a factor of major importance in air
conditioning store structures, architects and consulting engi­
ners today unhesitatingly urge the installation of equipment
designed to use "Freon" refrigerants. These are safe . . . non­
toxic, nonflammable, nonexplosive and odorless. Pure as sci­
entific methods of production can make them, they help prolong
 economical operation of the system. That is why "Freon" re­
frigerants are so often written in specifications. E. I. du Pont
de Nemours & Co. (Inc.), "Kinetic" Chemicals Division,
Wilmington 98, Delaware.

"Freon" is Du Pont's registered trademark
for its fluorinated hydrocarbon refrigerants.

NOVEMBER 1950
When metal roofs and gutters expand and contract, due to temperature changes, this movement sets up stresses in the metal that correspond to the loading of a structural column. Unless the stiffness of the metal section is sufficient to transmit these stresses from the fixed end to an expansion joint, the metal will buckle, and where it repeatedly buckles, it will soon crack. Thus, one basic factor in non-ferrous sheet metal construction usually determines how long the installation can last... and this factor is the stiffness, or columnar rigidity, of each section.

**WHAT GOVERNS COLUMNAR RIGIDITY?**

The columnar rigidity of a sheet metal section is determined almost entirely by the shape of the section and the thickness of the metal. Studies have proved that such factors as tensile strength of the metal are either of no importance or of relatively minor importance in determining columnar rigidity of a sheet metal section.

The amount of stress which builds up in any section depends, of course, on the length of the section. Thus, when length and columnar rigidity are in balance, there will be no buckling of the metal and the installation will last indefinitely.

"**COPPER AND COMMON SENSE**"

Revere's manual of sheet copper construction, "Copper and Common Sense", describes in detail the research upon which the above statements are based. It is complete with charts, illustrations and detailed information so arranged that you can read and apply final figures that insure the finest sheet metal construction. "Copper and Common Sense" has been widely distributed to architects and sheet metal contractors, and there is probably a copy in your files. In addition, a Revere Technical Advisor will always be glad to consult with you without obligation.

*Copper and brass seldom cause premature failures in sheet copper construction. When failures do occur, 9 out of 10 of them are due to lack of balance between the length and columnar rigidity of the section.*

**COPPER AND BRASS INCORPORATED**

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

Sales Offices in Principal Cities, Distributors Everywhere
it's Famous...

ANOTHER FRANK ADAM INSTALLATION
—Famous-Barr Company's suburban branch department store in Clayton, Missouri.

in more ways than one!

This suburban store—a branch of Famous-Barr Company of St. Louis—is popularly known among local shoppers as "Famous." To architects and engineers, it is famous too for its ultra modern design.

Frank Adam Electric Company is proud of the part that its products are playing in this "famous" store. Three of its panelboards are providing needed light and power, including...

1️⃣ NITIC-4LD, a safety type panel with single pole tumbler switch and cartridge fuse circuits that are ideal for lighting and appliance branch circuits.

2️⃣ PULFUZSWITCH, a safety-type feeder, distribution panelboard, featuring a pull-out type switching unit with clamp type fuseholders, and

3️⃣ KLAMPSWITCHFUZ, another safety-type feeder panel of larger capacity, featuring a hinged type pull-out switching unit, with clamp-type fuseholders also.

This Famous store is just one of the many outstanding installations that are providing safe, dependable and long-lasting service. For further information, contact your nearest Frank Adam Representative (he's listed in Sweet's) or write for Bulletin.

Typical Pulfuzswitch Panelboard with 30 and 60 amp. branches installed in Famous-Barr's Clayton store.

Frank Adam Electric Co.
ST. LOUIS 13, MISSOURI

Makers of BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER
Look at the windows in this modern school building. See how bright and clear classrooms can be . . . how easy it is to have natural ventilation in virtually every type of weather. It's another Lupton Metal Window installation with all the advantages of modern window design plus economical installation. Lupton Metal Windows are precision-built at every point. Will not warp, swell or shrink—always easy to operate. Beautifully designed locking hardware allows finger-touch operation. Lupton Metal Windows are made in steel and in aluminum in sizes and designs particularly suitable for school building requirements. Write for our General Catalog or see it in Sweet's.

MICHAEL FLYNN MANUFACTURING CO.
700 East Godfrey Avenue, Philadelphia 24, Penna.
Member of the Metal Window Institute
Mengel Stabilized Solid-Core Flush Doors employ an entirely unique and exclusive principle to give you a new standard of stability and dependability — and at strictly competitive prices.

Instead of attempting the impossible task of preventing expansion and contraction in wood, Mengel has developed a construction design which absorbs expansion and contraction within the core itself. All Mengel core members are deeply slotted at frequent intervals, both with and across the grain. The result is that the slots expand or contract in width, but the door remains stable!

Get all the facts, and see a cutaway sample. When you see the difference, you'll greatly prefer Mengel Stabilized Solid-Core Doors!

Also see —
MENGEL HOLLOW-CORE FLUSH DOORS
the finest products of their type on the market.

FOR FULL DETAILS, PLEASE JUST WRITE
YOUR NAME AND ADDRESS IN MARGIN, AND MAIL TO —

Plywood Division • THE MENGEL CO. • Louisville 1, Kentucky
Structure Becomes Design
When You Work With
Douglas Fir Plywood

Typical of the simplification of approach possible with plywood is this striking Visitors Information Center of the Portland Chamber of Commerce.

Erected in the spring of 1948, this unusual, award-winning building takes full advantage of plywood's unique characteristics. The structural strength and rigidity of the panel material made possible a design both simple and effective—without unnecessary elements of either structure or design.

It is just one of many examples of Douglas fir plywood's contribution to a fresh, new architectural concept.
View looking down shows arbor-covered terrace and walled garden separating larger public block from the garden equipment building at lower left. Public areas consist of a lobby surrounding an information counter, two exhibit rooms, rest rooms. Staff areas provide a manager’s office, conference room, and an attendant’s office behind the information counter. The second story contains storage and work space.

The pleasing simplicity of design is carried inside, where smooth plywood walls offer dramatic contrast to the alternating-grain floor and ceiling treatment.

Large, Light, Strong
Real Wood Panels

DOUGLAS FIR PLYWOOD ASSOCIATION
Tacoma Building, Tacoma 2, Washington; 848 Daily News Bldg., Chicago 6, Illinois;
1232 Shoreham Bldg., Washington 5, D.C.; 500 Fifth Avenue, New York City, 18.
Greenwood Mills' newest plant combines efficiency with beauty. Stretching long and low over this tree-fringed Carolina plain, its 210,000 sq. ft. of roof area demanded a roof that would stand up under the hot Southern sun without drying out and cracking...one that would apply easily and smoothly over this broad expanse...a roof that would be rot-proof and enduring.

Yet, the choice was a simple operation. The architect selected a time-tested Ruberoid specification...time-tested, yes, but as modern as the functional design of the plant.

Ruberoid materials and specifications are well-supported by a background of more than a half a century of proven performance. The book shown here, "Ruberoid Bonded Built-Up Roofs and Flashings" is a complete technical reference on how to select and apply the right roof for every job.

If you don't have it, send for it.
BUILDING RESEARCH AND MODULAR COORDINATION ARE NEEDED NOW

The prospect that a substantial portion of our national productivity will be devoted to defense measures for several years to come makes the reduction of non-defense spending mandatory. In the budget-paring process, there will be a temptation to eliminate expenditures that will not produce tangible, or at least measurable, results from one fiscal year to another, especially where long-term benefits are not readily apparent. Building research may well appear to be in this category, and recent actions of Congress indicate that the research program of the Housing and Home Finance Agency will operate next year on a greatly reduced budget unless the importance of a continuing research program can be impressed upon the appropriations committees.

The National Defense Committee of the A. I. A. has taken the position that the present emergency calls for an intensification of the technical research program in housing, rather than a curtailment. Architectural Record concurs in this view. The probable extended duration of the defense emergency will not permit the country to construct stop-gap facilities on anything like the scale assumed during World War II. Victory in Korea will not "end the war," as it was hoped V-J Day would do. Whenever immediate, pressing, military demands will permit, we must coordinate emergency aspects of building with long-term considerations so as to conserve overall capital resources. Continuance of a housing research program contributes directly to this end.

A sound technical research program must include the study of procedures to facilitate application of research results to actual design and construction. To this end, efforts to promote the adoption of modular coordination throughout the building industry are a definite part of the program. Many architects have resisted use of the system in preparing plans because modular products are not universally available. On the other hand, many manufacturers have stated they will not convert to modular sizes until there is more demand for them by architects and engineers. Now is the time to break this circle and proceed toward realization of the building operation as an assembly process using dimensionally coordinated materials and equipment.

Necessity for conservation of our productive resources will not permit us to continue wasting materials by cutting and fitting on the job, when this waste can be so largely eliminated by modular dimensioning of plans and the use of modular products. Neither can we afford the wastage of labor necessary in wasting the materials.

The modular coordination concept is based on many years of sound research. Its acceptance has undoubtedly been hampered by the scientifically accurate but somewhat forbidding name. Nevertheless, the concept is not a complicated one, as the current educational campaign sponsored by the A. I. A., Producers' Council, N. A. H. B., and HHFA seeks to demonstrate. The articles on modular coordination which have appeared in Architectural Record over the past few months, as well as the Timesaver Standards in this issue, are also dedicated to this point of view, and to the belief that modular coordination offers an industry-wide basis for increasing the efficiency of building design and construction.
ART BUILDING, CARLETON COLLEGE

Boliou Hall, Carleton College, Northfield, Minn.

Magney, Tusler & Setter, Architects
An art building for a small college should be one of the pleasantest of commissions for architects, and that is what this one proved to be, for the architects enjoyed the full sympathy and understanding of their clients. As a result the building, though small, shows an unusual freedom both in plan and in expression.

The plan places the exhibition space as a connecting link between faculty offices and teaching studios, a deliberate reversal of the principle that a useful room should not be a traffic thoroughfare. Here professors, students and visitors are led past or through the exhibits, and the work gets far more attention than if isolated. The idea works especially well in connection with the large lecture room, which is used by other college classes than art; its doors open directly to the exhibit space, to lead other students through the exhibits. This little scheming by the designers has worked out well. In fact they got an extra dividend, in that students use the same room for lounging.

Fortunate also is the location of the building. It faces north, and overlooks a pleasing series of small lakes. This little chain forms a snug valley, the building set into a slope at the valley end and getting a handsome view along with the treasured north light. It's all very pleasant, even if not especially conducive to the more introverted expressions of experimental art.
Students seem able to resist the temptation to paint landscapes, even though the setting of Bolisou Hall abounds in natural beauty, with a chain of little lakes leading away to the north.
The art building is set into the side of a low hill. Its main entrance is at the top of the rise on the upper level. Lower level, with huge windows to the north light, has entirely different aspect.
To make "hanging" as easy as possible, a simple, tool-free system was designed. Pictures are hung on 4 by 4 ft or 4 by 8 ft hollow-core veneered sheets, framed in aluminum. Buttons on the ends of the frame are set into key slots in aluminum poles. Some of the poles stand in bases on the floor; others are screwed into metal cups in the ceiling. The longer pole becomes a pivot, about which the frames and standing poles can be swung around to any desired position.
In Los Angeles new office buildings are required to provide parking space for one car for each 1000 sq ft of office space, and occasionally the law has odd effects on building design. In this instance the lot was steep, so that the parking requirement dominated the development of the site: the parked cars occupy the first floor, the offices being pushed up to the second.

The building was erected for the occupancy of the U. S. Gypsum Company, but the developers retain the ownership.

Since the principal facade is to the north, large continuous steel casements, with fixed plate glass sections, were made up (in special sizes) to afford a maximum of natural light, but the two sides of the building are without windows and the rear fenestration was subdued because of the south exposure. Front of the building is red Roman brick, laid vertically on the lower portion and horizontally above. Acoustical tile ceilings with flush mounted continuous fixtures carry throughout the office space. Roof construction is a series of curved chord wood trusses, spanning the entire depth, so that partitioning can be placed with complete freedom.
In recent years architects planning office buildings have done much experimenting with sun and light control, fenestration, column arrangements, newer materials, not to mention styling. Here all of these things were considered and explored, but in the end two highly functional considerations led to conventional window openings and spacing. One was economy of first cost and maintenance; the other was flexibility for partitioning the space for offices. In this scheme, column spacing the long way of the building is 18 ft, and a nominal 16 ft in the other direction. Thus the space module is 9 ft, a good dimension for a minimum office with one window, air conditioning unit, and so on. All equipment and lighting is installed to keep this unit intact no matter what the partitioning layout, but it is still possible to put a partition any place between windows.

An earlier project for this narrow site had called for a 22-story building, but the analysis for this project showed that the most profitable development would be a 16-story building. This could be served by only four elevators, which could be grouped in a shallow core in the "dark" space at the property line. Bed rock being about 25 ft below the street, there was an advantage in providing two basements, to save further in the development of "rentable" space on a narrow lot.

The exterior on the three street sides is veneered with limestone; the stone on the narrow ends is the darkest Indiana limestone; that on the long side is the whitest. A stone band or frame around the wide front is a continuation of the darker stone. The walls are entirely flush, with no window sills or drips, since Dallas is remarkably clean, due to universal gas heating. The resulting simplicity of the stone work made the price quite favorable.

The stone veneer is protected by concealed expansion joints both vertically and horizontally, since experience with air conditioned buildings has demonstrated that
Extreme temperature differentials between outside wall and furring frequently result in strain cracks. Plaster furring and ceilings have been protected by metal beaded joints, to permit contraction and expansion and shearing of planes without unsightly diagonal cracks.

It is interesting to note that the increased stature of the life insurance company, by virtue of this building, has already been reflected in sales.
Seventeenth (penthouse) floor has offices for executives of the life insurance company. Unpartitioned office view, below, shows modular units of windows, air conditioner, lighting on 9-ft centers so that partitions can be put anywhere without alterations.
The busy trucking terminal shown above could be that of any major port in the world. Its facilities are grouped for maximum efficiency and for minimum interference with ordinary city traffic. Quite obviously, it is a part of modern city planning—but there is nothing about it to indicate that it serves the glamorous mid-Pacific city of Honolulu. In that respect it is a perfect example of contemporary architecture in Hawaii.

Hawaii’s architecture today is basically that of the continental United States. The mild climate, the magnificent scenery, and the difficulty of obtaining certain building materials all have their effect on design, but the planning itself is intrinsically the same.

This two-part study of architecture in the Islands has been prepared with the collaboration of the Hawaii Chapter of the American Institute of Architects. It has been planned to show as many and as varied examples as possible of the work of the Chapter’s 42 members. It is, quite simply, a panorama—a glimpse of what the profession is doing far out in the Pacific. Later issues of Architectural Record will present in detail some of the buildings shown sketchily here, and others omitted in this study because of space limitations.
THE Oahu Transport Company's new terminal was designed chiefly for the handling of pineapples and sugar. Covering more than 15 acres of reclaimed land, it provides warehouses, shops, offices, recreation and locker rooms, machine shop, service station, etc.

The office and locker buildings stretch across the front of the lot, with the main entrance to the terminal between them (center in photo below). Warehouses, and truck maintenance facilities are to the rear, adjoining the large truck and trailer parking area.
Foundation—Concrete
Framing—Steel
Exterior walls—Poured concrete
Interior walls—Exposed concrete, plaster and metal lath
Roof—5 ply built-up and gravel
Floors—Concrete, waxed
Ceilings—Exposed concrete

Large sign panel draws the visitor directly to main entrance of office building. Beyond it are personnel department, supervisors’ offices, and, at far end of building, overlooking entrance driveway, dispatcher's office. Below: the centrally located shop building
SITUATED about a mile from traffic-congested downtown Honolulu, this Medical Arts Building is occupied by 10 doctors, each a specialist in his own branch of medicine. Each has his own suite of offices, with direct access from the 45-car parking area at the rear. Four of the suites are on the first floor (plan opposite), and five are on the second floor. The x-ray suite, laboratories, and two minor operating rooms are on the basement level.

The building is painted a soft gray-green throughout except for the eave soffits and lanai ceilings, which are a dark blue-green. The elevator penthouse enclosure is of copper louvers. Cream colored veined marble faces the free-standing columns on the front and is used also on the solid walls enclosing the main stairwell. Interior walls and ceilings are painted in tans, greens and grays.
Building's real "front door" is at the rear, facing the parking area. Broad stairs and a cantilevered porte cochere mark it out and give it importance.
The Boysen Company's Honolulu building was planned not merely as a local outlet store, but as division headquarters for the Pacific trade. Provision had to be made, therefore, for easy space expansion as required. The solution was this one-story building consisting of five stores and a warehouse; three of the stores are "in reserve," and will be leased to other firms until such time as the owning company needs more space.

Foundation — Concrete piles
Framing — Reinforced concrete
Exterior walls — Sandstone
Interior walls — Plaster
Interior partitions — Hollow tile
Floors — Flagstone
ceilings — Concrete
Sash — Steel
Store fronts — Bronze
In appearance a two-story building, this Honolulu store has three selling levels and a total of about 200,000 ft of floor space. It was pushed a full story underground to keep it in scale with its contemporary neighbors.

Truck ramp and freight entrance are on the principal street front (left). Off-street parking areas can accommodate 500 cars.
ONE of the outstanding characteristics of Honolulu’s newer business buildings is the almost universal provision for off-street parking. Wherever possible, the parking area is accessible from two streets; almost invariably it serves as the main approach to the building it serves.

This office and store building on the fringe of the Waikiki business section was planned for rental. Like most of its contemporaries, it is two stories in height and fronts on a generous parking area. Shops occupy the lower floor, offices the upper. As is not uncommon in the Islands, there are no interior halls; each shop has its own entrance, and the office suites above are reached by stairs leading directly to the balcony corridor which connects them. The balcony extends out over the angled show windows of the shops to shield them from the sun’s glare; the balcony roof does a similar service for the office windows on the second floor. Louvers above and below the windows provide the essential air circulation.

To avoid the frequently displeasing effect of many-sized signs, the architects provided a sign strip running the full length of each level.
Foundation — Concrete
Framing — Concrete and wood
Exterior walls — Concrete and concrete block, painted
Interior walls — Plaster, painted
Roof — Built-up
Floors — Wood
Ceilings — Plaster
Sash — Wood
LOUNGE AND LOCKER BUILDING, PEARL HARBOR

Public Works Office, Navy Yard, Pearl Harbor, T. H.

J. B. A. Van Oort, Department Head Architect
Tom Litaker, Job Captain Architect

This Lounge and Locker Building in the Navy Yard at Pearl Harbor was designed and built during World War II as an annex to the existing Pearl Harbor Officers Club. Because of wartime material shortages, it is of all-wood construction, using as few critical materials as possible. Special features permitted by the climate include continuous fixed wood louvers (very popular in the Islands during the war because of blackout restrictions), screened openings and folding doors for the control of air circulation on the trade wind side.

Foundation — Concrete
Framing — Wood
Exterior walls — Wood, painted
Interior walls — Plywood, wiped
Roof — Built-up tar and gravel
Floors — Concrete (first); hardwood (second)

AUDITORIUM, JOHN H. WILSON PLAYGROUND

The roofline of this playground auditorium has a definitely Oriental air about it, but it was designed with sheer practicality in mind: its long, overhanging eaves give maximum protection from sun and rain.

The building is situated on a hillside overlooking the city of Honolulu, and is in the center of an area which is used entirely by Hawaiian homesteaders. It contains no windows whatever: wooden jalousies were used throughout to minimize destruction by the children and to give the maximum amount of light and ventilation.

Foundation — Concrete
Framing — Douglas Fir
Exterior walls — Redwood
Interior walls — Redwood
Roof — Wood shingles
Interior partitions — Redwood
Floors — Wood
Ceilings — Redwood
Ernest H. Hara, Architect
Yoshio Kunimoto, Structural Engineer

NOVEMBER 1950
THE site of this Episcopal church, in a poor district, is so small that the church proper comes to the property line at the front and within 5 ft of it at sides and rear. Entrance is through a garden to a lanai at the side of the nave. The altar is at the front.

Altar, pulpit, railings and pews are of hardwood, finished naturally with wax. Wood and obscure glass louvers in alternating patterns provide ventilation.

Architectural Record
IOLANI SCHOOL FACULTY HOUSING

R. E. Windisch, Architect

The two-story corridorless building popular in the Islands for business use is equally adaptable for residential purposes, as this faculty housing project for the Iolani School for Boys proves quite conclusively. The building contains 12 apartments, three of them two-bedroom "family" units. Each has its own lanai and its own individual entrance. Each also has a kitchen, complete with stainless steel sink, electric stove and refrigerator, and ample storage space.
Like most of the houses in the Islands, this one in Manoa Valley is simple in plan and designed to make the most of climate and view. Its steep site was used to good advantage in the placing of bedroom wing on a lower level to bring the view to every room in the house. Foundation is timber and hollow tile; framing is 2 by 4 studs; exterior walls are fir.

RESIDENCE OF MILDON A. PIETSCHMAN

Richard N. Dennis, Architect

The Pietschman residence, right, is one of the buildings to be presented in detail in a later issue of Architectural Record. It is of single-wall construction, on cement block foundation.
AINA HAINA HOUSING

Wailupe Valley, Oahu

One of the most interesting features of architecture in Hawaii today is the use of single-wall construction, a concept originally imported from Japan. Consisting of a unique method of hanging the walls from the roof (construction photos at right), it is ideal for the Islands where insulation against heat and cold is not required but protection from vermin is essential.

At Aina Haina, a large development in Wailupe Valley, 20 minutes from downtown Honolulu, the majority of the houses now being built are single-wall. Original plans for the project called for development of the entire valley and the construction of about 700 homes, architect-designed, and somewhat higher in cost, with lots of approximately 10,000 sq ft each. Development costs were higher than expected, however, and the project was abandoned after 175 houses had been built. It has since been reactivated on a limited basis, with lower-cost homes.

First step in single-wall construction, following laying of foundation, is erection of temporary bracing for roof.

Temporary bracing is removed once walls are completed, and house is ready for installation of sash.

Development started under direction of American Lumber Co., Ltd., Builder; Austin and Towill, Civil Engineering and Subdivision. Various architects designed the houses. Present operation is under the auspices of the recently formed Ernie Nowell Construction Co.
When roof is in place the house is ready for its walls, which are hung from it and anchored top and bottom.

Finished house is conventional in appearance, but is ideally suited to semi-tropical conditions of the Islands.

Among the 72 homes now under contract at Aina Haina some are of tile construction, also very popular in Hawaii. These, like the single-wall house at left, are lower in cost than the first buildings erected (page 130).

Right: Aina Haina market; R. E. Win-disch, Architect. When completed, the project is expected to have 19 stores, a theater, service station, school, church.
Aina Haina

Stock-plan House

Wimberly and Cook, Architects

Under the original scheme for Aina Haina the owners selected stock plans, drawn by various architects, and contracted for construction on an individual basis. The project was closed down before the effect of mass production savings could be fully realized.

The house shown here was one of those built under the original plan. It has many features typical of the Islands: louvers for ventilation, sliding glass doors leading to the lanai, and sun control devices forming an integral part of the design.
“In literature, I would say that style is the preoccupation of those who have nothing to say. Whether that is true of architecture I do not know.”

“Colonial Williamsburg’s small houses . . . not much different from those now being built . . . were practical, asymmetrical, full of corner cupboards and corner fireplaces, and had gadgets to help make the most of limited space.”

“During the past half-century, our progress in home sanitation, in heating and ventilation, in improved household equipment, has been revolutionary. In that same period, however, we have been retrogressing in space provisions to an almost equally phenomenal extent. Normal and happy and fruitful family life is possible without modern plumbing and deep-freeze equipment. It is not possible without a reasonable modicum of space.”

The authors of these statements, all highly respected individuals with more than superficial acquaintance with architecture, were not talking idly. Each was seriously making his own attack on today’s work. What is their justification?

If, forgetting that you’re an architect and taking a somewhat detached viewpoint, you can dispassionately examine an average, good, contemporary house — as a scientist might, for instance, examine a mole’s burrow to ascertain its habits and appearance — you can reach some ludicrous conclusions. Charles Agle, New York architect and member of the firm of Harrison, Ballard and Allen, did.

Let’s start with the American bathroom, conceded to be an index of the highest material standard of living ever achieved by man. Judging by the height of a lavatory, our dispassionate investigator could logically assume that the American adult stood $4 \frac{1}{2}$ ft tall; by the traditional position of the mirror, that the user’s physiognomy projected at least 14 in. beyond his torso. (How could he imagine the calisthenics, the balancing, involved in plucking an eyebrow or washing the last of the shaving soap out of one’s ears?) Then, turning to the toilet seat, he would find that set at a height ideally suited to the functions of an individual 7 ft tall. Again, the tub must be for a four-footer, unless — but this could never be! — the seven-footer were to wrap his knees about his ears. And, ah, yes! Since soap, water and smooth surfaces are almost lethally slippery, the four- or seven-footer must be shod with suction cups.

The laundry would disclose further contradictions. “A remarkably ingenious creature,” the scientist might murmur on beholding the automatic laundry machine. “Remarkably equipped, too; or perhaps only the female has the integral lift-truck, rubber-tired wheels and motor required to carry bulky sheets, heavy towels and dirty clothes so far. Yes, such a mechanically developed physique can be the only reason for locating the washer so far from the places where most laundry originates. We know from their factories that these beings understand the rudiments

1. C. Perrot, British journalist, speaking of twenty years at the press tables of the Architectural Association and the R. I. B. A., as quoted in the October 1950 Journal of the A. I. A.
2. Frederick Guthein, author, architectural editor and critic, in the N. Y. Herald Tribune, March 5, 1950.
3. C. E. A. Winslow, Chairman, Committee on the Hygiene of Housing, in the foreword to the Committee’s recent publicationPlanning the Home for Occupancy.
4. In recent articles in the N. Y. Times, and in an address before the N. Y. Chapter, A. I. A.
of efficient production flow." (Efficiency! Should houses be efficient?)

Viewing the streamlined kitchen counter with its built-in sink, and considering that its bottom, 8 in. below counter level, is the sink's working plane, the investigator would be justified in assuming the user to be fairly short, but with abnormally long arms. This assumption would be reinforced by the position and depth of the conventional base cabinet, and contradicted by the heights of counters and upper wall cabinets.

Ludicrous as these assumptions appear, they could all be made with reason. If, as so many architects believe, their profession is responsible at base for all or nearly all the improvements in equipment evident when today's house is compared to yesterday's, does not the fault lie with architects? To take one example, one hears architects stating that originally the architect demanded for the bathroom surfaces which could easily be cleaned, which would withstand moist atmosphere. American ingenuity and productive capacity have now provided him with ceramics, plastics, metals and glass in profuse variety. There is nothing wrong with these materials, nor with the ingenuity and industry which produce them. Yet in embracing them wholeheartedly architects, including many top-flight practitioners, produce what our insurance companies tell us is a prime source of injury and death — this in a home, which by implicit definition should be a safe haven.

No, it is not the material or the equipment, generally speaking, which is so much at fault; it is the manner of use in relation to the prevailing conditions. This holds even for equipment which is job-assembled or job-built, too. Every household needs storage space for cleaning materials; but why, in any modern house, must the cleaning closet, where are kept the dirtiest household impedimenta, be located in the kitchen where the food we eat is prepared? Why cannot the laundry be placed close to bedrooms and baths, perhaps with sewing and storage facilities directly at hand, to minimize this heaviest household chore?

House design is an endless series of problems in the organization of space and equipment, among other things. If we have accepted marvels of equipment without thoroughly investigating them, without thoroughly integrating them into the whole that the house should be, we have even further cramped the small spaces into which, we are reliably told, we now unwisely cram our domestic life. We have progressed little in understanding beyond the builders of Colonial Williamsburg's houses, which were designed by builders, not by architects.

One can carry this identical argument into other facets of house design. Take the matter of style, with which the opening quotation is concerned. The architect indolent enough to produce an unthought-out version of "Colonial" and label it a house is guilty not only because modern equipment, materials and techniques seldom do more than cramp his style; it is much more important that the routine of domestic life has changed, and his architectural solution hampers that. We do live outdoors much of the time. And with an appreciation of nature, the desire for verdure and blossom all year leads naturally to inclusion of space for growing plants within our houses. We do have automobiles, and the garage entrance of the house on the suburban fringe is fast supplanting the old-fashioned front door as an entrance. We have fewer servants, and the housewife does more — or all — of her own work. Our guests penetrate our kitchens to help mix cocktails.

Not that there isn't a place for the honest antiquarian; our true architectural past sadly needs preservation. It is the insincere copy which trades upon the snob appeal of romantically secure past glory that bothers. Also a bother, and equally snobbish when you come to think about it, is grotesque, slavish imitation of a Mondrian or a Picasso in architecture. The architect of a house need not strain to ape the cubist, for he was a cubist long before the painter appropriated his idiom. What is a room, a bookcase or a building but a series of problems in three-dimensional geometry?

— Frank G. Lopez
Facing page, eyebrow to keep high sun off a glass wall which both admits a fine view and provides a hazard for junior on his tricycle; far left, two-compartment bath; center, kitchen and dining space separated only by a cabinet half three by The Architects Collaborative. Right, modern version of the hob seat plus masonry with scarcely visible support (V. K. Thompson, Designer)

**HOUSE IN ANDOVER, MASSACHUSETTS**

*Bernard Kessler, Architect*
THE owners, a couple in middle years, live alone and entertain informally and in small groups composed principally of their children. They insisted on having their bedrooms off the ground; hence the placement of the house on the sloping site, with bedrooms five to eight feet above grade. The isolated bedroom with its own interior bath (artificially ventilated) is used for a servant or for guest quarters. The kitchen-dining area, quite unusual and yet extremely sensible for this informal household, is designed to permit husband and wife to share in preparing and serving family meals; both are good cooks. At the same time, a partial wall screens as much as possible of the work area, with its stacked pots, pans, dishes, etc. The ease with which after-meal mess can be closed off from the remainder of the house, and the simplicity with which such a compact space can be cleaned up, should be apparent. The same logic has been applied to the entire house, together with a not inconsiderable talent for assembling the required elements pleasantly. In harmony with its natural setting and thoroughly contemporary, this is a house in which it should be fun, not work, to live.
Beneath bedroom-living room end is, besides service space (theater, etc.), a large playroom where grandchildren can romp in poor weather while parents and grandparents visit on the first floor. Terrace, right, is shaded by a grape arbor which in winter, when leaves are fallen, admits plenty of sun to the living room. The deceptively simple landscaping both ties the house to its setting and opens to embrace a view, from the terrace, across a wooded valley.
The same materials, common brick and vertical cedar siding, are used inside and out, with addition of some plaster on interior walls and ceilings. Everything is thoroughly up-to-date: heating is radiant panel with copper tubing in ceilings; most lighting fixtures are indirect or recessed; there is much built-in furniture; the flat portions of the roof are designed to be flooded for roof-cooling in hot summer weather. As in most outlying houses, entrance through the garage is at least as important as the formal "front" door (photo above), which is almost hidden. It is noteworthy that traditional furnishings fit into the house well.
Despite the numerous refinements in this house, it is in spirit far from the modern showcase which so intrigues many architects. Rather, appropriate contemporary ideas and equipment have been adapted and blended in a way which neither denies that the occupants have roots, nor over-emphasizes them. The house, though it is no cottage, has domestic, human scale brought into sharp focus at the indoor barbecue (above) where the master can broil meat while his wife, with cooking muss out of sight around a corner, prepares the rest of the meal. That the house has also a friendly dignity is a compliment to both the owners and the architect.
THE owner, a college professor and single, had some definite requirements. She wished to house a small collection of Oriental painting and ceramics and a large library, to do a limited amount of craft work at home, and to retain the original character of the site, which is dotted with large toyon bushes and a few small oaks in clumps. The house was planned to fit between the clumps — none were destroyed — and grading was held to the absolute minimum. Inside, the house was freely organized; all the convenience of the usual room divisions was maintained, but there is not the conventional segregation of spaces. The designer exploited the program fully, adopting the butterfly roof which, less appropriately used, becomes an unassimilated cliche; here its justification is the view, which a flat or gabled roof would have cut off. The house has radiant heating in the floor slab, and has masonry wall areas of buff-colored concrete block, unpainted, between which are modular wood-framed walls.
Site, more than two acres on a knoll in the Saratoga foothills, offered excellent views in nearly all directions; hence the glazed walls. Shelves beneath nearly all windows provide for the owner's 2000 books. Terrace pool to attract birds; openings in footings permit water and fish to circulate between indoor and outdoor pools. The solid-walled area surrounding the hearth provides a retreat from the overpowering view.
Construction module is 3 ft 4 in. in both directions, to fit concrete block and provide 2 by 6 in. redwood mullions in frame walls at intervals close enough to avoid heavy lintels. Eating bar (below) separates kitchen from living space, can be closed off completely by rolling bamboo shade.
FULL utilization of the fairly steep site overlooking the Ohio River and city beyond, and ease of maintenance and housekeeping for a family consisting of the architect, his wife and two sons, were the design criteria here. Access to the site is from the upper level, so carport, entry walk and principal entrance are on the upper level along with bedrooms; living room, etc., are below.
Left, living-dining room, at ground level, has paving-brick floor extended outdoors. Though sliding walls are not screened, direction of prevailing breeze and an infrequent spraying with insecticide almost eliminate insects; the family's pleasure in easy outdoor-indoor access outweighs the nuisance of the occasional stray bug or dog. Above, second-floor entry

Like every detail of construction and finish of the house, planting is laid out for ease of upkeep.
Boys have two bedrooms which can be separated by a folding wall or thrown together. On upper floor, walls are striated plywood; on lower floor some stone, obtained from excavation, is used.
HEADMASTER'S HOUSE, COUNTRY DAY SCHOOL

Frederick Dunn, Architect

St. Louis, Missouri

John D. Falvey, Mechanical Engineer
William C. E. Becker, Structural Engineer

Its plan worked out within the foundation limits of an old and very fancy Colonial house which burned down, this house sits on a knoll on the grounds of the St. Louis Country Day School. Using the old foundations and basement reduced construction costs but complicated planning; hence the north-facing bedrooms and certain other features.
ST. LOUIS HOUSE

Center photo: large living room, from which the dining room is separated only by tall cabinets of curly birch plywood. Left, details of triple-hung sash and double glazing; right, details showing roof line following ceiling levels, which are lower in north rooms. At bottom: fireplace end of living room, and study

Of necessity, Headmaster and Mrs. Robert N. Cunningham's house is quite formal. In living and dining rooms the south wall is entirely glass; beneath the fixed glazing are hopper sash for ventilation, and set into the wall are three large triple-hung windows. These help maintain comfort in warm weather by providing a means for getting rid of warm air near the ceiling, which is ten feet high in these rooms for both proportion and comfort.

The house has brick bearing walls on concrete foundations. The exterior white lime facing brick is covered with cement paint, and the roof is built-up, surfaced with light-colored aggregate to reflect heat. Interior partitions are wood, with hard plaster finish throughout. Insulation is rock wool, 4 in. thick, and the house has an oil-fired air conditioner, rebuilt from the previous residence, which supplies a 4-zone duct system. Each zone has its independent controls. The house contains 3120 sq ft; total cost was approximately $42,000, or $1 per cu ft.
On a sloping site, one readily apparent economy is what we used to call "split-level" planning. The entry, halfway between main and second floors, is here kept quite open. In combination with the openness of the plan, and continuously glazed walls on the opposite—south—side, this provides perhaps the most striking first impression. Mrs. Grossi finds it a satisfying and permanent one, particularly in contrast to the confinement of the apartment in which the family previously lived. Though a more formal family might be disturbed by the fact that an entering visitor has an excellent view of the dinner table, this does not bother the Grossis...
When an architect designs his own house, he's somewhat on the spot; when he is Head of the Department of Architecture (as Mr. Grossi is at Pratt Institute in Brooklyn), the spot becomes most definite. It behooves him to make judicious use of new ideas, techniques and equipment; and since his budget is just as limited as any of his clients'—how many architects or teachers are wealthy?—he must economize wherever possible. In his house his family must be able to live a normal life, and yet it must be available for demonstration. How well has this house succeeded?
Openness and flexibility characterize this house; there is not even a pretense of a partition between living and dining spaces. A radiant heating system, designed in accordance with average practice and with copper tubing in the plaster ceilings, also contributes to flexibility. Research showed that the two-zoned system functioned well. Served by an oil-fired boiler, each zone has its own indoor thermostat. Cost precluded installation of clock thermostats and outdoor controls; it was found, consequently, that manual operation of thermostats was necessary or else, in winter, the house became too warm in mid-morning, too cool in early evening. Two criticisms: Supplies and return to upstairs zone pass through the exterior three feet of the kitchen ceiling, and when heat is needed downstairs, this ceiling is cold unless upstairs zone is also heating; and the living room coil length, 500 linear feet, made for unequal flow and a large temperature drop in this circuit’s water. Nevertheless, the system was found very economical — one year’s fuel cost for heat and hot water was $186 — and quite appropriate for a basementless house with so much glass. Upstairs temperatures were consistently two to three degrees higher than downstairs, probably due to convection; average temperature differential, floor to ceiling, was four degrees; the living room’s glass wall apparently induced mild air currents which were found very agreeable — and which reversed at night! — and as soon as the winter sun penetrated the interior the heating system did not need to function. From 10 to 4 the oil burner ran only for domestic hot water.
There are few interior doors; wall, floor and ceiling surfaces are natural and simple, and interest is obtained by the unobtrusive use of pleasantly light colors which are given substance by the contrasting solidity of natural masonry. Curiously, the family's three small children do not find it very satisfying to scribble on such natural surfaces, which simplifies one aspect of housekeeping. The kitchen has no doors, even on the passway to the living area. Mrs. Grossi finds that cooking on an electric range almost eliminates odors, and when something burns, the ventilating fan, installed so it really works, quickly expels smoke and smells.
The California climate practically dictates design for outdoor living, the architect tells us, and consequently the house turns its back on the street and its neighbors, facing toward an outdoor living area which it surrounds on three sides. Beyond, across the pool seen above, is an excellent view extending to the ocean.
The owner's family consists of husband and wife and a son of high-school age. They do not employ a resident maid and do not do their own laundry; so there is no maid's room and the laundry is small. Husband and wife have separate bedrooms. The son's room can be converted into a den or guest room. Since the family does not entertain elaborately the dining room was kept a nominal size. Mr. Zacho, an importer, required space for storing and displaying objets d'art; and space was provided in the garage for the son's hobbies.

The lot is large, but part of it is very steep and even the restricted usable building area, far from level, needed retaining walls at either side. This necessitated very economical planning. Fortunately the fine view of Los Angeles, beach towns, and ocean lay directly south. In this direction the house opens, away from the street, with floor-to-ceiling sliding doors. Deep overhangs here keep out the high, hot sun, but admit it early and late.

Construction is reasonably conventional, with 2 by 4 in. studs, fieldstone, redwood, and cement plaster on the exterior. Interiors are finished with plaster and striated plywood. Floors are oak, carpeted, with cork tile in Mr. Zacho's and his son's rooms.
Above, left, boy’s room or den; floor here is cork tile. Right, Mrs. Zacho’s bedroom has mirror wall with built-in dressing counter. Below, entry hall, with living room beyond.
Throughout Texas and other parts of the Southwest, house foundations frequently run into trouble. Certain clays in these areas shrink and then swell to such an extent with change of season—long periods of drought are followed by those of rain—that foundations of common construction, and of course the houses built on them, may easily be

*Professor of Civil Engineering and Associate Director of the Bureau of Engineering Research
wrecked by the tremendous swelling pressures developed. Shrinkages of soil from 35 to 240 per cent in volume and swelling pressures in excess of 30 tons per sq ft have been measured. When the forces of expanding clay move a foundation far enough, masonry walls and plaster crack, doors can’t be closed, floors become irregular and other similar troubles appear.

The problem of constructing an economical foundation that will be stable under all climatic conditions on such soils is now being studied by the University of Texas as part of the research of the Ceramic Homes Project.†

The foundation being investigated as a possible solution to this trouble consists of cellular tile, the idea being that if the expanding soil could push into the tile openings, the high pressures would not develop and the foundation would stay in place.

Five ceramic houses and a frame house were built in Austin, Texas to study foundations, and in addition to investigate heat flow through walls and roofs, natural cooling and space heating.

A site was selected on a clay typical of Texas (called “Eagle Ford Shale”) which has a volume change ranging from 63 to 146 per cent. The small photo on page 155 shows the surface cracking of the soil that developed during the summer months.

There are numerous areas where similar soils occur. Destructive movements of soil have been observed in Oklahoma, Kansas, western Canada and also in South Africa, Australia and Burma. Any highly colloidal clay combined with the right climate will behave like the Texas soil described.

The objects of the foundation research are to determine the pressures developed and the amount of movement of the houses with changes in soil moisture. Naturally we expect to determine whether or not the open tile foundation is satisfactory in the expansive clays, but in addition we want to find the amount of movement and pressure that must be considered in foundation design.

Test results discussed here are from a ceramic building (House No. 1) with an open tile foundation carried 6 ft below the natural soil, and a frame structure (House No. 5) on spot footings 3 ft below the soil. The drawing and lower photo on page 155 illustrates the details of the open tile foundation.

† When calculated as percentages of the dry volume.
†† Sponsored by the Acme Brick Co. and The Gates Co., with research under the supervision of the Bureau of Engineering Research, The University of Texas.

**Architectural Record**

---

Above: shows change in elevation (settlement) of various points around the open tile foundation of the all ceramic house, most of which is probably due to drying. The large amount of settlement and the differential movement did not cause any visible cracks. Below: shows the movement of a similar series of points on the frame house founded on spot footings. These being nearer the surface reflect considerable swelling in the soil (note the top curve) and demonstrate the unsuitability of spot footings.
The depth of tile foundations in the ceramic houses range from a minimum of 3 ft to over 8 ft in order to see whether or not the depth has any influence on movement of the structures. In no case were they carried below the line of seasonal moisture change.

Expansion of the “swelling” clays produces enormous pressures in both vertical and horizontal directions, although the ratio of vertical to horizontal pressure cannot be predicted at this time. However, it is known that if the soil is permitted to expand, the pressures developed are greatly reduced.

Vertical pressures under the foundation walls of the ceramic house were found to be from two to four times the horizontal pressures. Two possible causes for this are: (1) the walls were constructed on a 3 in. sand fill resting directly on natural soil, so there is no loose back-fill to be densified; (2) the bottom of the wall has no openings to relieve the pressure. We are now considering a wall with openings to permit vertical as well as lateral expansion of the soil.

Pressure gauges measured horizontal and vertical swelling pressures of the soil. One gauge was mounted in the center of a 3 ft sq steel plate fastened on the outer side of the tile footing. Pressures developed here were approximately twice those found when the soil was not restrained and could expand into the tile openings. Seven months after this foundation had been in place, the soil pressure against the steel plate was 9 psi or 1296 lb per sq ft. Just picture what this could do to a small house with ordinary foundation.

Wide trenches were used on both sides of the foundation of the ceramic house and these were back-filled with soil. To date much swelling pressure has been relieved by compaction of this back-fill.

It is interesting to note the large amount of settlement and differential movement that occurred with the ceramic house foundation (top figure, left page) with no visible cracks being observed.

With the frame house, the soil at one point became saturated and lifted the spot footing there almost 2 in. This showed up in irregular floors, and in this vicinity carpenters had to plane off the bottoms of the doors many times.

The expansion of the soil and consequent movement of the spot footings of the frame house show that they are not at all satisfactory for a clay soil that will swell considerably during a rainy season.

The two graphs on this page plot soil pressure readings for the all ceramic house. The one above gives pressures developed on the uphill side and the one below, downhill. The greatest horizontal pressures occurred on the uphill side, and also the readings at lower levels show greater pressures than those near the surface. The latter fact is probably due to densifying of the backfill near the surface. Note curve #15 above which shows pressures approximately twice those found when the soil was allowed to expand into clay tile openings. The bottom curves show vertical pressures developed under foundation walls which were from two to four times the horizontal pressures recorded.
In Part One of this article we have discussed a number of the problems in the control of hearing conditions in rooms. Design criteria for background noise, loudness, and distribution of sound were considered and here in Part Two we shall consider the fourth factor, reverberation.

Reverberation Criteria

Reverberation is the prolongation of sound after the source is stopped. A certain amount of reverberation is desirable in a room, particularly to contribute to the quality of singing tone — to add richness and fullness to musical sound. Also, the loudness of a sound increases somewhat as the reverberation increases, and a small amount of this increase can be very useful. Beyond certain limits, however, increased reverberation causes confusion through excessive overlapping of sounds with others that have not yet died out. In the case of speech this overlapping reduces the Percent Articulation in a manner that can be both predicted and measured (Part One of this article).

A quantitative rating of reverberation is given by the reverberation time \( T \), defined as the time, in seconds, for the sound level to drop 60 decibels. This can be measured in a room by various instruments, such as the graphic level recorder. A sample record is shown in Fig. 1, where the method of obtaining the value of \( T \) is indicated graphically.

Swiss broadcasting studio has hinged walls with curved plywood on one side to provide a “live” room for music (left) and perforated sound absorbent panels on the other side to make the room “dead” for speech. For example, the left panel in the rear wall (left) has been pulled in front of the door resulting in the flat wall surface as at right. Various combinations are possible.
Since, as we have noted, frequency characteristics are important, reverberation is measured at several different frequencies by using differently adjusted tones or by using a set of filters which pass just one range* of frequencies at a time.

The reverberation time measured in a completed room should be found to lie within an optimum range of values. Commonly accepted criteria for optimum $T$ are shown in Fig. 2. Different types of music and speech call for differences in $T$, and in all cases the optimum $T$ increases with the volume of the room. This increase is related to the above mentioned manner in which loudness increases with $T$. As the room gets larger the sound is spread more thinly and is thus reduced in level; this decrease can be partially compensated by letting the reverberation increase.

The proper frequency characteristic of $T$ is shown in Fig. 3. The shaded range allows for variations normally met in accepted practice, for minor refinements in frequency characteristic that may be desirable in special cases, and for some minor differences in the judgments of various specialists. Almost any room with reverberation values lying in or very near the optimum ranges shown in Figs. 2 and 3 will be satisfactory, if the other acoustic criteria are properly satisfied. No room that deviates widely from these reverberation values will have good hearing conditions.

### Reverberation Control

The reverberation time in a room is determined by the volume of the room and the total amount of sound absorption in the room, and the sound absorption in the room is determined by the characteristics of the finishes and furnishings. In a previous paragraph we have seen how we observe the reverberation time in an existing room. In many cases we wish to modify the reverberation time of a room, and in order to do this with some assurance of the final result, we must go through a certain amount of calculation on existing and projected conditions. More often we wish to design a new room for good hearing conditions without having to apply “corrective” measures after the room is completed. It is well to have some understanding, then, of how and to what degree the usual materials in a room absorb sound and how we can design a room to have ideal reverberation characteristics.

Sound is absorbed either by dissipating its energy in frictional drag in porous materials such as fabrics, carpeting, etc. or by inducing flexural vibration in wall panels, floors, etc. All materials absorb some sound, but for the hard massive materials such as concrete, we can neglect the absorption.

In porous materials (of importance in this connection are materials with interconnecting interstices of the order of .001 in.) the air particles which are set in motion by the sound arriving at the surface of the material encounter a certain frictional drag in moving in and out of the material and thus give up some of their energy in heat. This then decreases the energy in the reflected sound wave by as much as 90 per cent or more in many materials. The fraction of the incident energy which is absorbed (absorption coefficient) varies with frequency, depending on several physical properties of the material — thickness, porosity, etc. The absorption coefficient for most porous materials is smaller at the low frequencies and more or less uniform above some middle range frequency (see Fig. 4). In order to absorb

---

*Commonly called frequency band.

---

1. The reverberation time of a room is the number of seconds it takes, once a sound has ceased, for the sound level to drop 60 db. 2. Optimum reverberation times for various types of rooms; speech studios are a special case. 3. Reverberation time at any frequency on chart will generally be satisfactory if it falls within shaded area.
low frequency energy effectively (and this is important in listening rooms if we wish to avoid a "boomy" characteristic) we must use very thick sound absorbents, usually 4 in. or more in thickness. The effectiveness of many of the thinner materials can be increased by furring the material out from the firm backup and leaving a free air space behind.

Fortunately some finish materials furnish, by panel vibration, considerable absorption in the range where the porous materials are inefficient. The resonant frequencies of wood panels of usual size absorb sound energy only in narrow frequency bands. When a panel of any sort vibrates in resonance it takes energy from the impinging sound wave in the resonant frequency range and thus gives useful sound absorption. Some panels such as metals and many of the plastic materials have rather sharp resonances and of consequence absorb sound energy only in narrow frequency bands. Wood panels and other materials which give a dull thud rather than a musical "bong" when thumped, have broad resonance characteristics and absorb energy over a considerable and useful range of frequencies (see Fig. 4). It is important when we use panel absorption on rooms that we randomize the size of the panels so all will not absorb sound energy in the same frequency band, but rather have absorption over a wide range of low frequencies.

We thus have at our disposal for the control of reverberation in rooms and for the achievement of the characteristics specified in Figs. 2 and 3, two mechanisms, which fortunately supplement each other. For low frequency control we can employ panel absorption, and for control of the middle and high frequencies, porous materials.

**Calculating Reverberation Time**

In order now to compute the reverberation time of a room we must first determine its volume. This should be the total free volume, including recesses if they are not too deep. If there is a large stage, joined to an auditorium through a relatively restricted opening, for example, we would exclude the stage volume in calculating the reverberation time of the auditorium, but we should check the $T$ of the stage itself.

Next we must determine as accurately as possible the total amount of sound absorption present in the room. This involves a tabulation of all the surface areas, furnishings and occupants. These factors are usually easily determined for an existing room, but in proposed construction, one must make reasonable assumptions as to finishes and furnishings.

For most of the common materials used to finish rooms, the absorption coefficients are readily available in the technical literature. If, for example, we have 2900 sq ft of furled plaster in the room, we find in a listing of materials that furled plaster has an absorption coefficient of .06, we simply multiply 96 x 2900 = 120 units (sabins) of absorption.

(Continued on page 220)
YEAR'S OUTSTANDING STEEL BRIDGES

Jury appointed by the American Institute of Steel Construction to choose the most beautiful steel bridges opened to traffic in 1949. Left to right: T. R. Higgins, director of the Institute, Prof. Robert L. Lewis, Walter E. Jessup, Kenneth Franzheim, Eero Saarinen and Lawrence MacKinney.

Pinto Creek Bridge, Superior, Arizona, Class II (less than 400 ft, cost over $500,000) designed by Highway Dept.

Tenth St. Bridge, Atlanta, Ga., Class III (less than 400 ft, cost under $500,000) designed by Robert and Co., Assoc.

North Main St. High Level Bridge, Akron, O., Class I (span 400 ft or more) designed by Wilbur Watson Assoc.

Passaic River Bridge between Clifton and Rutherford, N. J., most beautiful movable bridge, designed by N. J. Highway Dept.

OFFICE BUILDING INNOVATIONS

Design of the Five-Fifty building, under construction in Miami, Fla., evolved directly from the special requirements of its occupants. It is a cooperative of 11 physicians, one medical laboratory, three law firms, and the architect, Robert Law Weed and Associates. Due to the large medical tenancy, more than the usual amount of plumbing was required. Thus the supporting columns were pulled back from the outside wall into the middle of the office space so that all columns would have soil and vent stacks up them.

The floors are flat plate construction. Slabs are flat on the bottom, making it possible to reduce materially the story heights. Since floors are cantilevered on all sides, the walls needed to be light. They consist of panels 8-ft wide, one story high and 4-in. thick, and are made of pumice concrete with a white cement, faced with a quartz aggregate. Panels sit on clip angles at the bottom and are held by two bolts on top.
Improved Classification System For 1951 Sweet’s File

The purpose of filing is to insure finding. Since product selection is based on comparison of competing products, the problem of classifying and indexing manufacturers’ catalogs is not an easy one to solve: it should enable the catalog file user to find any particular manufacturer’s catalog, or a catalog on any particular type of product, and to find catalogs of competing products adjacent to each other.

Research and experience in making manufacturers’ catalogs quickly and easily accessible for use have resulted in many improvements initiated and employed by Sweet’s Catalog Service Division of F. W. Dodge Corp. The latest improvement, the one to be employed by Sweet’s for its next series of catalog files, is a simplification of the method currently in use.

The file will consist of 33 major product sections. Within each of these major sections will be the logical subsections according to products or users of products. The manufacturers’ catalogs in each sub-section will be arranged in alphabetical sequence by manufacturers’ names.

The different symbol to be used for each manufacturer’s catalog will consist of three parts:
(1) The major section number followed by the sub-section letter. This number and this letter in each case will be above a line.
(2) Under the line will be, in a capital letter, the manufacturer’s initial letter, the second manufacturer in alphabetical sequence will have the first three letters of his name used to avoid duplication of the symbol within a particular sub-section; but this will rarely be necessary.

Functionally, a catalog file in a field of technical products corresponds roughly with a department store of consumer products. The departmentalization of products is for the same basic purpose as the sectionalization of a catalog file—to make product comparisons and selections as easy and as time-saving as possible. Each is a shopping center—a market place—an efficient means of getting buyers and sellers together—resulting in lower unit marketing costs and prices.

For the filing and finding of manufacturers’ catalogs which are not prefiled and distributed in Sweet’s File, architects may wish to file such catalogs alphabetically under the section number and sub-section letters so that the system used in an office for manufacturers’ catalogs received in individual form and those prefiled in Sweet’s are coordinated.

Reprints of this complete classification will be supplied to readers of Architectural Record without charge on request to: Sweet’s Catalog Service, 119 W. 40th St., New York 18, N. Y.

Metal Doors and Frames

VMP Architects & Builders’ Manual Data Sheets. Reviews a varied line of metal door and frame units. A great number of construction, installation and profile details are given. Tables list dimensions and catalog numbers of the units. Each door type is accompanied with application and specification notes. 38 pp., illus. Virginia Metal Products Corp., Orange, Va.*

Wood Window Sash


MANUFACTURERS’ LITERATURE
stock windows, sash and screens. The standard also contains specifications for casement, cellar, cupboard, hot bed, picture, porch, storm and barn or utility sash and transom windows. Both full window and half window screens are covered, as well as screens for one-light sash. Printed copies may be obtained for 15 cents per copy. Superintendent of Documents, Washington 25, D. C.

Furniture

Dunbar For Modern. Features the Dunbar line of furniture, with illustrations of many room settings. A brief history of modern furnishings is included, entitled "What Is Modern." Also illustrated are wallpapers, art reproductions, dinnerware and lamps suggested as appropriate for modern rooms.

Tile and Concrete Slabs

Combination Tile and Concrete Floor and Roof Slabs (Technical Notes On Brick and Tile Construction, Vol. 1, No. 8, Aug., 1950). This issue of the Structural Clay Products Institute monthly bulletin treats the use of hollow tile to reduce the weight of concrete slabs. A number of typical structural details are included.

Air Cooling Equipment

Spray Type Air Washers, Humidifiers and Dehumidifiers (Bulletin No. 7). Describes equipment for use on industrial and comfort cooling installations. Illustrations and specifications are given of the component parts. Details and size and weight tables are included for each type of machine.

Wood Trusses

Wood Frame Teco Trussed Rafters. Booklet discusses features of wooden roof trusses joined with Teco connecters. Sketches of appropriate truss shapes and photographs of typical installations are shown for churches, commercial and industrial buildings, homes, schools and apartments. Notes and details are also

given on special roof framing problems.

Fireproofing With Plaster

(1) Typical Fireproofing Details For Steel Columns; (2) Typical Fireproofing Details For Suspended Ceiling Under Non-combustible Construction. Folders give information on fireproofing with light-weight Perlmatite plaster. Each includes a detailed drawing and a short form specification of the construction.

Unit Heaters

National Unit Heaters For Horizontal Delivery and Down Flow Delivery (Catalog No. 575). Lists features and component parts of the heaters. Application and technical data are given, including: rating and capacity tables, steam and hot water conversion factors, dimension tables, and piping and wiring diagrams. Installation and maintenance instructions are also given.

Aluminum Venetian Blinds

Plastic Lume "400." Folder discusses features and qualities of plastic-enamel finished aluminum alloy blind slats. A specification data table gives notes on material and processing, finishing, forming, dimensions, weight and performance. A list of the colors available is also given.

Cabinet Showers

Weisway Cabinet Showers (Catalog No. 450). Presents several models of cabinet shower stalls, with descriptions and specifications. Color chips are included for finishes available. Typical plan layouts are given for new and remodeled houses. Accessories for the units, roughing-in dimensions, and construction and installation data are included along with many details.

Air Cleaner For the Home

Electronics Give You a New Key To Cleanliness In The Home (Booklet B-5136). Describes the features of the Preciptron electronic air cleaner for the home. Notes are included on the operation, construction and installation of the unit. A cutaway view and data on weight and dimensions are also included.

Awnings for Store Fronts

Astrup Awnings Equipment For Modern Store Front Construction. Bulletin gives descriptions of several types of awning equipment, including: awning fabrics, lid and awning operating mechanisms, equipment for aluminum roller awnings and operating gears. Details and sketches are given for many of the items. Photographs of typical installations and specifications are also included.

Surveying Instruments

Gurley Engineering Instruments (Catalog No. 50). Presents a line of engineering instruments for surveying and construction work, as well as for other fields. Among the items covered are transits, levels, alidades, plane table outfits, tripods, drawing boards and paper, current meters, plummets and hand levels. Each item is illustrated and described.

Light Dimmers

Radiostal and Audioschal Dimmers (Bulletin 76). Describes features, construction and operation of a line of dimmers for use in public and commercial lighting installations. Details and photographs are given of the component parts and mounting frameworks of the units. Wiring diagrams and tables of sizes and capacities are included also.

Fans and Blowers

Fans and Blowers By Moore (Catalog No. 5901). Contains design and rating data on pressure blowers and motors.

(Continued on page 246)
Cantilevered Concrete Slabs

A quickly erected, sturdy system of cantilever construction was said to have been effected at the new Trails End Court in St. Petersburg, Fla., by the use of hollow cast Flexicore concrete slabs. The architect was William B. Harvard, with John B. Dodd as Associate. Wings were designed with 16 ft wide rooms, flanked by 8 ft wide cantilevers on both sides. A 32 ft continuous slab was required. To achieve this, two 16 ft slabs were used. The slabs were supported near their centers on the outside walls. A 12 in. space was left between the ends of the slabs in the center of the room. In this space 12 by 10 in. steel reinforced beams were cast. Concrete, reinforced with ½ in. dowels, on 2 ft centers, was vibrated 18 in. into the Flexicore cores at the same time the beams were cast to form a solid roof structure. The slabs were left exposed for the ceilings. Roofs were insulated with up to 4 in. of vermiculite fill and weatherproofed with tar and gravel. Windstorm and fire insurance rates were said to be lowered considerably by this method of construction. The long-span concrete building slabs are pre-cast in 6 by 12 in. cross section, and in inch variations of length up to 22 ft 6 in. Price Brothers Co., 1932 E. Monument Ave., Dayton 1, Ohio.

Color Control For Lighting

A compact and simply operated new system, called Rollocolor, has been developed to produce lighting in any of 500 color shades or effects. Four colored light sources are used — red, blue, green and white. They may be used in a great variety of set-ups, such as strips, spots or floodlights, for displays, stages or decorative lighting of interiors.

The control unit itself is encased in a metal cabinet the size of a portable radio. A single control dial regulates light colors and intensities, which are predetermined and indicated on the panel. A supplementary motor, called a "Dynamic Control," may be used to operate the unit automatically through the entire color range, or for various time cycles. Imperceptible changes in color gradations are produced by varying the output voltage of the transformers to change intensities, and by the use of cam-operated micro-switches to cut in or out any of the four basic color circuits. Consolidated Edison Co., 4 Irving Place, New York, N. Y.

Plastic Paint

Corrosite plastic paint is claimed to protect against corrosion, rust, erosion and rot of wood, metal and masonry. Liquids, fumes and electrolytic action are said to have no effect on the paint. While particularly useful as a finish for industrial plants, machinery, structural steel, etc., the paint is equally applicable to such areas as chemical laboratories, kitchens or bathrooms.

The material consists of a series of unpigmented and pigmented coatings, composed of vinyl resins. These are blended with plasticizers and high boiling point solvents. The standard finish is semi-gloss, but it can also be supplied in flat. The liquid may be applied by brush, spray or dip methods, and dries in one hour. As a liquid, the substance is inflammable, but when dry is claimed not to support combustion. Eighteen standard colors are available, including black, clear, white and aluminum. Custom colors may also be matched. The Corrosite Corp., Chrysler Bldg., New York 17, N. Y.

Oil-Resistant Wire

A gasoline- and oil-resistant wire, called Geotrol, has been developed to eliminate the usual lead covering. This is said to give a considerable saving in cost, weight and installation time. It is designed for wiring in conduit to gas...
OVER AND OVER AND OVER AGAIN—that's the way Mills Metal Walls are used. They're made to keep pace with the constantly changing space requirements of modern business. They're as permanent and solid and beautiful as any walls you'd ever want around you but they can be moved—quickly, easily and at very low cost—to fit any new arrangement of space that progress dictates. The entire job can often be done overnight without interrupting business routine.

Dignified and refined in architectural design, they're available in a wide variety of attractive colors in baked-on finishes that keep their fresh new look with a minimum of maintenance. Exclusive features like all-welded panel construction, special treatment that eliminates harsh light reflection, and scientific soundproofing and insulation make Mills Movable Metal Walls the demonstrably superior system for flexible division of interior space.

SPECIFY "MILLS" FOR:

- All-Welded Panels
- Glareless Finishes
- Scientific Insulation and Soundproofing
- Easy Erection
- Maximum Mobility
- Superior Architectural Design

*A CASE IN POINT

Mills Walls, because of all-welded panel construction, need only a minimum of lines at panel joints to assure maximum mobility, precision erection.

For all the facts see Sweet's Architectural File or write for Mills Movable Metal Walls Catalog No. 50.
Stainless Steel
isn't new in Buildings
but this year it's NEWS

ARCHITECTURE has just taken a long, long step forward, with the advent of stainless steel "curtain wall" construction. Instead of the conventional masonry, this method employs insulated panels faced with stainless steel. Advantages? Dozens of them!

Here are a few. Stainless steel curtain walls 3” thick have insulating qualities superior to 12” of masonry. They give you more floor space, and they’re much lighter... you can put four stories on foundations designed for three floors in masonry. Construction is much easier and faster, materials handling and storage are vastly simplified, and you completely avoid cold-weather difficulties with mortar and cement. What's more, the stainless exterior requires little maintenance, no painting, won't wear off and can't wear out.

That's the kind of eye-opening job Allegheny Metal does everywhere it's used—in buildings, industrial equipment or armament. It's a highly essential material. We're continuing to spend millions to increase our production, and we offer every aid to users to make the supply go as far as possible.

Complete technical and fabricating data—engineering help, too—are yours for the asking from Allegheny Ludlum Steel Corporation, Pittsburgh, Pa. . . the nation's leading producer of stainless steel in all forms. Branch Offices are located in principal cities, coast to coast, and Warehouse Stocks of Allegheny Stainless Steel are carried by all Joseph T. Ryerson & Son, Inc. plants.

You can make it BETTER with Allegheny Metal

Architectural Record
MODULAR COORDINATION: 1
Prepared with the cooperation of Structural Clay Products Institute

The Modular Coordination project has long sought to reduce costs of construction through the sizing of building products so they will fit together without alteration on the job. For the architectural drafting room, this requires dimensioning of building plans so they are related to these standard product sizes. Many architects who have employed such a method have found that, on the first projects, the modular system required more drafting time than the conventional methods. However, with greater familiarity with the system, they found that drafting time was substantially reduced. Standard details can be repeated throughout a structure, and modular dimensions are very simple to check. Contractors who have constructed buildings from modular designs have reported both reductions in cost and construction time and improvement in quality.

This study is based on the A62 Guide For Modular Coordination, prepared under the direction of American Standards Assn., and sponsored by the A.I.A. and the Producers' Council, Inc. The system is based on a three-dimensional grid of 4 in. modules, and applies to the height, length and width of buildings. Non-modular sized items can be used, but a special detail must be worked out to relate the product to the grid system.

Properly placed, the section, elevation and plan fall in the same relative position with respect to grid lines; compare walls A and B (below left) with openings A and B (above and below). When all walls are not related to grid in same manner, as in C, many differences will occur between grid dimensions and actual dimensions, and must be identified on plans.

The three dimensional grid (above) applies in all directions
MODERN DOOR CONTROL BY LCN - CLOSERS CONCEALED IN HEAD FRAME

SHOWROOM OF THE PARAFFINE COMPANIES, INC., CHICAGO, ILLINOIS  Norlin R. Wolfe, Designer

THE PARAFFINE COMPANIES INC.

LCN CATALOG 11-E ON REQUEST OR SEE SWEET'S
LCN CLOSERS, INC., PRINCETON, ILLINOIS
MODULAR COORDINATION: 2
Prepared with the cooperation of Structural Clay Products Institute

dimensions to the 4 in. grid. The same detail can be repeated wherever the item appears in the project. Thicknesses of floor and walls need not adhere to the module, as long as some part is referenced to the grid.

The selection of grid locations for critical parts of the structure, such as walls and floors, is one of the first decisions to be made in the development of a modular design. Because of the three-dimensional nature of the grid, all subsequent details are affected by this selection (see details, Sheet 1). It is advantageous to center walls between grid lines, or on a grid line. The difference in such cases between grid dimensions and actual dimensions is a single constant. This simplifies estimating quantity take-off and the determination of the actual dimensions when they are needed. It often reduces the variety of lengths of framing members and other parts. When all walls are not related to the grid in the same manner, many differences must be identified on the plans.

In drafting practice, the grid itself need not be drawn on the plans. In preliminary work a grid may be used either on the drawings or under tracing paper. In the final drawings, a series of standard symbols may be employed to indicate the grid position. In the ASA System, points on grid lines are designated by an arrow, and points not on grid lines by a dot. For openings, the grid to which dimensions are referenced are identified by a half-arrow symbol.

Modular details are used to show the grid location of a part of the structure, and the assembly of materials. To correlate them with building layouts, each must maintain the same relative grid positions.

Modular Masonry Units
For the examples illustrated on Sheets 2 and 3, modular masonry is used to show how 4 in. planning flexibility can be achieved in modular layouts. The sizes of standard modular brick and tile are given in the following tables:

<table>
<thead>
<tr>
<th>STRUCTURAL CLAY BRICK</th>
<th>Nominal Sizes, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Size</td>
<td>Supplementary Sizes</td>
</tr>
<tr>
<td>Height</td>
<td>Length</td>
</tr>
<tr>
<td>2½</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
</tr>
</tbody>
</table>

The corner detail which starts the joint pattern determines the horizontal grid position of masonry units. A half bond is started with units equal to stretcher length when the stretcher width is half its length. Other sizes require a supplementary corner unit. Small closure units for tiles may be used as shown with 12 by 8 in. stretchers.
All too often, floors shrink to cause wide, unsightly cracks between floor and baseboard—cracks which catch dirt and provide excellent breeding places for insects and vermin. This defect can be avoided in new buildings by using open-web steel joists in the floor construction.

Bethlehem Open-Web Steel Joists are ideal for use in homes and light-occupancy structures because, when combined with concrete floor slab and plaster ceiling, they provide a type of floor construction which can't shrink. Floors built with these joists stay firm and true for the life of the structure.

Bethlehem Open-Web Joists are also non-combustible. They minimize vibration, and are immune to attack by vermin. They simplify construction work because pipes and wiring can be run through the open webs of the joists. They can also be used to good advantage in roof construction.

Let us send you our Folder 522-A, which shows scale detail drawings, condensed design tables, and condensed specifications for open-web joist construction. Ask the nearest Bethlehem sales office for a copy, or if you prefer, get in touch with us at Bethlehem, Pa.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation
MODULAR COORDINATION: 3
Prepared with the cooperation of Structural Clay Products Institute

<table>
<thead>
<tr>
<th>STRUCTURAL CLAY TILE</th>
<th>Nominal Sizes, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Size</td>
<td>Supplementary Sizes</td>
</tr>
<tr>
<td>Height</td>
<td>Length</td>
</tr>
<tr>
<td>5½</td>
<td>12</td>
</tr>
<tr>
<td>5½</td>
<td>6</td>
</tr>
<tr>
<td>5½</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>4</td>
</tr>
</tbody>
</table>

It is impractical for manufacturers to produce all of the sizes listed, particularly in a full range of textures and colors. Many of the nominal supplementary sizes* must be cut on the job, but some, as unglazed tile, are available in special "cutting units." Tiles require a special unit with finished ends for corners. Where 12 or 16 in. units are used, special lengths must be introduced to obtain 4 in. flexibility. Multiples of 6 or 8 in. maintain uniform wall patterns.

With the 2½ in. unit, grid lines coincide with horizontal mortar joints every 8 in., and a 4 in. supplementary unit is required to provide 4 in. flexibility, such as a 4 in. high rowlock header.

Horizontal layouts, including wall openings, involve only 2 and 4 in. multiple dimensions. Vertical nominal dimensions avoid fractions of inches except for the 2½ and 5⅛ in. course heights. Since 3rds of an inch are not given on the ordinary foot-rule, 3¾ in. is used for 3⅛ in., and 13⅓ in. for 3⅛ in. The inaccuracy is inconsequential, provided it is not cumulative. Simple rules may be used for determining the location of a grid line with respect to the masonry at any point. This simplifies the checking of course heights, particularly for lintels, where it is usually essential that the head of the opening coincide with a horizontal mortar joint. For example, with brick 2½ in. high, alternate grid lines coincide with mortar joints. Any grid line which is an even multiple of 4 in. from the reference line will have the same relative position; any grid line which is an odd multiple will have the alternate position.

A similar rule for use with the 5⅛ in. high unit is: a grid line which is an even multiple of 8 in. from the reference line will have the same relative position; other grid lines will have one of three alternate positions.
No Hammer...  
No Roar...  
No Rumble...  

Only ONE Moving Part

Stop Water-Waste... Cut Maintenance Costs  
with  
SPEAKMAN SELF-CLOSING METERING FIXTURES

5-4170 - Combination Push-Button Metering Lavatory Fixture. Permits washing in running tempered water.

5-4320 - Push-Button Metering Basin Faucet - for single or separate faucet installations.

These fixtures can be regulated to meter water volume from a "dash" to 1½ gals. per valve—non-hammering, non-dripping, non-clogging renewable unit.
K-9000-BSP SPEAKMAN SI-FLO QUIET OPERATING FLUSH VALVE. 1-inch capped angle stop for right or left supply inlet. Wall flange, metal oscillating handle, back syphon preventer flush connection, spud coupling nut and flange for 1\(\frac{1}{4}\)-inch top supply bowl.

**IN SPEAKMAN Si-Flo FLUSH VALVES**

SI-FLO—the original quiet operating flush valve—the valve that has made architects, engineers, plumbers and owners quiet-conscious in bathroom construction today. Three big advantages recommend Si-Flo for economical installation and long-service life in hotels, hospitals, schools, institutions, apartment houses and homes.

1. **SI-FLO whispers, never shouts.** Freedom from annoyance and embarrassment is assured when you specify Speakman Si-Flo. Even under supply pressures as high as 100 lbs. per square inch, it eliminates hammering, knocking, line throttling and closing noises. Si-Flo stays quiet.

2. **SI-FLO is easily installed.** Adjustable threaded connection between valve body and stop allows \(\frac{3}{8}\)" plus or minus \(\frac{3}{16}\)" overall adjustment) thus compensating for slight variations in regular roughing-in of 4\(\frac{3}{4}\) inches.

3. **SI-FLO is easy to service.** The compact, long-wearing piston unit—the trouble-free heart of the valve—contains all working parts. Replaceable in five minutes, it constitutes a complete repair of the valve.

There's a Si-Flo for every type of installation. For complete information send for our booklet S-4 or consult our general Catalog S-46. It will pay you to install Speakman—traditionally the best in brass—built for strenuous use and long service life.

---

**In Our Eighty-first Year**

SPEAKMAN

SHOWERS AND FIXTURES

SPEAKMAN COMPANY, WILMINGTON 99, DELAWARE
to seek further improvements; determination of structural performance standards for various types of wall and floor construction; determination of stiffness requirements for wood floors to effect economies consistent with livability requirements; determination of design criteria for more economical wood frame walls, with emphasis on structural requirements consistent with large window spaces; studies of flame spread and fire resistance values; determination of performance standards for mastic cements and adhesive used on floors, walls and ceilings to insure longer life and more satisfactory service; development of standards and specifications for low-cost flooring materials.

National Academy of Sciences (quasi-government) — survey of housing research facilities and personnel and of research activities under way and completed.

National Bureau of Standards — determination of performance standards for a variety of flashing materials; determination of standards for reinforced lightweight aggregates; determination of the effects of cleaning detergents on various paint vapor barriers; contribution to the development of standards for design and installation of household plumbing systems; determination of standards for small heating systems for use in small houses; adaptation of thermal conductance factors to conditions of practical use in houses; development of design criteria for chimneys used in small houses; development of technique for measurement of heat loss due to ventilation and infiltration, as an aid to design of heating systems.

Public Health Service — development of performance standards for individual sewage disposal systems.

U. S. Weather Bureau — measurement and evaluation of effects of snow loads on various types of roofs in various sections of the country.

Dr. Richard U. Ratcliff, who directs the housing research division of HHFA, said two considerations become central as his program functions in the changing economy: first, the conservation of manpower and materials in housing construction and operation; second, application of controls over housing credit and con-

(Continued on page 176)
Architects know that when "nothing but the best will do" they can with confidence specify Church MOLTEX® Seats. Molded under tons of pressure, their thick ever-lasting surface is practically indestructible; their gleaming beauty is at home in the finest surroundings.

For client satisfaction, perfect sanitation, lasting quality and cost-per-year-of-service economy, they are unequalled.
Crowded school conditions have you in "hot water"?

Because of its high standard of excellence and performance, the R-W DeLuxe fully automatic electric soundproof folding partition is now specified by leading School Architects and demanded by progressive Boards of Education as the best solution to current problems of space and expenditure.

In the installation shown above, both side-jams are insulated against the transmission of sound by the correct application of rubber gaskets. The clearance gap between the top of the doors and the underside of the ceiling-track is effectively sound-proofed by rubber seals. Duck-covered, sound insulated, acoustically designed doors provide the ultimate in "sound-stifling" construction. Doors are positively locked to the floor without the use of any floor bolts, tracks, or mechanically operated devices. Electrically operated—you just turn the switch-key and R-W does the rest. The DeLuxe FoldeR-Way Partition goes into motion smoothly and silently—opening or closing automatically!

Richards-Wilcox Classroom Wardrobes are outstandingly popular because they are designed to give maximum space for pupils' wraps without overcrowding—because simplicity of design and installation in wall recess means low cost. Wardrobes are available in Single or Multiple Action-Master Control Door units with chalkboards or cork boards. Each door opening accommodates eight to ten pupils.

Also... Uninterrupted R-W Service to HOME, INDUSTRY and FARM Since 1850

- In industry, conveyor systems to solve any overhead handling problem.
- In the home, R-W Silver Streak Vanishing Door Hangers and Aluminum Track afford quick, economical conversion to space-saving Disappearing Doors. Complete hardware for modern overhead garage doors.
- For the farm, turn door hardware up to any size, gable door fixtures, stay rollers, latches, etc., that perform up to par year after year.

Get all the facts about Richards-Wilcox cost-cutting, space-saving FoldeR-Way Partitions and Classroom Wardrobes now—write today or call your nearby branch office for complete information without obligation.
For 27 years Macomber engineers have worked toward an objective for Architects and Contractors.

This objective was the reduction of excess weight and the addition of structural strength in the design of the common load bearing members of a building.

The standardization of these structural components into CATALOGED items was of equal importance.

We do not speak of this source for advanced design practice in the solution of your daily needs as some monument we have erected.

No—it's only value is the extent to which you can use this specialized knowledge to realize a profit in today's close bids.

VISUALIZE your next project in Macomber products and—war permitting, Macomber will come through as scheduled—for one more satisfied builder. Write us.
offer 100% controllable draft-free ventilation

When opened slightly the SEALUXE-BROWNE Window makes a vertical flue. Fresh air comes in at bottom and foul air goes out at the top. No drafts. No wind-blown rain.

- eliminates "flying" window washer
- Both sides can be safely cleaned from the inside by a maid or porter.
- lasts indefinitely
- No metal-to-masonry contact. Resists tarnish, rust and corrosion.
- long, trouble-free life
- Folds at finger-tip pressure. Stays put regardless of wind pressure.
- shuts out weather and traffic noises
- Closes to a force fit against resilient wool felt weather-stripping.
- more light...greater beauty
- Streamlined to admit more light; set off any architectural treatment.
- design flexibility
- Choice of standard or custom in aluminum, stainless steel or bronze. With or without muntins; reversible mullions for any width partition; inside screens; crank operators; remote control operators; with or without stool, sills. Models include: Monumental, Residential, Underwriter-approved and escape-proof Psychiatric "windows without bars."

SEALUXE-Engineered Products are

OTHER SEALUXE PRODUCTS

WASHINGTON
(Continued from page 176)

to adopt the larger, basic code that was just issued. The State of Connecticut is reportedly considering adoption of both the basic and the abridged volumes. These would serve as statewide codes, the abridged version applying to all centers of less than 7500 population, and the larger code to all other cities.

These are the first codes to employ the nomenclature, definitions and classifications recommended by the Joint Committee on Unification of Building Codes. This group is under the chairmanship of W. E. Mallalieu, National Board of Fire Underwriters.

Hospital Plant Grows

The number of hospital construction projects approved under the Hill-Burton Act as administered by the U. S. Public Health Service reached 1432 on August 1. This volume of new construction and improvement to existing hospitals projected a future addition of 69,893 beds to the nation's institutional supply when this part of the work is completed.

In addition, construction of 262 new health centers has been approved by Public Health under the same program. The federal contribution to this vast volume of hospital building will run in the neighborhood of $358,753,800. The federal aid is extended to non-profit, city, county and state hospitals which could not afford to undertake the work if they had to pay full cost of the project. The Public Health contribution averages about one-third of the total estimated cost for all projects approved.

Of the 1432 jobs now listed, 196 hospitals were in operation as of August 1. Another 806 were under construction and 430 were in the initially approved category.

The heaviest volume continued to center in the southern states.

Shorts

- The Producers' Council predicted production of building materials and equipment would break all records during 1950. Except where work stoppages have interfered, output has continued on a high level since spring and early summer. The high rate of production can be (Continued on page 180)
"For clients who want the very best, I specify Carrara Glass!"

"...for I know that Carrara is an outstanding structural material. It has proved itself over the years as a high quality, versatile and adaptable product. Actually it gives the client more for his money..."

These are some of the reasons why leading American architects specify Carrara Glass to perpetuate their creative designs. Here is a product that is finely machined. It has a closely knit structure. It will not check, craze, fade, stain or discolor with age. And it is a permanent material, with a rich, flawless, brilliant surface. Precision manufactured, it is free from warpage. Its joints are true and even; there is no lippage. Carrara Glass is easily handled. It can be surface decorated for ornamental purposes. It is available in ten attractive colors and in a wide range of thicknesses.

Why not give your clients the very best in wall materials? Specify Carrara Structural Glass.

Architects: Richard Hawley Cutting Associates, Cleveland, Ohio.

Carrara Structural Glass

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

NOVEMBER 1950
GUTH FLUORESCENT FIXTURES

we're still countin'. Won't you help us?

Our line is so complete that there is nothing you can't lay out with it. Send for our NEW CONDENSED CATALOG 47-J. It lists commercial, institutional, and industrial luminaires—every one engineered for better lighting at lower cost.

THE RECORD REPORTS

WASHINGTON
(Continued from page 178)

maintained until supplies and requirements come into balance this fall, said Charles Mortensen, P.C.'s managing director.

- President Truman signed the bill extending for another five years the period for allocation and expenditure of funds under the Federal Airport program. The authorization now extends to June 30, 1958. The purpose was to permit long-range planning necessary for the design and construction of new airports and expansion of existing airfields. D. W. Rentzel, former Civil Aeronautics Administrator, said the agency has been able to fix the present and ultimate airport requirements for all communities that have or are likely to have scheduled air carrier service by 1955. It now is possible to program intelligently and with a certainty that there will be no economic waste, the available federal-aid funds for airport development, he said.

- The new U. S. Civil Defense plan uncorked by the White House had this to say on engineering services:

  Before attack, the engineering services will set up precautionary measures to safeguard water, gas, electricity and food supplies. The service will assist in the shelter program, help to train and equip the rescue forces, and control passive defense measures such as black-out and camouflagé. After attack, the engineering service would restore emergency utility service, clear rubble, handle demolition for the fire service and aid the rescue service where heavy equipment is needed.

- George J. Bott, a Marylander, was appointed general counsel of the National Labor Relations Board, succeeding Robert N. Denham, eased out of office by President Truman because of his longstanding conflict with the labor board in administration of the Taft-Hartley Act. Fire from Capitol Hill immediately following the Denham dismissal was inevitable. Said Rep. Gossett (D-Tex.), "Apparently the Taft-Hartley Act is now to be misconstrued and emasculated, or wholly ignored." Bott said he

(Continued on page 184)
There seemingly is no limit to the useful applications for Republic ENDURO Stainless Steel in architectural design, in building construction.

Here you see it used for flashing between floors of a famous building. You probably have seen it used, too, for mullions and spandrels, windows, curtain wall panels, entrance doors, stair railing, elevators, roof drainage materials, spires, marquees and countless other component parts of a building.

That's because ENDURO is so versatile... because it gives the designer a vast medium for expressing his ideas... because it gives the engineer a sound construction material.

ENDURO ranges in finish all the way from a soft, satiny lustre to the brightness of a polished mirror. It may be used both for harmonizing and contrasting effect. It cleans easily. It is sanitary. Its striking beauty lasts indefinitely.

Functionally, it is tough and strong — with a high strength-to-weight ratio that permits safe use in thin sections. It resists rust and corrosion. It is equally strong at elevated or sub-zero temperatures. It cuts maintenance and replacement costs to lowest levels.

ENDURO is easily obtainable — readily workable. Distributors carry stocks and competent fabricators are located in principal cities.

Now, wouldn't you like to know more about this "magic metal" and the ideas it may bring to you? See Sweet's—or write us.

---

RUST-RESISTANT • CORROSION-RESISTANT • HEAT-RESISTANT • ATTRACTIVE • SANITARY • EASY TO CLEAN
EASY TO FABRICATE • STRONG • LONG-LASTING • LOW IN END COST • What more can be desired in a material?

REPUBLIC STEEL CORPORATION - Alloy Steel Division, Massillon, Ohio • GENERAL OFFICES, CLEVELAND 1, OHIO

Export Department: Chrysler Building, New York 17, N. Y.
DRAVO HEATERS...

AS WELL AS MONEY....FUEL...

Heating system steel needs can be slashed from 50% to 70% for the representative open-space industrial structure shown below... by using the direct-fired warm air heating method with Dravo "Counterflo" Heaters! This conservation, of vital importance today, adds another to the long list of economies in money, fuel and labor effected by this heating method.

The chart below gives the detailed comparative story. Every system is equivalent in Btu output. Steel requirements for the 13 methods have been carefully and conservatively calculated.

It will be noted that Dravo Heaters not only take LESS steel in each fuel classification... but that the HIGHEST steel requirement in a Dravo installation is almost 50% less than the LOWEST steel requirement in any other system. Of special significance is the contrast in pipe required. Jobs now held up by slow pipe deliveries can MOVE... if Dravo Heaters are used!

Any time that YOUR jobs are delayed or deferred because of steel or pipe shortages, why not find out how Dravo "Counterflo" Heaters are expediting things for other users? And remember — steel savings are just one of the reasons that more and more Dravo "Counterflo" Heaters are heating increasing numbers and types of structures. You'll find many other good reasons listed at right, that will appeal to you.

Each heating system compared below was sized to make up a calculated 12,000,000 Btu heat loss in this representative industrial building.

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>DRAMO WARM AIR</th>
<th>HIGH PRESSURE CONVENTIONAL WATER TUBE BOILER</th>
<th>HIGH PRESSURE PACKAGED STEAM GENERATOR</th>
<th>LOW PRESSURE CONVENTIONAL WATER TUBE BOILER</th>
<th>LOW PRESSURE PACKAGED STEAM GENERATOR</th>
<th>DRAMO WARM AIR</th>
<th>HIGH PRESSURE CONVENTIONAL WATER TUBE BOILER</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASIC HEAT GENERATORS</td>
<td>26,400</td>
<td>38,000</td>
<td>62,000</td>
<td>38,000</td>
<td>62,000</td>
<td>26,400</td>
<td>38,000</td>
</tr>
<tr>
<td>PIPING—Oil—Steam Boiler Room—Gas</td>
<td>9,096</td>
<td>15,490</td>
<td>15,490</td>
<td>35,308</td>
<td>35,308</td>
<td>4,352</td>
<td>15,790</td>
</tr>
<tr>
<td>TANKS—Oil—Blow-off Condensate</td>
<td>3,500</td>
<td>1,500</td>
<td>1,500</td>
<td>1,500</td>
<td>1,500</td>
<td>13,000</td>
<td>16,500</td>
</tr>
<tr>
<td>UNIT HEATERS including Traps &amp; Starters</td>
<td>21,240</td>
<td>21,240</td>
<td>21,240</td>
<td>21,240</td>
<td>21,240</td>
<td>21,240</td>
<td>21,240</td>
</tr>
<tr>
<td>STACKS &amp; BREECHING</td>
<td>1,200</td>
<td>4,000</td>
<td>400</td>
<td>4,000</td>
<td>400</td>
<td>1,200</td>
<td>4,000</td>
</tr>
<tr>
<td>PUMPS—Fuel Oil Auxiliary Oil—Boiler Feed</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>400</td>
<td>1,400</td>
</tr>
<tr>
<td>STOKERS &amp; FANS including Dust Collectors Fuel Oil Preheaters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRUCTURAL STEEL Boiler House Foundation Reinforcing</td>
<td>7,000</td>
<td>2,000</td>
<td>7,000</td>
<td></td>
<td></td>
<td>7,000</td>
<td></td>
</tr>
<tr>
<td>TONS of STEEL REQUIRED</td>
<td>DRAMO 18</td>
<td>45</td>
<td>52</td>
<td>54</td>
<td>61</td>
<td>DRAMO 23</td>
<td>53</td>
</tr>
</tbody>
</table>

ARCHITECTURAL RECORD
CONSERVE STEEL . AND MAN HOURS

DISTRIBUTION PIPING AND DIFFUSERS COMPLETELY ELIMINATED

LEAST STEEL PER 1,000,000 BTU OUTPUT

NO VALVES, TRAPS OR FITTINGS

STAINLESS STEEL CHAMBER ELIMINATES REPLACEMENT

DRAVO CORPORATION
HEATING DEPT., DRAVO BUILDING, PITTSBURGH 22, PA.
Sales Representatives in Principal Cities.
Mfd. and Sold in Canada by Marine Industries, Ltd., Sorel, Quebec.

WITH IDENTICAL 12,000,000 Btu LOAD

<table>
<thead>
<tr>
<th>FIRED</th>
<th>COAL FIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HIGH PRESSURE CONVENTIONAL STEAM GENERATOR</td>
</tr>
<tr>
<td>62,000</td>
<td>38,000</td>
</tr>
<tr>
<td>15,790</td>
<td>35,608</td>
</tr>
<tr>
<td>14,500</td>
<td>14,500</td>
</tr>
<tr>
<td>21,240</td>
<td>21,240</td>
</tr>
<tr>
<td>400</td>
<td>4,000</td>
</tr>
<tr>
<td>1,000</td>
<td>1,400</td>
</tr>
<tr>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>7,000</td>
<td>7,000</td>
</tr>
</tbody>
</table>

58 62 67 DRAVO 26 52 61

DRAVO HEATERS HAVE EARNED HIGHEST ACCEPTANCE BECAUSE THEY

- use less steel
- eliminate distribution piping
- have lower initial cost
- are very efficient in fuel consumption
- concentrate comfort heat at the working level
- reduce roof heat losses
- burn gas or oil
- are available in coal burning models
- save man hours through automatic operation
- require no attendant and negligible maintenance
- produce heat instantly and ONLY when needed
- have stainless steel chambers for longer life
- prevent rust and stain conditions in metal storage
- bear UL label and AGA approval
- require only stack, fuel and power line
- are portable and readily moved
- provide year 'round ventilation
- are ideal for process drying
- avoid freeze up worries, leaky traps, valves, etc.
- are shipped complete and flame tested
- can be installed on floor, wall or roof
- can be mounted upside down or horizontally
- eliminate ductwork with 150 ft. air throw

WRITE TODAY FOR BULLETIN HI—23-8

NOVEMBER 1950
THE RECORD REPORTS

expected to get along fine with the five-man labor tribunal.

- The Associated General Contractors of America reiterated the assurance that the construction industry has ample capacity to carry out all defense construction with maximum speed and efficiency. As a result of the stimulus of the greatest peacetime program in history, forces are available and mobilized for carrying on the present program and for immediate defense work, the governing and advisory boards stated. For World War II the industry completed projects valued at more than $49 billion. . . . Glenway W. Maxon, Dayton, Ohio, 1950 vice president of A.G.C., has been nominated for president in 1951, succeeding Walter L. Couse, Detroit.

DON'T SPOIL YOUR BUILDING BEAUTY

Plan to Hide
Cooling Towers and
Evaporative Condensers
Indoors . . . Specify
Compact Marlo Units

Other Marlo Advantages:

QUIETER OPERATION — Marlo Units feature resilient-mounted motors and pumps, plus mastic-coated interior surfaces that deaden sound.

TOP WATER SAVINGS — Through efficient recycle cooling, Marlo Evaporative Condensers and Cooling Towers save up to 95% of normal cooling water demand.

LONGER LIFE — Marlo Units are protected four ways against corrosion—with hot dip galvanizing, rust-inhibiting paint, asbestos-asphalt interior coatings, and the exclusive Marlo "Lektro-Tektor."

Write for full details for "roughing in" for your specific requirements.

(Continued from page 180)

ON THE CALENDAR

Nov. 2–4: Annual Convention of the New York State Association of Architects — Hotel Syracuse, Syracuse, N. Y.


Nov. 8, 15, 22 and 29, Dec. 6 and 13: Last six of ten conferences, Forum for Modern Living, sponsored by the Architectural League of New York. Nov. 8 — Is Furniture Functional or Decorative; Nov. 15 — The Architect and Industrial Designer; Nov. 22 — New Textiles and Wall Coverings; Nov. 29 — Planting and Modern Design; Dec. 6 — Lighting and Color in the Home; Dec. 13 — Widening Horizons. All conferences are scheduled from 8:30 to 10:00 p.m. — The Architectural League, 115 E. 40th St., New York City.


Nov. 12–19: 43rd Annual Convention, National Association of Real Estate Boards, and First Annual National Realtors’ Exhibition — Municipal Auditorium, Miami Beach, Fla.


Dec. 1–2: Great Lakes Regional Seminar, the American Institute of Architects — Oliver Hotel, South Bend, Ind.


(Continued on page 186)
Here's a real "mechanic's garage"
radiant heating with National Steel Pipe assures
warm floors . . . maximum comfort . . . at low cost

- The Kuykendall Chevrolet Company garage, in Lubbock, Texas, is skillfully designed with two important things in mind: High efficiency, for low operating cost; and maximum comfort, for higher worker output.

You can't beat radiant heating for attaining such results. It provides warm floors and uniform, comfortable temperatures throughout—ideal for garage work. Radiant heating eliminates above-floor heating units and makes the entire working area available. There are no obstructions, no hot spots, no cold areas or damp floors to handicap operations. These advantages have lead to the increasing use of radiant heating in modern garage construction.

Steel pipe is unequalled for radiant heating installations. It's strong and ductile for easy bending. It's ideal for making welded joints. And steel pipe is so strong that it's hard to damage during installation. Best of all: it's durable in service and economical to use. When you buy National Steel Pipe, you're buying the same reliable steel pipe that has been the standard for conventional heating for more than sixty years.

If you are planning a radiant heating installation in a garage, store, terminal, factory, warehouse or plant, be sure to get all the advantages of using National—world's largest selling pipe.


NATIONAL TUBE COMPANY, PITTSBURGH, PA.
COLUMBIA STEEL COMPANY, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

NATIONAL Steel PIPE
UNITED STATES STEEL

NOVEMBER 1950 185
THE RECORD REPORTS

OFFICE NOTES

- Harold E. Diamond, A.I.A., announces the opening of his office for the practice of architecture at 150 Bay St., Staten Island 1, N. Y.
- John W. Harris Associates, Inc., builders with headquarters in New York, have reopened offices in Paris to offer technical assistance and building management services to organizations interested in obtaining American construction experience for their building projects.
- Edgar Tafel, A.I.A., announces the removal of his architectural office to 14 E. 11th St., New York 3, N. Y.
- Stone and Webster Engineering Corp. announces the formation of a Canadian subsidiary, Stone & Webster Canada Ltd. The Canadian company, with present offices at 50 King St. W., Toronto, Ont., has Alfred T. Krook as president. Mr. Krook was formerly district manager of the Stone & Webster Engineering Corp. for the Southwestern area, with headquarters in Houston, Tex. John W. McKee of Toronto is chairman of the Board of Directors.
- Arnold A. Weitzman, Architect and Engineer, has moved his offices to 508 Hammond Bldg., Detroit 26, Mich.
- The office of Robert McKean, Industrial Design, has new headquarters at 32 E. 57th St., New York 22, N. Y.

ELECTIONS

- Ralph Walker of New York, president of the American Institute of Architects, has been named chairman of the Subcommittee on Construction Mobilization recently organized by construction industry leaders to cooperate with the federal government on national security problems in the field. Another subcommittee, on Construction Credit, is headed by Francis G. Addison Jr. of Washington, president of Security Savings and Commercial Bank. Both groups are subcommittees of the Construction-Civic Development Committee of the Chamber of Commerce of the United States, of which Norman P. Mason of North Chelmsford, Mass., is chairman.
- Officers of the Architects' Association of Illinois elected at the recent quarterly meeting are: Edward A. Kane (Southern Illinois Chapter), president; John R. Fugard Jr. (Chicago Chapter), vice president; Edgar E. Lundeen (Central Illinois Chapter), secretary-treasurer.
- Representing the American Institute of Architects at the International Union of Architects in Paris October 2 were President Ralph Walker and Ernest A. Grunsfeld of Chicago.
- Hugh M. Hughes, president of the Building Trades Employers Association of New York City, has named Perry S. Dewey, third vice president, as chairman of the committee to arrange for the 55th annual meeting of the Building Industry Employers of New York State.

ARCHITECTURAL RECORD
For Perfect Alignment, Safety and Low Cost USE UNISTRUT

The Completely Modern Method of Supporting Fluorescent Fixtures!

Unistrut assures perfect alignment, requires fewer hanger stems and canopies, is completely adjustable, saves installation time, gives added safety and improved appearance. Unistrut is fully tested and proved by contractors on thousands of installations demanding the finest in lighting.

Free Copy of Unistrut Bulletin!

Prompt Delivery from Warehouse Stocks in Principal Cities—consult your Telephone Directories

UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd. • CHICAGO 7, ILLINOIS

Unistrut Channel with Grooves
Unistrut Nut
Unistrut Flange Nut

1. INSERT SPRING NUT NARROW ARM INTERNAL GROOVE OF UNISTRUT
2. SUPPORT DIY ONCE UNISTRUT IS LOCKED DOWN INTO SPRING NUT
3. INSERT SPRING NUT ANY WAY AND SUPPORT CHANNEL
4. SPRING NUT IS TIGHTENED ON CHANNEL

UNISTRUT PRODUCTS COMPANY
Please send me your Fluorescent Fixture Support Bulletin No. FF-3, without obligation.

Name: ____________________________
Company: _______________________
Address: _________________________
City: _______ Zone ______ State: ______

NOVEMBER 1950 187
IF YOU WANT THIS

The modern functional school is characterized by trim lines and concise design... a low chimney.

INSTEAD OF THIS

Conventional types of horizontal, return-flue or tube boilers require tall, long-draft chimneys out of keeping with building style.

WITHOUT THIS

Complicated controls and noise of operation are necessary adjuncts when a “package unit” boiler is used with a low chimney.

USE THIS

H. B. Smith low-draft cast iron boilers meet all heating requirements without tall chimneys or extra controls. This installation is in a Connecticut school.

Minimum draft resistance is assured in the design of H. B. Smith boilers. The hot gases rise between the gray iron vertical water tubes before passing into the side flues. Maximum heat is transferred from the gases to the water in the tubes.

Boilers of the return-flue, or long-fire-tube type, require stronger draft — call for tall chimneys or mechanical draft with elaborate controls... none of which are needed with H. B. Smith low-draft boilers.

Result? Low chimneys and freedom from noise, vibration or the danger of draft-control instrument failure. Add space saving, extra long life, economy of operation, low maintenance costs—and sectional construction features that permit the boiler to grow with the need — and you see why architects, engineers and contractors recommend H. B. Smith Boilers with full confidence.

H. B. Smith
CAST IRON BOILERS
THE H. B. SMITH CO. INC., WESTFIELD, MASS.
Most complete line in the world of cast iron boilers for heating

THE RECORD REPORTS

(Continued from page 186)

The meeting is scheduled Dec. 14–16 in the BTEA clubrooms, 2 Park Ave.

• Paul Bird of New York has been named editor of Art Digest, succeeding Peyton Boswell Jr., who died June 23. A former member of the staff of Art Digest, Mr. Bird has recently been with the Port of New York Authority.

• Philip J. Cruise has been named chairman of the New York City Housing Authority to fill the vacancy left by the departure of Maj.-Gen. Thomas F. Farrell for active military service. Gerald J. Carey has been named executive director, replacing James W. Gaynor, also on military leave.

AT THE COLLEGES

Industrial Design Course Is Offered at Columbia

A course in industrial design planned for graduate engineers is being offered this fall at Columbia University for the first time.

Francesco Collura, who has designed products for many of the nation’s leading corporations, is conducting the course, which is intended to give the student a broad view of the function and scope of industrial design in modern industry.

The course is sponsored jointly by the School of Engineering and the School of General Studies. “No attempt is being made to turn out industrial engineers,” explains Prof. George M. Allen, who is directing the course, “but it was felt that engineers today should at least know the fundamentals of this important new field.”

Georgia Tech Initiates Exchange Scholarships

Georgia Institute of Technology has entered into an exchange scholarship plan with a foreign university for the first time in its 66-year history.

Arthur Franklin Beckum Jr., who received his B.S. in Architecture with highest honor last June from Georgia, is the first recipient of the scholarship to Stuttgart Institute of Technology in Germany. He plans to study European architecture.

The one-year Georgia Tech scholar-

(Continued on page 190)
Satisfied Users in Salt Lake City say:

ALFRED BROWN CO.—
“Rubbing costs reduced, grain raise eliminated.”

OLSON CONSTRUCTION—
“More re-uses of forms especially on exposed concrete work.”

The Coliseum shown above was designed by Sherlock, Smith & Adams Inc., of Montgomery, Ala., in collaboration with the New York Engineers Ammann & Whitney.

formfilm

For Protective Coating of Plywood Forms

eliminates

All Over America Contractors Report

• Increased speed of form handling
• Increased form use without recoating
• Increased life of forms
• Eliminates all disadvantages of oil or oil deposits on concrete

and reduces rubbing costs

Satisfied Users in Salt Lake City say:

ALFRED BROWN CO.—
“Rubbing costs reduced, grain raise eliminated.”

OLSON CONSTRUCTION—
“More re-uses of forms especially on exposed concrete work.”

The Coliseum shown above was designed by Sherlock, Smith & Adams Inc., of Montgomery, Ala., in collaboration with the New York Engineers Ammann & Whitney.

A. C. HORN COMPANY, INC.
Manufacturers of materials for building maintenance and construction—established in 1897
10th Street & 44th Avenue, Long Island City 1, N. Y.
Los Angeles • San Francisco • Houston • Chicago • Toronto

SUBSIDIARY OF SUN CHEMICAL CORPORATION

GENTLEMEN:
Please send me complete data on FORMFILM.

NAME______________________________ TITLE______________________________

COMPANY____________________________

ADDRESS____________________________

CITY__________________________ STATE________________

NOVEMBER 1950
How You Save with the NEW Niagara Method of Air Conditioning

Using "Hygrolic" Hygienic Absorbent Liquid

Because it absorbs moisture from the air directly, the new Niagara Controlled Humidity Method uses less, or no, mechanical refrigeration for dehumidifying. You save first costs and installing of heavy machinery. You save space, maintenance expense, power. You get easier, more convenient operation.

Using "Hygrolic" hygienic absorbent liquid, this method gives complete control of temperature and relative humidity. Especially, it is a better way to obtain dry air for drying processes, packaging hygroscopic materials, preventing moisture damage to metals, and obtaining better quality for chemical process products and food products—or in obtaining better results in comfort air conditioning for office or laboratory at lower refrigeration costs.

The diagram shows how filtered air is dehumidified by passing thru a spray of "Hygrolic"—a liquid absorbent which removes air-borne moisture. This liquid is hygienic and non-corrosive; it contains no salts or solids to precipitate and cause maintenance troubles. It is continuously re-concentrated at the same rate at which it absorbs moisture, providing always the full capacity of the air conditioner, automatically.

Units provide a range of capacities from 1000 to 20,000 C. F. M. Multiple unit installations are in use successfully. Records of results are available. For further information, write Niagara Blower Co., Dept. AR, 405 Lexington Ave., New York 17, N. Y.

THE RECORD REPORTS

(Continued from page 188)

ship, made possible by contributions to the World Student Fund, has been awarded to Hans Ludwig Wagner, chemistry student at Stuttgart. He plans to study physical organic chemistry at Georgia.

Faculty Appointments

• G. Holmes Perkins has been named Dean of the School of Fine Arts of the University of Pennsylvania.

Mr. Perkins, who will begin his work at Pennsylvania next February, has been since 1945 the Charles Dyer Norton professor of regional planning and chairman of the Department of Regional Planning of the Harvard Graduate School of Design.

His appointment as dean fills a vacancy created in June when Dr. George Simpson Koyl retired from that post to devote his entire time to his teaching activities as professor of architecture.

A graduate of Harvard University, where he received both his bachelor of arts and master of architecture degrees, Mr. Perkins taught architecture for a time at the University of Michigan but returned to Harvard in 1930. There he has served successively as instructor, assistant professor and associate professor of architecture in the Harvard Graduate School of Design. From 1942 to 1945 he was associated with the National Housing Agency in the Urban Development Division.

Mr. Perkins is a member of the American Institute of Architects and the American Institute of Planners and is editor of the Journal of the American Institute of Planners. He is the author of a "Comparative Outline of Architectural History" and of numerous articles.

• Additions to the faculty of the School of Architecture and Allied Arts at the University of Oregon for the year 1950-1951 include Edmond McCollin, assistant professor of architecture; Donald Sites, Lionel Chadwick and Jan Smekens, instructors in architecture. All the new staff members are critics in design.

Mr. Smekens is on a part-time basis through exchange from the Institute of International Education.

The School has also announced that Prof. Wallace Hayden is on sabbatical leave for the 1950-51 session for study

(Continued on page 192)
Welded Design Cuts Structural Cost 32%

By Maurice Sasso, Consulting Engineer
Los Angeles, California

ARC welding provides the engineer new freedom in design for developing structural members impossible by any other method. It enables him to use structural materials more efficiently, to design stronger, yet lighter buildings that can be erected at lower cost.

In the construction of the Associated Telephone Company Building, Laguna Beach, California, open box column design has effected a saving of 32%. The saving of welded construction over riveted design amounts to $7,954 and includes the elimination of 27 tons of structural steel and a reduction in building height of 1'6".

All open box column members, (Fig. 2) as well as beams and girders, were shop fabricated at low cost with fast, downhand welding methods. Field erection was completed in only 26 hours with a crew of 6 men. Both shop and field welding were done with Lincoln "Fleetweld 5" electrode and "Shield-Arc" welders. Welding also made it possible to erect the addition without disturbing delicate instrument settings in the telephone exchange itself.

GET THE FACTS
Send for Studies in Structural Arc Welding, write
THE LINCOLN ELECTRIC COMPANY
Dept. 153, Cleveland 1, Ohio

Sales Offices and Field Service Shops in All Principal Cities

NOVEMBER 1950 191
One Word Specification

Corruform

When you specify Corruform you get one standard product developed to meet your needs, uniform in quality, available anywhere without restriction on your choice of the major construction materials with which Corruform is used.

Patented Corruform is a 100,000 psi steel base for concrete in joist construction. Millions of square feet of Corruform testify to its service to architects and performance to contractors.

SAFE — because Corruform was developed to provide an extra-tough, secure steel base which maintains structural principles and structural integrity.

GOOD LOOKING — because the pleasing corrugated pattern makes an attractive exposed ceiling. It remains true and level. Corruform is available plain, galvanized or vinyl primed for painting.

ECONOMICAL — because, made of 100,000 psi steel, it performs adequately without waste. Corruform carries concrete without sag, stretch, bend or leakage.

STANDARDIZED — to meet the specification requirements for joist construction, one gauge — .0156" steel — one shape — 2 3/16" x 1/2" deep corrugations — weight 3/4# per square foot with fasteners, steel of guaranteed average strength 100,000 psi — single test minimum strength 95,000 psi.

Send for AIA File Today

GRANCO STEEL PRODUCTS CO.
(Subsidiary of Granite City Steel)
Granite City, Illinois

THE RECORD REPORTS

(Continued from page 190)

and travel in South America and Asst. Prof. Jack Wilkinson for study in Europe.

Six graduate assistantships have been made available for 1950-51 to students working for advanced degrees — Warren Holbrook, Joseph Daugherty, Donald Rankin, Howard Hall, Robert Peasley and Mrs. Jane Gehring.

The Ion Lewis Fellow, Everett Franks, has recently returned from travel and study in South America and Prof. David McCosh has returned to the staff after a year's sabbatical leave in Mexico.

• Albert Litvin, materials engineer for the National Bureau of Standards, has been named structural engineer at Armour Research Foundation of Illinois Institute of Technology. In his new position, Mr. Litvin will be doing research in the field of lightweight aggregates and concrete.

• The appointment of Isadore Rosenfield, New York architect and hospital consultant, as a visiting critic in graduate design at the Columbia University School of Architecture has been announced by Dean Leopold Arnaud. The architect will present a problem which involves a hospital with one program and site, but with different climatic conditions.

COMPETITIONS

N.A.H.B. and Building Sponsor Small House Design Contest

Prizes totaling $100,000 are offered in a small house design contest jointly sponsored by the National Association of Home Builders and The Magazine of Building.

The contest, which closes Dec. 15, is open to draftsmen, designers and students as well as architects. Winners will be announced in January.

The contest is intended to elicit the best possible design for a three-bedroom house with not more than 1000 sq ft of floor space, suitable for a 60 x 100 ft. lot, and meeting FHA and VA requirements.

Awards will be made in three categories — national, regional and special. National awards listed are: first — $7500; second — $5000; third — $2500; fourth — $1000; nine honorable mentions —

(Continued on page 194)
HOW to plan distinction at low cost

with the MASONITE HARDBOARD FAMILY

When owners want distinction—but the budget says "no"—the Masonite® Hardboard family offers a happy solution! Available in 19 types and thicknesses, these smooth, grainless, all-wood panels create out-of-the-ordinary interiors at low cost.

Supremely workable—staunch and enduring—they speed the work while assuring lasting value. Here are a few ways in which Masonite Hardboards can assist you—

HOW to Provide Crackproof Dry Walls
Big, rigid panels of Masonite 1/4" Panelwood® go up quickly over open framing to create attractive effects like this. Panelwood builds crackproof walls and ceilings—dent and scuff resistant, too. And its supersmooth surface is easy to finish.

HOW to Add Individuality—at Low Cost
There's more scope for your planning after you specify walls of Leatherwood—the Masonite Hardboard with a surface that looks and feels like Spanish-grain leather. Use Leatherwood, too, for inexpensive cabinet work with a luxury look.

HOW to Have High Style—on a Low Budget
Masonite Temprtile®—tempered for extra durability and moisture resistance—comes already scored in a 4-inch tile pattern. Temprtile can be enameled, lacquered or painted—keeps its gleaming brightness for years. The cabinets are made of 1/4" Standard Presdwood®.

MASONITE CORPORATION


Useful Information—Yours for the asking—
Mail the coupon!

MASONITE CORPORATION, Dept. AR-11
P. O. Box 777
Chicago 90, Illinois

Gentlemen:
For my files, please send me information and literature about Masonite Hardboards.

Name……………………………………………………………
Address……………………………………………………
City…………………………………………………………….. State………………………………………..

Lumber dealers have 19 types and thicknesses of MASONITE HARDBOARDS for 1000 uses

NOVEMBER 1950
with "Safety-Sealed" Saf-Aire Gas Heating Units

Gain Valuable floor space!

Free your designs from chimney limitations!

Avoid expensive central heating installation!

When you specify "Safety-Sealed" Saf-Aire units you combine safety and dependability with real economy. These attractive, space-saving Saf-Aire units require no chimney, no ducts, no electricity. Bring important installation savings.

Quickly, easily installed in any exterior wall, Saf-Aire provides healthful, even, "zone-controlled" heat with either natural, manufactured or LP gas. Assures positive safety, too, for no room air is used for combustion.

Chooses SAF-AIRE For 1500-Home Project

Mr. Barney Katzman, President of Detroit's Prudential Investment Company, says: "Important savings of space and simplification of individual home design are the two main reasons we picked Saf-Aire. We also count on their positive safety and convenient zone-heating control to be big assets in the sale and rental of these homes."

SAF-AIRE wastes no floor or closet space. The all-aluminum interior panel extends only 4 inches from wall surface. Connects directly to the small Lundstrum Vent on the exterior wall. Simple, modern design suits any interior. Both 14,000 and 20,000 BTU capacity models are available in 3 attractive finishes.

Model 991-14 18" x 24"  Model 992-20 18" x 38½"

Only Saf-Aire... has the patented exterior wall vent that draws all combustion air from outdoors, then vents all combustion products outside for dissipation.

Approved by American Gas Association. Also listed by Underwriters' Laboratories and accepted for Veterans' Housing and F. H. A. Financing.

WRITE NOW for complete free information and specifications.

Stewart-Warner Corp., South Wind Division, 1526 Drover Street Indianapolis 7, Indiana

ARCHITECTURAL RECORD
Art Metal Provides

All the DATA You Need to specify and Use

INCANDESCENT LIGHTING

This is a typical page illustrating the complete product information presented in the new, 48-page Art Metal Catalog...

Explicit Data

- 99 Product Illustrations
- 51 Cross Section Details
- 47 Light Distribution Curves
- 24 Coefficient of Utilization Tables
- Detailed Product Specifications
- General Engineering Information

The ART METAL COMPANY • CLEVELAND 3, OHIO

Manufacturers of Unified Lighting Equipment for Office, Store, School, Hospital and Hotel

There's an Art Metal Incandescent Unit for every lighting need.

Art Metal Unified Lighting, standardizes the design, style and finish of each unit, to achieve an architecturally integrated installation.

THE ART METAL COMPANY

1814 East 40th Street, Cleveland 3, Ohio

Gentlemen: Kindly send me your CATALOG — INCANDESCENT UNIFIED LIGHTING.

Firm________________________
Name________________________
Title________________________
Address_______________________
City_________________________ State________________________

NOVEMBER 1950
window sills and stools by

ALBERENE

- They never chip, scale, or split.
- They're blue-gray — harmonize with any color.
- They're free of maintenance costs — for all time.

Alberene stone may also be used on copings, spandrels, exterior and interior trim. Write today, on your own letterhead, for full data and samples to —

ALBERENE STONE CORP.
419—4TH AVENUE • NEW YORK 18, N. Y.

THE RECORD REPORTS
(Continued from page 194)

Eero Saarinen on behalf of his father. At the Detroit meeting, Mr. Hughes described his mission to London and delivered the Gold Medal to Mr. Ditchy. Tributes to the Finnish-born architect described by Mr. Ditchy as the most illustrious member the Detroit Chapter ever had were also heard from Prof. Emil Lorch of the University of Michigan and George F. Emery, secretary of the Detroit City Plan Commission. Mr. Saarinen's remarks included a moving account of the memorial services held at Helsinki when his father's ashes were taken to Finland and at the burial place on the Saarinen estate at Hvittrask.

ALEXANDER TROWBRIDGE: WASHINGTON ARCHITECT

Alexander Buell Trowbridge, who retired in 1937 after a 40-year career in architecture, died September 27 in Washington, D. C., where he had been living in recent years. His age was 82.

Mr. Trowbridge, a former consulting architect for the Folger Shakespeare Library and the Federal Reserve Board, was senior partner in the architectural firm of Trowbridge and Ackerman in New York from 1906 to 1921. From 1921 to 1934 he was a consulting architect in New York and Washington.

After his graduation from Cornell in 1890, Mr. Trowbridge studied at the Ecole des Beaux Arts in Paris, and then returned to Cornell as dean of the College of Fine Arts from 1897 to 1902.
There are two!

1. J-M ASPHALT TILE...
   Standard of quality...chosen for United Nations Building

2. AND J-M TERRAFLEX...
   New plastic-asbestos tile—nearest approach to an ideal all-purpose flooring ever developed!

   - When you want a quality floor covering at low initial cost, you have every reason for preferring J-M Asphalt Tile. It is long-wearing, easy to maintain, and the units come in a wide range of attractive colors. Today asphalt tile is the most widely used and accepted floor covering for all types of commercial and institutional buildings!

   **BUT**, when your preference is for the best there is, look to Terraflex! It is the revolutionary new flooring made of plastic-asbestos, pioneered and developed by Johns-Manville. Terraflex will outwear all other types of decorative flooring two to one. The resilient tile-like units are unaffected by greases, oils, alkaline moisture. They come in clearer, brighter colors...can be safely used on concrete floors in contact with the ground...withstand normal movement of wood sub-floors without breaking.

   Whether you select J-M Terraflex or J-M Asphalt Tile, your flooring choice will be on a firm foundation. See your J-M Approved Flooring Contractor, or write for our new flooring brochures.

Johns-Manville, Box 290, New York 16, N.Y.


Johns-Manville

J-M ASPHALT TILE FLOORING has the Mark of Distinction...the label of the Asphalt Tile Institute.
Here it is!
'51's LIKELIEST PROFIT-PRODUCER
for manufacturers of new-home products!

Here's why...

UNLIKE government-curbed mass housing, the rich custom-built market is heading for an upswing in '51—and Home Owners' Catalogs sells this quality market like no other medium does.

UNLIKE mass "shelter group" publications, Home Owners' Catalogs selectively sells this selective market by distributing your sales literature to known consumer prospects only—families who are impelled to buy.

UNLIKE the function of mass advertising, consumer catalog distribution via Home Owners' Catalogs provides detailed buying information which influences buying decisions made by specific, verified, dominant buying factors.

UNLIKE any other printed means you can name, Home Owners' Catalogs is the most effective, most economical distributor of consumer sales literature to the greatest number of qualified home-planners.

UNLIKE any other year in its history, Home Owners' Catalogs is now serving more national accounts than ever before... distributing more consumer catalogs than ever before (over 2,500,000) ... binding bigger books than ever before (over 398 pages).

UNLIKE all other merchandising aids offered by consumer publications and services, the Home Owners' Catalogs merchandising package is a proven sales-maker with plenty of dealer-level impact.

ACT NOW! HIRE HOME OWNERS' CATALOGS FOR '51!
YOU'LL LIKE WHAT IT DOES TO YOUR SALES!

RARE SALES OPPORTUNITY . . . for manufacturers of building materials, equipment, appliances, and home furnishings!
Write today for full facts on Home Owners' Catalogs and the quality housing market. These two brochures are yours for the asking: "Now You Know" and "Let's Sell Quality Housing".

119 WEST 40TH STREET • NEW YORK 18 • NEW YORK
You can design "personality"
right into each building when you specify

ENDURO-ASHLAR ARCHITECTURAL TERRA COTTA

So versatile in form, color and texture is Enduro-Ashlar Architectural Terra Cotta, that you can design in it without creative restraint. It is tailor-made to meet your specifications precisely—severe surfaces or decorative sculpture, brilliant colors or delicate tints, individual units large or small. Every advantage you want in a building material is found in Enduro-Ashlar Architectural Terra Cotta ... for, in addition to its versatility, beauty and quality, it assures minimum maintenance. Simple soap-and-water washings retain its original richness and attractive appearance indefinitely. Whatever the project—mercantile, industrial or monumental construction, or modernization—you'll want to investigate the advantages offered by this time-proved terra cotta.

Construction detail, data, color samples, estimates, advice on preliminary sketches, will be furnished promptly without charge. Send your inquiry today.

FEDERAL SEABOARD TERRA COTTA CORP.

10 EAST 40th STREET, NEW YORK 16, N. Y.
PLANTS AT PERTH AMBOY AND SOUTH AMBOY, N. J.
LEVI TT & Sons cut costs $16,800 a year with OZALID

OZALID is the speedy copying process that's 60 TIMES FASTER than costly, old-fashioned "copying"!

Ozalid, the versatile and economical copying process, not only helps Levitt & Sons create a distinctive style for each home in famous Levittown—but is saving these Long Island builders thousands of dollars each year.

Plan Changes Made with Ease
Although Levitt & Sons' 5,000 low-priced houses, built this year, were designed around 4 basic plans, each unit presents separate drafting problems. In spite of limiting basic designs Ozalid provides them with the simplest, most accurate way to add or change elements in the master plans.

Prints Delivered in Minutes
An Ozalid printing machine is located on the premises of the Levitt engineering department—there's no waiting for prints. Detailed information is forwarded immediately to the sales, legal, construction and purchasing departments; and new or corrected copies are immediately available. Working a 7-day week, Ozalid turns out thousands of prints—in record time.

Plan Costs Cut 44%
Prior to Ozalid, Levitt & Sons spent, on the average, $2,500 each month for prints alone. Since Ozalid, these costs have been reduced to $1,100—a saving of $16,800 a year!

Whether your business is large or small—engineering, accounting, manufacturing or selling—you can benefit from Ozalid's versatility. Get the full story of how Ozalid can solve your copying problems—write for your copy of "The Simplest Business System", today!

Cut Copying Costs ...use OZALID

Johnson City, N. Y. • Ozalid in Canada—Hughes Owens Co., Ltd., Montreal
A Division of General Aniline & Film Corp. "From Research to Reality"
MEMO

Jim:
I've specified that only Inland HI-BOND reinforcing bars be used on your new project. Here's why:

1. They not only meet but exceed minimum standards set up by ASTM A305-49.

2. Because of proper ratio of bearing to shearing areas, you obtain greater bond between the steel and concrete, thus providing more efficient transfer of stress at splices and reducing the size of tension cracks. In other words, you'll get a more efficient and better-looking structure.

3. You'll save money — first, because with HI-BOND, we can eliminate end hooks on your job, which means a saving in steel, fabricating and placing costs. And because a single wire loop holds HI-BOND firmly in place — even during pouring of concrete — that means further savings in wire and tying time.

4. Inland HI-BOND is available for prompt shipment from the Ryerson Company and other leading steel warehouses throughout the middle and far west. And HI-BOND costs no more than ordinary reinforcing bars.

INLAND HI-BOND
INLAND STEEL COMPANY, 38 S. Dearborn St., Chicago 3, Ill.

The Reinforcing Bar with the "BUILT-IN" ANCHORAGE!
For the Secretariat building Weis furnished polished stainless steel doors with complete hardware for all toilet compartments. All other buildings of the United Nations group will be equipped with WeisArt floor mounted toilet partitions similar to this installation in one of the nation's leading universities.

Designed and built in harmony with the most modern trends, and suited for use with the latest building techniques, WeisArt compartments combine fine appearance with thorough-going quality of construction.

Doors, stiles and partitions are of flush steel construction with edges locked and sealed. Galvanized surface is smooth as furniture steel, and is Bonderized for additional corrosion resistance and positive adhesion of enamel to metal.

Baked synthetic primer and enamel, separately baked, combines a highly protective surface coating with lustrous beauty—in a wide range of colors.

Measured in terms of years of dependable and trouble-free service, WeisArt compartments are practical and economical—as well as highly suitable for the finest of modern structures. For detailed information, write

**Beauty**

**Sanitation**

**Stamina**

**Henry Weis Mfg. Co., Inc.**

3103 Weisway Building, Elkhart, Indiana

---

**THE RECORD REPORTS**

**Canada**

(Continued from page 200)

August had the effect of a general slowdown. Many stockpiles were depleted at that time and have not been replenished due to the lack of freight cars.

The picture in brief:

**Lumber**—Prices, now quoted on a "day-to-day" basis, are on the way up. Higher transportation costs are blamed, together with the world shortage of lumber. U. S. buyers are reported as being ready to pay almost any price. In addition to their orders, a new $25 million one booked by British Columbia for the United Kingdom will not help the home situation.

**Cement**—Despite record production, supplies are being rationed by the principal manufacturer. And the old, familiar indications of human greed are said to be developing. Some contractors, no longer building for themselves, are holding their quotas for speculative resale. Some dealers are buying up scarce quantities, and importing like mad in an effort to make a killing.

**Steel**—The supply is steadily becoming more critical due to heavy domestic demand and curtailed shipments from the U. S. Things are expected to get worse before they get better. One instance is the case of hundreds of homeowners who installed oil heating this summer and now find they're unable to obtain storage tanks. Another is the return of the conditional sale of nails. Unless a purchaser buys an alarm clock or snow shovel as well, he gets no nails. This is particularly hard to take after a recent 40- to 45-cent boost per cwt.

**Optimism Is Expressed On Outlook for Housing**

The National Lumbermen's Council of Canada, meeting in Windsor, recently heard an optimistic forecast concerning the future of housing in Canada.

W. F. Lougheed, economic adviser to the Canadian Bank of Commerce, said that barring war or transformation of Canada into a garrison state, "one cannot see any check to house building activities for many years to come. Not only is there a substantial demand for housing, but also the encouragement of house building will be a part of the

(Continued on page 204)
These Schools Heat with Anthracite because Anthracite Heat is—

1. More dependable
2. Cleaner
3. Safer
4. More economical

Check these case histories of actual performance:

SCHOOL No. 1
School contains sixteen (16) rooms and a gymnasium and houses three hundred and twenty (320) pupils. One stoker using one hundred and ten (110) tons of rice coal per year requires twenty two (22) man hours for a complete heating season. The building is cared for by a single custodian who performs all other janitorial duties as well.

SCHOOL No. 2
This is a seventeen (17) room and gymnasium unit housing two hundred and ninety two (292) pupils. One stoker using one hundred and fifty (150) tons of #1 Buckwheat per year requires ½ man hour of labor every two and one half (2½) days during the heating season. A single custodian performs all other janitorial duties.

SCHOOL No. 3
Three (3) stokers using five hundred (500) tons of rice per year requires two and one half (2½) man hours of labor per day for boiler room attention. A single custodian performs this and all other duties in the school.

Ask us for proof that Anthracite is more dependable, cleaner, safer and more economical for schools, apartments, hotels and similar buildings. Just write Anthracite Institute, 101 Park Avenue, New York 17, New York, or phone MUrray Hill 9-6890.

ANTHRACITE INSTITUTE
101 Park Avenue
New York 17, N. Y.
All architects should know these facts about pressure-treated lumber

**FIRST**

PROTECTION—Treating of lumber preserves it—just as alloys preserve metals. The purpose is to protect lumber against costly rot and termite damage.

**SECOND**

PRESSURE TREATMENT vs. Surface Application—Authorities say that pressure treatment provides the only sure, lasting protection to lumber.

**THIRD**

OTHER QUALITIES TO LOOK FOR—For greatest usefulness, preservatives also should be clean, odorless, paintable, non-leaching and non-corrosive.

**FOURTH**

WOLMANIZED Pressure-Treated Lumber combines all these requirements—lasts 3 to 5 times longer than untreated wood, because it's treated under 150 lbs. pressure per square inch. Protection is deep in the wood fibers. It's clean, odorless, paintable, non-leaching, non-corrosive. Wolmanized Pressure-Treated Lumber has been proved in use for over 25 years. It will prove its value to you, too.

**THE RECORD REPORTS**

**CANADA**

(Continued from page 202)

anti-depression activity of any government.”

Mr. Lougheed’s opinion is reassuring in the face of mounting construction costs. The latter seem to be inevitable with higher taxes, defense demands for material, and long-term labor contracts with projected wage increases.

So far, despite international tension, lending institutions advise that there has been no change in mortgage policy and they do not admit that any immediate change is contemplated. It is true that some institutions are not accepting applications on certain types of house at the present time, but this fact is attributed to the great expansion that has taken place in their mortgage portfolios, putting them in a position to be more selective than formerly.

Likewise, it is claimed that no change has been made in the lending policy of Central Mortgage & Housing Corporation, and no action comparable to the restriction of housing credit by the U. S. government is scheduled now. However, the federal shelter agency is not recognizing current labor and materials costs in establishing its appraised values. This may result in some curtailment of

(Continued on page 206)

**AMERICAN LUMBER & TREATING COMPANY**

General Offices: 1650 McCormick Bldg., Chicago 4, Illinois


It pays to use... WOLMANIZED PRESSURE TREATED LUMBER

Above: Guardian Angel Church, Vancouver. Architects: Gardiner & Thornton

Graham Warrington photography
There's a challenge, that many architects enjoy, in designing homes that "look like more than they cost." And the Keystone System of Stucco Application is one sure way of meeting the challenge successfully in any price bracket.

The structural versatility and durability made possible by the Keystone System of Stucco Application set new standards for exterior finishes. For interiors, too, Keymesh offers design and construction advantages worthy of your consideration. Let us send you the booklet, "Specifications for Beautiful, Durable Stucco." Write Keystone Steel & Wire Company, Peoria 7, Illinois.
THE RECORD REPORTS

CANADA
(Continued from page 204)

building under the National Housing Act, but it is doubtful if it will have any appreciable effect in curbing rising costs when the whole economy is on the upswing.

In some quarters, notably those related to labor and social welfare, it is charged that the present C.M.H.C. policy discriminates against low income groups, those people who have money to meet monthly mortgage payments, but lack savings to make the initial down payment, and cannot acquire savings because of the high cost of living. Toronto's City Welfare Committee has gone so far as to call on the Ontario government to reinstate its second mortgage financing program for National Housing Act houses. There has been no action yet and it is doubtful if the province, after giving up its prerogatives in this field when the N.H.A. was revised last fall, is disposed to reenter the mortgage business.

Housing Volume

The Dominion Bureau of Statistics figures for the first six months of 1950 show that Canada has been starting more new houses but finishing them at a somewhat slower rate.

Starts numbered 42,149 up till July 1 this year, against 40,199 last year. During the first half of 1950, 35,968 dwelling units were finished compared with 39,726 in the first half of 1949.

At the end of the half-year, some 63,634 dwelling units were in various stages of construction. This is more than the 56,787 units estimated to be uncompleted at midyear in 1949.

N.H.A. Mortgages

House building awards tallied $7.4 million less in August than they did in the same month a year ago. Surprisingly, though, and particularly since Central Mortgage & Housing Corporation refuses to recognize current costs in making its appraisals, joint loans approved under the National Housing Act showed an increase of $16 million over August 1949. During the month, 3626 loans were approved to assist in the financing of 3932 dwelling units for a total value of $28.1 million. In August 1949, 2014 (Continued on page 210)
Food preparation and service in home and hospital—school and hotel—restaurant and factory—are easier, speedier on Consoweld-surfaced work centers and eating areas. Wherever people live, work and play, there are horizontal and vertical surfaces calling for beauty that is functional. The satisfactory answer is Consoweld, a thermo-setting plastic laminate. Colorful Consoweld saves time (wipes sparkling clean with a damp cloth) . . . saves money (never needs painting or resurfacing).

You and your clients will find dozens of interesting, useful ideas in the 16 full-color pages of the new Consoweld Room Planning Guide, currently advertised in Better Homes and Gardens. You send the convenient coupon. We'll send your free copy! Plastics Division, Consolidated Water Power & Paper Company, Wisconsin Rapids 14, Wisconsin.

Consoweld, Wisconsin Rapids 14, Wisconsin
Please send me, without cost:

[ ] Consoweld Room Planning Guide
[ ] Consoweld Color-Ring and Bonding and Fabrication Booklet

Name: ........................................
Firm: ........................................
Address: .......................................
City: ........................................... State: ....................

© 1950, C. W. P. & P. Co.
Install an Elliott Fisher Electric Lettering Machine, and get ready for a dramatic increase in output from your draftsmen.

You'll find this modern method of lettering relieves them of a tiresome, time-taking, expensive chore . . . and frees them for more important, more productive, more profitable work.

And, because any typist can learn to operate this machine in an hour or so, you cut costs another way.

You'll get the job done faster, better, with the accuracy of machine operation . . . and you'll get it done with less effort, at less cost. You can use this new Underwood machine for other typing work, too.

Undoubtedly, you want that kind of efficiency in your organization. And, with the defense program taxing us to the fullest, no up-to-the-minute engineering department can afford to be without it.

Check into the Elliott Fisher Electric Lettering Machine. Your local Underwood office will be glad to supply lettering samples on your own tracing paper or cloth. And, for full details on the machine itself, mail the coupon today.
How long would it take your draftsmen to letter these notes by hand?

**GENERAL NOTES**

**REMOVAL OF EXISTING BRIDGE***- EXISTING SUPERSTRUCTURES SHALL BE REMOVED AND PILED AT THE SITE.

EXISTING STONE ABUTMENTS SHALL BE REMOVED TO THE ELEVATIONS SHOWN ON THE PLANS. EXISTING STONE FOR DISPOSAL BY THE STATE.

PIERS AND TIMBER PILE BENT SHALL BE REMOVED TO STREAM BED, THE MATERIAL REMOVED SHALL BE PILED AT THE SITE FOR DISPOSAL BY THE STATE.

**WELDING***- ALL WELDING SHALL BE CLASS "A".

**PILLING***- PILING SHALL BE DrIVEN TO A MINIMUM BEARING CAPACITY OF 20 TONS. ALL PILES SHALL HAVE STEEL POINTS. MINIMUM PILE PENETRATION SHALL BE 20"""" BELOW BOTTOM OF FOOTING.

**VIBRATION***- ALL CONCRETE SHALL BE MECHANICALLY VIBRATED.

**EXPOSED EDGES***- CHAMFER ALL EXPOSED EDGES OF CONCRETE 2"""" UNLESS OTHERWISE DETAILED.

**RE-USED STEEL** FOR TRUSS SHALL BE HAULED BY THE CONTRACTOR FROM MCKINLEY AVE., GARAGE OF DEPT., OF HIGHWAYS AT COLUMBUS (WHERE IT WILL BE STORED AFTER COMPLETION OF ITS USE AT BR, NO, MA-40-191)

OVER BIG DARBY CREEK, S.H. 2, SEC. A. J., MADISON COUNTY) AND SHALL BE ERECTED AT THIS CUSHINGTON OVER BIG DARBY SITE. OR THE CONTRACTOR MAY BE REQUIRED TO HAUL THISSTEEL FROM THE BIG DARBY SITE TO THE COUNTY SITE, OR THE CONTRACTOR MAY BE REQUIRED TO HAUL THIS STEEL FROM THE BIG DARBY SITE TO THE CUSHINGTON CO. SITE. THE BID PRICE FOR "HAULING RE-USED STRUCTURAL STEEL" SHALL BE CONSIDERED AS APPLYING TO HAULING FROM EITHER OF THESE SITES AS DIRECTED BY THE ENGINEER. THIS I TEM SHALL CON- SIST OF HAULING AND UNLOADING IN CASE OF EITHER SITE AND ALSO LOADING IN CASE OF THE MCKINLEY AVE. SITE. IN CASE OF HAULING FROM THE BIG DARBY SITE THE LOADING SHALL BE DONE BY THE BIG DARBY CONTRACTOR UNDER HIS PRESENT CONTRACT AND THE CONTRACTOR FOR THE CUSHINGTON CO. PROJECT SHALL HAVE ADEQUATE VEHICLES READY AT THE BIG DARBY SITE WHEN THE STEEL IS READY FOR LOADING.


It took less than 5 minutes with the UNDERWOOD ELLIOTT FISHER ELECTRIC LETTERING MACHINE.

**ELECTRIC LETTERING MACHINE**

Check These Outstanding Advantages:

**Electric Keyboard***... a standard electric keyboard... fast, simple and easy to operate... many times faster than hand methods.

**Sharp and Clear Impressions***... a Special Blue Print Ribbon plus Dual Stroke Control of the electrically operated type bars assure proper density of every type impression to provide sharp and clear reproductions.

**Flat Writing Platen***... flat as a drawing board... accommodates small or large drawings with equal facility... provides unlimited flexibility for making corrections or revisions without removing the drawing from the machine.

**Complete Visibility***... approximately 396 square inches of any large drawing or tracing may be clamped in lettering position on the platen quickly and easily. This extra area is completely visible to the operator for lettering at will.

**Pin-Point Accuracy***... lettering can be positioned with pin-point accuracy anywhere on a drawing quickly and easily... a notched rifle-sight line-indicator tells the operator exactly where a type will print.

Accounting Machine Division

**Underwood Corporation**

ONE PARK AVENUE, NEW YORK 16, N.Y.

Makers of Underwood Typewriters, Accounting Machines, Adding-Figuring Machines, and Supplies

**Gentlemen:**

Please send me full details on the Underwood Elliott Fisher Electric Lettering Machine.

**Name:**

**Street:**

**City**

**Zone**

**State**

NOVEMBER 1950
BEFORE YOU SPECIFY

Consider the economy of STUCCO
made with ATLAS WHITE CEMENT

STUCCO is the economical way to lift a commercial building out of the drab and commonplace. It is a beautiful finish... in sparkling white or color. And it is practical. It simplifies design and construction problems. Original and upkeep costs are low.

Over the years properly made stucco exteriors have proved themselves... in the hot, dry climate of the Southwest... the dampness of the Gulf Coast... and the severe freezing-thawing of northern winters.

To get the full beauty of stucco along with its inherent durability, ATLAS WHITE CEMENTS are being specified more and more. Because they are true white cements, they enhance delicate pigment-based color tones and values.

ATLASS WHITE CEMENTS comply with ASTM and Federal Specifications for portland cement and are available in three types: Regular, Waterproofed and Duraplastic* air-entraining. Atlas White Duraplastic Cement gives increased plasticity for easier application and results in an even more durable stucco. Yet it costs no more.

For further information see SWEET'S catalog, section 4E / 7a and 13C / 5 or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

*"Duraplastic" is the registered trade mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company.

FOR BEAUTY AND UTILITY

ATLAS WHITE CEMENT

® FOR TERRAZZO, PAINT, SLABS, STUCCO

"THEATRE GUILD ON THE AIR"—Sponsored by U. S. Steel Subsidiaries
Sunday Evenings—NBC Network

THE RECORD REPORTS

CANADA

(Canada continued from page 206)

joint loans were approved for 2,278 units amounting to $12.3 million.

Total joint loans from January to the end of August this year, amount to more than $188 million, an increase of $110 million over the same eight-month period last year.

Property Values

A national survey of the several hundred members of the Canadian Association of Real Estate Boards posed the question: is the saturation point for housing yet in sight? The answer was a categorical "no" from most reporting sections. The general outlook for real estate sales in 1950-51 is unchanged from 1949-50. Demand is especially strong in Ontario, Quebec and the Maritimes. In British Columbia it is strong in Vancouver, steady to slightly declining elsewhere. The Prairie Provinces show soft spots developing in some sections, with others remaining strong.

The realtors say that prices of new residential property show a mixed pattern, but generally speaking, they are higher than ever before.

August Contract Awards Continue to Show Rise

Contracts awarded during August soared to $144.5 million, $53.7 million ahead of last August's $90.6 million, according to MacLean Building Reports. With this month's increase, 1950's construction effort shot even farther ahead of the record established in 1949. In the first eight months of this year, $881.6 millions worth of contracts have been awarded, an increase of almost 25 per cent over $708.8 for the same period last year.

Toronto Development Plan Gets Provincial Approval

The master plan designed to control Toronto's development for the next 30 years has been approved by the Ontario Department of Planning and Development.

This action comes nearly a year after the Toronto Planning Board's proposals were first made public, and paves the

(Continued on page 212)
This Low-Brightness Installation means High-Level Seeing Comfort

AT THE HARTFORD CONNECTICUT TRUST COMPANY

Seeing comfort is high in this Hartford, Connecticut bank. One reason, of course, being the high intensity level . . . an average of 60 footcandles initially. Yet brightness levels are exceptionally low both lengthwise and crosswise. The result is a well-lighted working area that keeps the seeing and working efficiency of employees high . . . that gives a light, cheerful atmosphere, attractive to customers.

Whenever you have a lighting problem — unusual or standard — call on your nearest Litecontrol representative. He'll be glad to assist you in every way.

HARTFORD CONNECTICUT TRUST COMPANY, Hartford, Connecticut

Lighting Engineer: Hurley & Capocefalo, Winsted.
Lighting Equipment: Litecontrol No. 5938 recessed.
Slimline fixtures with Holophane No. 9015 CONTROLENS.

Average Initial Intensity: 60 footcandles.

LITECONTROL CORPORATION
36 PLEASANT STREET
WATERTOWN 72, MASSACHUSETTS

Designers, Engineers and Manufacturers of Fluorescent Lighting Equipment distributed only through accredited wholesalers

LITECONTROL Fixtures
KEEP UPKEEP DOWN
way for gradual implementation of a scheme that affects every aspect of the city's physical structure.

In preparation for three years, the plan calls for the spending of some $179 million on traffic arteries, public squares, redevelopment of blighted areas, extensions to water and sewage facilities, erection of health centers and homes for the aged, new civic buildings and park improvements. Grants from the provincial and federal governments are expected to reduce the net cost to the city to about $145 million.

James P. Maher, Planning Board chairman, commenting on the Province’s approval, points out that a framework has been established within which Toronto can develop on an orderly basis.

"It is the first time in the city's history," he said, "that approval has been obtained for such a comprehensive plan."

City Council must now take two essential steps. The first: to adopt an up-to-date zoning bylaw. The second: to set up a system of priorities that will enable the various phases of the work to be carried out according to the urgency of the need and the ability of taxpayers to meet the cost.

Report Foresees Shortage Of Architects, Engineers

Canada faces a serious shortage of architects and engineers, according to the latest report of the Technical Services Council on the employment situation.

During the 22 years the Council has been in operation, the number of architects and engineers per capita has increased tremendously.

"Nevertheless," the report states, "industry has expanded so greatly and our civilization has become so dependent on technology that the large (university) graduating classes have been absorbed."

Demand has been accelerating since the Korean crisis. Openings listed with the Council in August showed a hike of nearly 60 per cent over the same month last year.

B.C. Architects Publicize Activities of Profession

The Architectural Institute of British Columbia is one of Canada’s most active associations. Last fall, it set up a committee, under the chairmanship of Robert R. McKee, to launch a combined advertising and public relations program. Considerable progress is reported on the year’s operations.

In advertising, both newspapers and direct mail were used. The ads were ap-
for better school buildings...

KAYLO ROOF TILE


OTHER KAYLO BUILDING PRODUCTS

Kaylo Firedoors, with their incombustible core, have an Underwriters' rating for Class B and C openings. Handsome in appearance, they provide fire protection and insulating value—will not warp, swell or shrink.

Kaylo Laminated Panels provide finished walls which are lightweight, strong and easy to erect. They are available with surfaces of: cement-asbestos, wood veneer, metal, plastics and other materials.

Kaylo Insulating Roof Tile form a long-lasting roof deck, over which standard roofing materials are applied. Compare these advantages:

- Incombustibility of Kaylo Tile assures protection against fire;
- Insulation Value eliminates the need for additional insulating materials;
- Structural Strength is more than adequate for typical roof loads;
- Inorganic Composition insures rot-resistance—moisture does not damage Kaylo Tile;
- Light Weight permits the use of lighter supporting structural members;
- Easy Application expedites the completion of flat or pitched roof decks.

When planning new school buildings or to modernize existing units, look into the outstanding advantages offered by Kaylo Insulating Roof Tile.

SEND COUPON FOR LITERATURE ON KAYLO BUILDING PRODUCTS

OWENS-ILLINOIS GLASS COMPANY
Kaylo Division, Dept. N-24, Toledo 1, Ohio

Gentlemen: Please send me literature about the following:

- [ ] Kaylo Roof Tile
- [ ] Kaylo Laminated Panels
- [ ] Kaylo Firedoors

NAME ________________________
ADDRESS ______________________
CITY ________________________ STATE ________________________

NOVEMBER 1950
proximately six by nine in. in size and ran in the three Vancouver daily papers. They were positioned on the financial page to catch the eyes of the city's business men. Slick proofs were then mailed to 1000 top executives and decision-makers in Vancouver.

To give the Institute members a chance to meet the press, a cocktail party was held at the Vancouver Club.

The publishers, managing editors, business editors, and advertising managers of the three dailies, together with representatives of the wire services and trade journals, were invited.

Arrangements have also been made for architects to appear on forum-type radio shows and opportunities are being sought for them to speak to service clubs, boards of trade and other groups.

Design, engineering, function, quality, value. All entered into the selection of equipment for the new Science Building at Drake University. And on every count, Kewaunee Laboratory Equipment stood at the head of the class!

Kewaunee design and engineering conform to the needs of the future as well as the present. Both wood and metal construction is "Custom-quality"—mass-produced to bring costs down to the "ready-made" level.

See for yourself how Kewaunee can help you with your laboratory designs. Write today for your free copy of the new Kewaunee Catalog of Laboratory Equipment. Please indicate whether interested in wood or metal construction.

Representatives and Sales Offices in Principal Cities

Kewaunee Mfg. Co.

C. G. Campbell, President

5046 S. Center Street
Adrian, Michigan

Drake University chooses KEWAUNEE for New Science Building

Builds Industry Starts Plans for Civilian Defense

Establishment of a Liaison Committee on Civil Defense has been announced by Robert Drummond, president of the Canadian Construction Association.

"The C.C.A. has long pledged its unrestricted cooperation to the government on all defense matters," said Mr. Drummond, "and after consultation with Major-General Worthington, co-ordinator of civil defense, the Liaison Committee has asked its affiliated Builders' Exchanges throughout Canada to set up local committees to deal with the construction phases."

Though the nation's civil defense program is still largely in the planning stage, Mr. Drummond declares it is obvious that the construction industry must be prepared to play a leading role in mitigating the effects of an attack. As examples, he cited debris clearance and demolition work, restoration of public utilities and lines of communication, rescue of victims trapped by falling buildings, and shelter erection.

The chairman of the Liaison Committee is Col. G. E. Crain, Ottawa general contractor, who reports that already 15 Builders' Exchanges in as many cities have responded to the C.C.A. appeal.

(Continued on page 216)
Webster Walvector, the new idea in wall radiation, is daily solving engineers' heating design problems in new buildings and in modernization.

Illustrated here are four typical installations—an outstanding reinforced concrete structure for the N. J. State Highway Department; an interior of one of the most impressive, large, new Catholic high schools; a modernization of an industrial plant office; a conversion of a school basement into a useful classroom.

Here are some of the reasons why Webster Walvector solves design problems:

Walvector spreads the heat the full length of the wall, does away with hot spots, provides the really-wanted mild heating.

Walvector is out of the way, fits in splendidly in single story or multi-story buildings.

Walvector provides space for concealing much piping exposed with older types of radiation.

Walvector serves as readily with forced hot water as with steam . . . with forced hot water it can be used in "series connection" on perimeter heating principles developed by Webster.

Walvector lessens installation labor on steam jobs . . . with wall to wall installation long and complicated runouts are eliminated.

Walvector has high output, low weight.

Walvector assures clean heating, has ample sponge rubber gasket seal between mounting angle and wall.

Write for Bulletin B-1551 for complete dimensions, ratings, specifications, technical data.

Address Dept. AR-11
WARREN WEBSTER & COMPANY, Camden 5, N. J. Reps. in Principal Cities • In Canada, Darling Bros., Ltd., Montreal

Webster WALVECTOR
For Steam and Hot Water Heating
THE RECORD REPORTS

"It is expected," said Colonel Crain, "that organization in the construction industry will proceed at an accelerated rate in cooperation with civic authorities."

Postwar Urban Growth Is Treated in New Brochure

A most interesting brochure, "Problems of Canadian City Growth," has been published by the Community Planning Association of Canada. Author is Dr. Albert Rose, assistant professor of social work at the University of Toronto.

The brochure assesses the strides made by urban building since the war, and reviews some of the administrative problems that have arisen as waves of construction swept outward across municipal boundary lines.

Information on almost all Canadian metropolitan centers with a population of 60,000 or over is presented. Maps and graphs are used to show their area, the housing stock they possess, and the value of the manufacturing plant they have acquired. The material is compiled so as to facilitate comparison of one center with another.

"Problems of Canadian City Growth" reveals the distribution pattern of new industry, and by relating it to shelter data, indicates how shifts of industrial concentration can intensify local housing shortages.

For instance, Calgary and Edmonton had nearly the same number of dwellings in 1941, and built almost exactly the same number from 1945 to 1949; yet Edmonton has had four times as much postwar industrial construction as Calgary. Greater Winnipeg contains five dwellings for every three in greater Hamilton; yet Hamilton has acquired three times the value in postwar factories that Winnipeg has. Greater Montreal and Toronto possess less than half the dwellings in the 14 cities examined; but they, the two largest metropolitan areas, have witnessed four dollars' worth of new factory buildings for every three dollars' worth in the other 12 centers put together.

Permit Canadian Bids on U.S. Newfoundland Work

Canadian contractors are to be given a chance to bid on the construction of additional facilities at the U.S. Naval Operations base at Argentia, Newfoundland. Cost of the work is expected to exceed $1,500,000.

Tenders will be submitted through the Canadian Commercial Corporation, federal agency handling this country's national defense building program. Before Newfoundland became a province of Canada, Canadian contractors seldom had an opportunity to bid on U.S. Government jobs on the island. Contracts invariably were let to American firms.

Sculptors Seek Wider Market

The Sculptors' Society of Canada (Elizabeth Wyn Wood, president) recently held a special meeting at Queen's University, Kingston.

Listed high on the agenda was the matter of future exhibitions. It was decided that stress will be laid on enabling Canadians to see how the sculptor can serve them in relation to modern gardens and buildings.
For Lighting That Sells—

Use CORNING ALBA-LITE

Here is a showroom lighting installation that is truly unique. With a light intensity of 82 foot candles and fixtures in an unusual radial pattern, it stands out day and night. To achieve this customer-attracting effect, Corning ALBA-LITE was specified.

Despite the high level of illumination in this installation, ALBA-LITE produces comfortable levels of panel brightness. Its non color selective properties assure that finishes are shown to best advantage. Even unlighted, the soft opal of ALBA-LITE presents an attractive appearance.

With an efficiency of over 90%, ALBA-LITE gives you maximum light transmission thereby reducing wattage requirements. Its smooth surface makes cleaning easy—keeps maintenance costs low. ALBA-LITE will not warp or sag in fixture frames and color transmission always remains true.

Available either flat or bent ALBA-LITE may be used for direct, semi-direct, semi-indirect and completely luminous ceiling. For complete information send for Bulletin LS-17.

CORNING GLASS WORKS
CORNING, NEW YORK

CORNING GLASS WORKS
Dept. AR-11, Corning, N. Y.

Please send me a free copy of your Bulletin LS-17 describing Corning ALBA-LITE.

Name ______________________ Title ______________________

Firm ______________________

Address ______________________

City ______________________ Zone ______ State ______

November 1950
More and more architects are finding that Nairn Linoleum gives every quality most desired in school floors! Its wide range of colors and patterns gives unlimited scope for original and distinctive effects ... makes it simple to meet any special requirements. For over 30 years, Nairn Linoleum installations have proved enduring and economical under the heaviest foot traffic. Its smooth, crevice-free surface is easy to clean, sanitary, foot-easy, and quiet. All in all, it assures you and your client maximum return in beauty, long life, and trouble-free service.


NAIRN LINOLEUM

© 1950, Congoleum-Nairn Inc.
school flooring need...

the unusual decorative effects for special purposes easily achieved with Nairn Linoleum!

2. In the Health Room, Nairn Linoleum makes possible true cleanliness. No place for germs to lurk in its crevice-free surface. Sanitary protection at its best!

3. Classrooms in this school are naturally floored with Nairn! Its true resilience reduces the noise of busy feet... promotes quiet, foot-easy walking always!

4. School corridors carry a constant flow of foot traffic. Here is where Nairn proves itself to be most economical with its long life and easy maintenance.

Nairn Linoleum!

1. Long Life
2. Enduring Beauty
3. Easy Maintenance
4. True Resilience

For FLOORS and WALLS
ARCHITECTURAL ACOUSTICS

(Continued from page 160)

We go through the same procedure for the other principal interior surfaces and sum up the contributions of these several elements. For individual items such as chairs and persons, the number of absorption units for the item is usually given directly, since it is much less convenient to compute areas in these cases. Where the exact material in question is not listed in the available tables, we must estimate values from those given for similar materials.

With the summation of all the absorbing elements in the room and the volume of the room we can now calculate the reverberation time either from standard formulas or directly from charts plotted from the formulas. Such a chart has been made and is shown in Fig. 5. Any value of T can be read off once we know the volume and the number of absorption units. Or, working the other way, the chart shows how many units are needed to give a specified T in a room of given volume.

This chart involves two simplifications which should be mentioned in passing, but are too specialized to warrant discussion here. First, the value of T depends to some extent on the shape of the room, in addition to its volume and absorption. This shape dependence is appreciable for highly absorptive rooms, and for rooms of unusually elongated shape. Also omitted in Fig. 5 is the effect of absorption in the air itself. This is a significant factor in large rooms and at frequencies about a few thousand cps. The air absorption reduces the reverberation below that calculated from surface absorption alone. This effect should be included in the analysis of critical problems such as radio studios and concert halls.*

Having found the total number of absorption units (at each of several frequencies) required to give the desired reverberation characteristics, we must proceed to the selection of suitable finishes for the room which will satisfy our requirements. In the modification of existing rooms, this may involve the addition of special sound absorbing materials in the form of acoustic tile, or carpeting or draperies. There have been cases in which existing rooms have had too low a reverberation time.


Application of Sound Absorbents

The selection and placement of finish materials for reverberation control is not a matter that can be described fully in a few paragraphs, but some general remarks can be made. In some rooms it is not necessary to provide sound absorbing materials in addition to those provided by the audience (4 absorption units each) and the other normal furnishings of the room. In most cases we must use a certain amount of special sound absorbing materials to achieve optimum reverberation.

We have unfortunately acquired the habit of using a stock solution for the application of acoustic materials to rooms—cover the entire ceiling. Now this is an easy solution, and often the only feasible one for the more fragile materials. But it is usually the wrong solution in rooms where good hearing conditions are important, although it may be satisfactory for offices, shops, play spaces, etc., in which the material is installed for noise control only. One
New beauty for school and college installations at lower cost—with KENTILE

At Mt. Holyoke College, economical Kentile adds beauty to this new dining hall.

6 Reasons Why Leading Architects Specify KENTILE

LOW COST Inexpensive to buy...to install...to maintain.

BEAUTY Colorful Kentile floors can be designed in a wide variety of rich colors.

DURABILITY Colors can’t wear off. They go clear through to the back of each tile.

SAFETY Provides a confident footing for all. Virtually fire-resistant.

QUIET Kentile is a resilient material that cuts down noise and clatter of footsteps.

EASY TO CLEAN Mild soap and water keeps Kentile clean...occasional no-rub waxings keep it gleaming.

• For institutions, and for private homes, Kentile offers unique advantages that are quickly appreciated by your clients.

Kentile can be installed on concrete in direct contact with the ground. It can be laid over double T&G floors, or directly over plywood...and is also ideally suited for installation on radiant heated concrete slabs.

Kentile is laid tile by tile—meaning installation and labor costs are cut to a minimum. And you’re sure of enthusiastic public acceptance when you specify Kentile, because of the large-scale advertising, with big color ads in leading magazines.

KENTILE® The Asphalt Tile of Enduring Beauty

DAVID E. KENNEDY, INC., 58 2nd Avenue, Brooklyn 15, N.Y.

NOVEMBER 1950
ARCHITECTURAL ACOUSTICS

(Continued from page 220)

frequently sees school buildings in which an acoustic tile has been installed on all ceiling surfaces of classrooms, auditoriums, corridors, gym, etc. In the noisy spaces this is excellent, but it can make for very difficult hearing conditions in the auditorium, and does not solve the problem well in the classroom. As we have pointed out in Part One of this article, the ceiling is the one surface that can be most helpful in providing useful reflections between speaker and listener. In addition to having reduced the value of our one best reflecting surface by treating the entire ceiling, we have usually used a great deal more material than we need for reverberation control, thus making the room too "dead" for ideal listening conditions.

As a general rule, the special sound absorbing materials needed for reverberation control should be placed around the edges of the ceiling, on upper wall surfaces (especially rear wall for echo control) and on other specific "trouble zones." In the classroom, for example, the upper wall surfaces above the blackboards are ideal locations for acoustic materials—many times only these areas need be treated and nothing placed on the ceiling; or perhaps only a small strip of material is needed on the ceiling near the windows. The large flat-ceilinged auditorium should never have acoustic tile on the center portion of the ceiling, again because this surface can be so helpful in increasing the intensity of sound in the rear seats. This type of placement of acoustic materials calls for greater architectural ingenuity than does the conventional treatment of the entire ceiling, but it makes for greatly superior listening conditions.

Available Materials

There are available commercially many types of sound absorbing materials. These materials vary in appearance, durability, paintability, original efficiency and cost. In the integration of sound absorbing materials, it is not always necessary to use these materials in the conventional fashion. It may be, for example, that one wishes to introduce into a brick wall certain areas which are sound absorbing, but does not wish to cover that portion of the wall with an acoustic material. It is possible to place the sound absorbing element behind properly spaced openings in the brick work in these areas, giving not only an interesting pattern but providing excellent sound absorbing characteristics. A surface need not necessarily look "acoustic" to be effective in reverberation control. Many times we wish to suppress the absorption of the higher frequency sounds in order to improve the "brightness" of the room. In these cases it may be highly desirable to cover the sound absorbing surfaces with a facing in which the openings are rather widely spaced (perhaps 4 or 5 in. apart). There are many possibilities in the use of wood, metals, and masonry materials together with fabrics as facings and modifiers for conventional sound absorbing materials.

There are cases in which the perforated acoustic tiles are the most appropriate materials because of their high paintability and light reflection. In other cases an inexpensive blanket of mineral or glass wool may be the most appropriate choice where it is to be covered by some other surface treatment. The thickness of the sound absorbing element is an important consideration in most applications and is dictated to some extent by the room dimensions and the desired sound absorption characteristics. The type of materials used should also be selected with respect to the type of construction (wood, masonry, etc.) and the color and texture of the wall surfaces. The design of the room should also be taken into account in selecting the type of material and its placement.
Your Modern Rooms deserve the Modern Heatilator* Fireplace

Get trouble-free construction with no limit to mantel design

YOU can design any style fireplace around the Heatilator Fireplace unit. Whether modern or traditional, you’ll assure your clients of smokeless, trouble-free operation and the extra comfort of circulated heat!

The Heatilator unit provides all the vital fireplace parts in one compact form...no extra parts to buy or build, no chance for inexperienced masons to go wrong! It reduces time and labor, requires less materials...costs little, if any, more than an ordinary fireplace!

WARMS THE ENTIRE ROOM. The Heatilator unit draws in air from floor level, heats it, and circulates it to every corner of the room. Saves furnace operation on cool spring and fall days. In mild climates, it is the only heating equipment necessary.

PROVED FOR 23 YEARS. The genuine Heatilator Fireplace was perfected over 23 years ago. Hundreds of thousands are now in successful use all over America. Write now for complete specifications and illustrations. Heatilator, Inc., 6111 E. Brighton Ave., Syracuse 5, N.Y.

Heatilator is the registered trade mark of Heatilator, Inc.

NOVEMBER 1950
At no cost to you, we'll do an actual fastening job for you, in steel, concrete, other building materials, with Ramset Dual-Action Fastening Tool... the only powder-actuated tool that offers this dual choice of TURN... or TAP... operation.

We'll show you how Dual-Action has more built-in stability than ever before. We'll prove also, the extra utility, extra flexibility, extra economy of Ramset Dual-Action.

We'll show you also, how Ramset Fasteners, of a smaller shank size than conventional fasteners, have equal or greater holding power and permanence; and why the Dual-Action Tool, using the widest range of steel drive pins and threaded studs, gets jobs done quicker, at lower cost than conventional methods. Help your clients get their building finished faster at less cost by specifying Ramset Fastening System. Call your local Ramset Specialist or write us for 15-minute sample demonstration. Ramset Fasteners, Inc., 12117 Berea Road, Cleveland 11, Ohio.

Architectural Engineering

ARCHITECTURAL ACOUSTICS

(Continued from page 222)

extent by the use of the room in question. If the full frequency range of musical sounds is to be heard in the room it is quite likely that a rather uniform absorption characteristic would be desirable. An inappropriate treatment would be to use only a ½ in. sound absorbing material. One might resort to a considerably thicker treatment with a facing containing widely spaced holes or slots, or one might consider the use of thin plywood as the finish material.

A word on acoustic plaster is probably in order. The results to be obtained from acoustic plaster vary considerably with the methods employed in its installation. More important, however, is the problem of maintenance. The usual trowel or float finish acoustic plaster cannot be successfully repainted without loss of sound absorbing efficiency, and much disappointment has followed the application of paint to such materials. Several firms are now supplying acoustic plasters which are perforated with nail holes after the plaster has been placed, and tests show that this type of material is more repaintable than the conventional smooth finish jobs.

Upholstery Doubles as Absorber

A desirable quality for any room in which listening conditions are important is that the reverberation time be independent of the audience size. This requirement cannot be met exactly without elaborate gadgetry, but a very satisfactory approximation can be had by the use of upholstered seating. The average person sitting in a chair provides about 4 units of absorption. A chair upholstered on inside of back and top of seat with a padded fabric gives about 3 to 3.5 units of absorption when it is unoccupied. Thus the variation in the total number of absorption units in the room is small with varying audience size since the empty seats substitute quite well for the absent members of the audience. This is particularly useful in an auditorium used empty for rehearsals or for any room in which the audience size may vary considerably. Also, by using upholstered seats we can minimize absorption (and waste) of sound energy in materials which would otherwise have to be applied to make the room usable with small audiences.
Ceco Casements...
Engineered for Better Living

Anyone looking out of a Ceco casement for the first time experiences something in better living. The eye crosses easily to the beauty of the outdoors—space seems limitless. Viewed another way, distant scenes become murals to revel in and contemplate. And to live with Ceco casements for even a short time is to appreciate truly sound value. For here, beauty and utility indeed are effectively combined. We believe all this can be attributed to engineering excellence...from design through manufacturing. When you specify Ceco casements, you know you've chosen the very best...you're sure of economy too—you're modern as tomorrow.

CECO STEEL PRODUCTS CORPORATION
General Offices: 5601 West 26th Street, Chicago 50, Illinois
Offices, warehouses and fabricating plants in principal cities
pumps and for lighting circuits at filling stations, refineries and similar places dealing with oil products. Conductors are insulated with vinyl compound and sheathed in a jacket that is said to be highly resistant to petroleum products. They are available in black, white, red, green, orange, blue and yellow. The wiring is available with solid conductors in sizes 14, 12 and 10 Agw.

Construction Materials Dept., General Electric Co., Bridgeport 2, Conn.

**Automatic Louvers Operated By Sun**

Automatic louvers, which keep direct sunlight out of classrooms and control the natural light within the rooms, have been developed by engineers of the Minneapolis-Honeywell Regulator Co., at the request of Architect Harold E. Burket. The vertical louvers have been installed in the new Will Rogers elementary school in Ventura, Calif.

"Flooring for today's homes should be colorful, easy to clean and durable. Amtico rates highly on every count..."

**SAYS**

**MARIO CORBETT**

Noted Architect

From Maine to California, well known architects specify Amtico—product of specialists in rubber flooring exclusively for over 30 years. They like working with Amtico's 23 smart stock colors; samples matched on special orders. They (and their clients) know that there's nothing in the field of resilient floorings to match Amtico's durability, easy maintenance, fire-resistance, comfort and quiet.

**SAMPLES ON REQUEST**

A free box of 4" x 4" samples of Amtico in standard 5/32" gauge and all 23 colors sent, with illustrated literature, on request.

Write Dept. AR-6

<table>
<thead>
<tr>
<th>Amtico RUBBER FLOORING</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMERICAN TILE &amp; RUBBER COMPANY, TRENTON 2, N. J.</td>
</tr>
<tr>
<td>In Canada—American Tile &amp; Rubber Co., Ltd., Sherbrooke, Quebec</td>
</tr>
</tbody>
</table>

Operation is electronic: two photo-electric cells act as light sentinels, and through a system of relays energize special motors. A single master louver panel operates eleven others in the school through a series of potentiometers mounted on the shaft of the master motor. One photo electric cell is mounted directly on the pilot louver. The other is inside the window and measures the amount of light admitted to the room. The two automatically adjust the louvers for proper light balance. A teacher wishing to darken a room for movies, however, can detach her room from the system, close the louvers with a room switch and restore it to the system when the movie is over. The device is expected to find wide use in many types of buildings. Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave. So., Minneapolis 8, Minn.

(Continued on page 228)
chosen for new **Milwaukee Sports Arena**

ESCHWEILER & ESCHWEILER, Milwaukee, Wis.  
ARCHITECT

HUNZINGER CONSTRUCTION CO., Milwaukee, Wis.  
GENERAL CONTRACTOR

WENZEL & HENOCH CO., Milwaukee, Wis.  
PLUMBING CONTRACTOR

Foreground, Crane Norwich Lavatories, vitreous china. Features: rectangular basin, splash lip, Dial-ese controls with interchangeable cartridge.

Background, Crane Sanitor Urinals. Slope front design assures high sanitation, minimum upkeep.

Not shown: Crane Santon Closets with new Triumph flush valves. New valve has replaceable plunger and seat for easy maintenance.

Crane offers a complete choice of plumbing fixtures for any commercial installation—consult your Crane Branch or Crane Wholesaler.
Aluminum Windows

The new Sterling double-hung aluminum windows, featuring a built-in hopper vent, were designed for controlled ventilation of schools and hospitals. This control is possible at seating level even when the sash is raised.

The in-swinging hopper vent is an integral part of the frame to give structural strength and rigidity. If desired, it may be installed in the top, rather than the lower section of the window. The vent is equipped with white bronze hinges, anchored in reinforced jamb blocks. Concealed sliding friction arms are of stainless steel. The section can be provided with muntin bars matching those specified in the double-hung unit. Weatherstripping is of Monel metal or stainless steel.

The double-hung window carries overhead concealed clock spring balances.

For the BEST in construction steel
SPECIFY

LACLEDE

Fast, Economical Construction

Improve construction . . . cut costs . . . save time with Laclede's complete construction steel service.

1 STEEL JOISTS. Light weight plus strength . . . provide new versatility in construction . . . more usable room with fewer interior columns or walls. Prefabricated for quick, easy assembly. Available in span lengths up to 40 feet.

2 WELDED WIRE FABRIC. Cold drawn, welded automatically, controlled to insure uniform strength. Available in rolls or sheets.

3 CORRUGATED STEEL CENTERING. For improved poured slab construction. Greater strength — through deep, close corrugations — minimizes sag, controls concrete, and stabilizes joists by staying the joist top chords. Attached to joists with hand-applied wire clips.

4 STEEL TUBING. For radiant heating.

5 STEEL PIPE AND CONDUIT. For plumbing and electric systems — conveniently run through open webs of joists.

OTHER LACLEDE PRODUCTS . . . .

- Multi-Rib Reinforcing Bars
- Spacer Bars
- Form and Tie Wire
- Spirals
- Welded Stirrups

The lower sash has a continuous lift rail. The design permits use of top-hung full-length, double sliding or half vertical screens. The windows are custom-built in sizes up to 5 ft wide and 10 ft high. Sterling Windows, Inc., 369 Lexington Ave., New York 17, N. Y.

Kitchen Equipment

New models in the line of Hotpoint kitchen and home laundry equipment feature all-electric, automatic operation. The kitchen appliances include a double oven electric range, a combination refrigerator-freezer, an automatic dishwasher sink equipped with a food waste disposal, and a large food freezer. In addition there are matched base and wall cabinets. Laundry appliances include an automatic washer, an electric dryer and an ironer. Cabinets match those of the kitchen equipment; the designs are simple, may be had in colors. Hotpoint, Inc., 5600 W. Taylor St., Chicago, Ill. 

(Continued on page 230)
Newest development in modern construction is insulated metal wall panels—prefabricated units for exterior and partition walls. They save substantially on time, weight and space in the construction of office buildings, stores, factories, warehouses, schools and hospitals.

Their use is being pioneered by four nationally recognized industry leaders. Acceptance has been enthusiastic because the panels arrive at the job cut to fit—go up fast—increase usable floor space—reduce the load-bearing factor. Insulation values are exceptionally high in relation to thickness and weight.

Fenestra, Mahon, Robertson and Truscon panels are factory filled with Fiberglas* Insulation. Made of non-combustible fibers of glass, this material is used because of its high insulating efficiency, light weight, ease of fabrication, low moisture pickup—also non-settling and non-corrosive to metals.

The variety of designs in insulated metal wall panels offers you unlimited opportunities for interesting architectural treatments. They are made of aluminum, steel, stainless, metal-coated steel and protected metal and may be specified in a variety of flat or fluted surfaces, thicknesses, widths and lengths. For more detailed information see Sweet's File—Architectural.

*FIBERGLAS is the trademark (Reg. U.S. Pat. Off.) of the Owens-Corning Fiberglas Corporation for a variety of products made of or with glass fibers.
Glareless Fluorescent Tubes

The Ainsworth Budgellite T-17, a new bare-tube fluorescent fixture, is reported to cause none of the glare that is ordinarily produced by unshielded lamps. The tubes are larger in diameter (2 1/4 in.) than standard lamps, and are coated with new type phosphors. They are said to give the same amount of light per watt — about 40 lumens. The life of the lamps is claimed to be about 5750 hours.

The fixtures for the lamps are very simply designed. Thin center channels contain wiring and brackets for two rows of tubes; exposed boosters are mounted directly above the brackets. Installation, maintenance and operating costs are claimed to be low. In reducing glare, use is made of the principle that the eye sees glare only where there are severely contrasting areas of brightness in the overhead. With the proper ceiling surface, the exposed tubes are claimed to blend in with their surroundings. Ainsworth Lighting, Inc., 3810 29th St., Long Island City 1, N. Y.

NO VISIBLE WEAR
AFTER 30 YEARS OF CONSTANT USE!

Stairs get a lot of punishment in 30 years under the thousands of busy feet which go up and down them—year in, year out. Yet this unretouched photograph (just taken) of the "Feralun" stair treads, installed 30 years ago in the plant of the Dennison Manufacturing Co. at Framingham, Massachusetts, shows no evidence of more than a quarter-century's "foot traffic." 30 years of resistance to wear! 30 years of non-slip underfoot safety! Good for many years to come!

Examples like this show why architects, engineers and builders insist on "Feralun" treads, nosings and plates. Made of cast iron with wear-resistant abrasive particles embedded in walking surfaces, "Feralun" provides a sure-footed "grip" that keeps feet from slipping—and wears and wears. The coupon below will bring you full information on "Feralun." Send it today.

*Also available in Bronze—(Bronzalun), Aluminum—(Alumalun), and Nickel Bronze—(Nicalun).®

AMERICAN ABRASIVE METALS CO.
IRVINGTON 11, N. J.

<table>
<thead>
<tr>
<th>AMERICAN ABRASIVE METALS CO.</th>
<th>470 COIT STREET</th>
<th>IRVINGTON 11, N. J.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gentlemen:</strong> Please send me full information on Feralun:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Today's overwhelming demand by America's homemakers for complete, conveniently modern electric kitchens should be a cue to the planning of progressive home builders.

A recent survey made by one of the leading building publications proved conclusively that among all new features being offered in today's new homes, modern kitchens created more sales appeal than any other factor.

Whether you are remodeling or building a single dwelling, an apartment house or an entire subdivision, the use of Hotpoint Home Appliances in kitchens and home laundries means a faster sale or rental... and a big increase in the property value.

Write now for free literature on Hotpoint Home Appliances. Hotpoint will gladly give you helpful counsel in kitchen and home laundry planning for your particular project.

Close the Sale with Hotpoint!
PRODUCTS
(Continued from page 230)

**Multi-Color Paint**

A newly developed paint, called "Multa-Color" produces a spatter-dash finish of two or more colors with a single coat. A primer coat is necessary only when the paint is used on metal. It is available in flat, semi-gloss and gloss finishes. In bulk, the enamel appears as a homogeneous mass of tiny specks of color. When sprayed or applied by the dip process, the result is a uniformly distributed broken-effect finish.

The paint is claimed to give good results on porous materials, and is recommended by the manufacturers for such uses as finishes for composition walls, unpainted furniture, or to re-finish items which have been previously painted. It is available initially in 16 color combinations, but may be prepared in a variety of others having two to four colors. Some of the standard combinations are: brown and white, black and white, tan and white, green and white, light and dark blue, and pink and white. United Lacquer Mfg. Corp., 1001 W. Elizabeth Ave., Linden, N. J.

**Stud Welding For Windows**

The use of the Nelson stud welding method is claimed to reduce the time required for installing fasteners to hold aluminum windows in masonry. The need for drilling and tapping is eliminated. Four brackets along the top of each window frame serve as templates for locating the studs, which are welded right to the lintel through the bolt holes.

The method was used for the new building of the government's General Accounting Office in Washington, and is said to have resulted in considerable cost-saving. The work was handled with Nelson's new battery-operated power source, which permits stud welding where no power is directly available. The unit includes an automatic battery-charging device which operates on 110 volt a-c current and can be charged during or after use. It can be used for installing studs up to \( \frac{1}{2} \) in. diam with an automatic stud welding gun. The device consists of twelve 6-volt, 150 ampere wet storage batteries mounted on a strong frame and covered with an easily-raised hood. Wheels are optional equipment. The unit weighs about 1100 lbs and may be moved conveniently on a trailer or pickup truck.

When You Design for Efficiency . . .

all of your experience, training and skill are put to use. You make every effort to avoid waste . . . in motion, in time, in the materials to be handled and utilized within your structure. You achieve this same efficiency in flow control when you specify KENNEDY Valves. Since 1877 they have been recognized by major valve users for their uniformly high quality, long life, and dependable performance. Write for the complete catalog.

Established 1877
The KENNEDY VALVE MFG. CO.
ELMIRA, NEW YORK

VALVES • PIPE FITTINGS • FIRE HYDRANTS

Portable power unit permits simple installation of windows by stud-welding...
Announcing...

New

Enlarged Edition of

Time-Saver Standards

Including 232 additional pages of design data


A grand total of 319 different TIME-SAVER STANDARDS...888 pages...more than 1,000 illustrations, charts and diagrams.

The publication of the first edition of TIME-SAVER STANDARDS was an event of first magnitude in the architectural field. It has been acclaimed by thousands of architects the country over...is in current use as a standard text in many architectural schools throughout the country.

Now, in its enlarged form, and containing 232 additional pages of vital information, it becomes more than ever an indispensable source of essential architectural data on...

• Architectural Design
• Engineering Data
• Materials Technology
• Building Practice

Designed for the use and guidance of architects, engineers, specification writers and other building technicians this complete collection of these now famous authoritative monographs on technical aspects of construction cuts research time...offers proved-by-experience solutions to hundreds of structural problems.

Well-Organized 12-page Index

This wealth of data is carefully organized and painstakingly presented. It is so thoroughly indexed that there are references and cross-references...occupying twelve pages of closely set print.

Experience shows that a single item in Time-Saver Standards can well save hundreds of dollars in economy construction...save many hours of your valuable time.

Special Pre-Publication Offer

Although this new, up-to-date edition of Time-Saver Standards will be almost one third larger the regular price will be only $12.50.

But if you place your order now — before December 31, 1950 — you can take advantage of the pre-publication price of $10.00, a saving of $2.50 on the regular price. But, vastly more important, you’ll be sure to get your copy. The first edition was a sell-out before publication.

Simply fill in the coupon below and...

mail it TODAY.

Money-Saving Coupon

BOOK DEPARTMENT, Architectural Record
119 West 40th Street, New York 18, New York

Enter my advance order for... copies of the new, complete, 888-page edition of Time-Saver Standards at the pre-publication price of $10.00* per copy. (Regular price $12.50.) I enclose payment of $...

*Add 20 cents for New York City delivery; $0.30 in all.

Name

Address

City

State

NOVEMBER 1950

233
PRODUCTS (Continued from page 232)


Redwood Color-Preservative

Liquid Raw-Hide Redwood Color-Preservaltie is claimed to provide a long-life economical finish, and to require a minimum of maintenance cost. The treatment is said to seal the surface, repel the elements and to add a uniform natural color that is practically fade-proof. The product penetrates into the wood and is without sheen. A mildew resistant (Aryl Mercury Naphthenate) is included in the formula. Linseed Oil Products Co., 359 Del Monte St., Pasadena 3, Calif.

Heating For An Expandable School

The Dravo heating-ventilating system used for the Elderton Joint School in Armstrong County, Penn., is claimed only to have cost about $850 for each room. Architects Scheeren & Rittenhouse were commissioned to plan a long-range project for a single-story structure containing 22 class rooms and a gymnasium-auditorium. The school board desired a plan that could be built in successive stages at very low cost.

The first unit to be built has four class rooms, a workshop, an industrial arts planning room and two washrooms. Immediate plans call for the addition of two more class rooms. For economy, the heating system was installed with larger capacity than was needed for the present structure. The two new class rooms can be joined to the system by extension of ductwork.

First unit of expandable school is equipped with heater to serve next addition

The heater is direct-fired by gas, and can be converted to use with fuel oil if needed. It has an output capacity of one million Btu per hour and 11,000 cu ft of air per minute. The unit is installed in a small furnace room off the main hall. It operates on air recirculated from class rooms plus fresh air drawn through an inlet in the roof. Air is collected in a sheet metal plenum chamber by a 3-hp fan. The air flows over economizer tubes which carry flue gases from the combustion chamber to the vent stack. Then the air sweeps the stainless steel combustion chamber and is discharged into ductwork leading to individual rooms.

A single, centrally located thermostat is used for control of heater and fan. Warm air input into each room is regulated by spring-acting dampers on the individual inlets. The system operates with the burner off for ventilation on warm days. Dravo Corp., Fifth and Liberty Aves., Pittsburgh 22, Penn.
P-S-S-T IT'S LOTS EASIER, QUICKER 
AND LESS EXPENSIVE TO INSTALL A 
JOSAM GREASE INTERCEPTOR 
WITH THE PLUMBING AND DRAINAGE 
INSTITUTE SEAL OF APPROVAL!

Seriously speaking—grease from your dishwashes, pots and pans will eventually clog your drain lines... cause trouble and expense. Waste water from your dishwasher or sinks won't drain off to the sewer. Why take needless chances? The installation of Josam Grease Interceptors assures that grease will be removed from waste water before it gets into the drain line... keeps them clean... eliminates costly delays and repair bills. Write for free copy of Manual B Today.

Josam Manufacturing Co.
302 Josam Building
Cleveland 13, Ohio

SAVE WATER!
SATISFY CLIENTS!
SPECIFY Pritchard!

Pritchard Cooling Towers are
• Always manufactured of highest quality materials
• Adequately sized, thoroughly engineered
• Available in fireproof construction
• Adaptable to your specifications
• Available in any size for any capacity

Write for FREE Bulletins

How the Leva-Dock Operates

The Leva-Dock is a hinged ramp, positioned by a hydraulic jack. Supporting arms and "throw-over" bridge connect ramp and truck bed. Platform automatically travels up or down as truck springs are relieved or compressed during loading and unloading.

Leva-Dock moves up and down with truck bed level

Leva-Dock Permits Fast Direct Loading

Loading and unloading trucks and trailers presents a tough loading dock problem because (1) truck bed heights vary as much as 12 inches, and (2) the truck bed moves down or up as loading and unloading progresses. This problem has been made very serious by the use of platform and fork-lift trucks handling heavy unit loads.

The Leva-Dock makes it possible to load directly into or unload from all types of trucks or trailers... without using steel plates, bridge ramps, or other slow and frequently dangerous methods. Installation is simple and inexpensive.

Write for architect's data file
Rotary Lift Co., 1111 Kentucky, Memphis 2, Tenn.
Heat Circulating Fireplaces

The *Heatform* metal fireplace forms are available in two models for special mantel designs. Model S is a "Swedish" design, with both front and one end open to permit a view of the open fire from adjoining room areas. Model C is an "Indian design, with curved front and opening, and made for corner installation.

The units, made for enclosing with masonry walls, are equipped with warm and cold air outlets and inlets. The air chambers are claimed to capture heat before it is lost up the chimney and circulate it to all parts of the room, maintaining an even temperature throughout. The design of the throat and down-draft shelf and the location of the damper are said to prevent downdraft air currents from entering the throat. Grilles are available for the outlets, which are located at the top and sides of the standard models. If a panel front outlet grille is desired, a form can be provided with an opening through the front of the fireplace. Superior Fireplace Co., 1708 E. 15th St., Los Angeles 21, Calif.

Tankless Water Heaters

Two new tankless water heaters have been added to the *Bell & Grossell* line. The heaters can be furnished as a standard unit without the jacket, or as a deluxe unit with an insulated metal jacket. Both are constructed with a cast iron shell and spiral copper tube bundle.
WITH AN OUTSTANDING LINE OF BOTH OIL AND GAS-FIRED SUSPENSION TYPE HEATERS, J-C COVERS THE FIELD WITH THIS INCREASINGLY POPULAR TYPE OF FURNACE.

J-C GAS-FIRED SUSPENSION UNITS, fan or blower operated, have outputs of 68,000 to 172,000 BTU. Designed and built for performance and long life, the J-C gas-fired suspension heater is ideal for heating, ventilating...for residential, commercial and industrial applications.

J-C OIL-FIRED SUSPENSION UNITS have outputs of 112,000 to 450,000 BTU. An efficient heater requiring less space than any furnace of its type and rating. Units feature greater heating efficiency with less heating surface...due to an exclusive design of ducts and baffles. Ease of installation is a feature—and ready access facilitates servicing.

For Trouble-Free Bath Tub Edges
Specify LUCKE

Leak-Proof Bath-Tub Hangers
No Leaks • No Cracks • No Repair Expenses

A Necessity For All Housing Projects

There is no excuse for cracks or leaks or repair expense in good building. Leading architects specify LUCKE to overcome this problem. Lucke Hangers build tubs into wall.

NOW—LIGHTWEIGHT ROOFS THAT COMBINE INSULATION AND STRUCTURAL STRENGTH

With one product—one application, Zonolite Concrete Aggregate combines both insulation and structural strength...achieving great savings in construction time, plus frequent economies in the use of structural steel.

More and more architects are specifying Zonolite concrete for roof deck construction—for roof deck construction—for this insulating concrete is permanent—incombustible—rotproof—lightweight—and monolithic all in one. It can be poured over wood forms, fiber or gypsum board forms, over paper backed wire mesh or metal lath forms. And it can be poured as permanent insulation fill over any existing roof.

For complete information concerning Zonolite Concrete Aggregates for roofs, send coupon below today.

ZONOLITE COMPANY
135 S. LaSalle St., Chicago 3, Ill.

At Lumber or Building Material Dealers
Zonolite Company, Dept AR-11-o
135 S. LaSalle St., Chicago 3, Ill.

Please send me at once a copy of your booklet "Zonolite Insulation and Lightweight Aggregates."

Name

Address

City... Zone... State...

Member of the Vermiculite Institute

*Zonolite is a registered trademark
Water Sterilizer

The Sepco Ultra-Violet Water Sterilizer has been developed for the purification of water which must be obtained from a well, spring or other unprotected source. The unit is automatic and electrically operated. It is claimed to require no attention, to use no chemicals and to add no taste or odor to the water. Ultra-violet radiation is said to effectively destroy all bacteria in even the most badly contaminated water, making it safe to drink.

The unit consists of a stainless steel tank 71 in. high by 12 in. diam. Inside are four specially constructed ultra-violet ray tubes extending vertically through the water. Patented baffles at various levels guide the incoming water close to the constantly glowing tubes. The sterilizer purifies water at the rate of 400 gals per hour. Where a larger supply of water may be needed, two or more units can be installed.

Installation is said to be quick and inexpensive. It is only necessary to connect the unit into the incoming water line ahead of any taps, then plug it into a standard electrical outlet. Water inlets and outlets have standard ¾ in. IPS connections. The unit operates on either 50 or 60 cycle, 110 or 115 volt a-c, and is equipped with a transformer to step up the voltage required for proper ultra-violet radiation. Special models can be supplied for use on other voltages or on d-c. Sepco Corp., Pottstown, Penn.

Remote-Control Outlets

Two new triple outlet and plate combinations have been added to the General Electric remote-control wiring line. They are made of molded, one-piece ivory plastic construction, and are said to take less box space than conventional convenience outlets. Available wiring space is larger.

When A “Face Lifting” Is In Order

... be sure to call on Bergen!

It isn’t coincidence that Charles of the Ritz called on Bergen to craft and install their units in outstanding stores throughout the country. Both of us are pretty good “face-lifters” in our respective fields.

Among the units were those for Filene’s in Boston, B. Altman & Co., New York (shown above), Kresge Dept. Store in Newark, Bamberger’s, Newark, A & S in Brooklyn, Gimbel’s, Milwaukee.

Write to Dept. A for our Portfolio of “Jobs Well Done”. It’s worth seeing.

Bergen-sure the success of your modernization program with Bergen Cabinet

1552-36 Bergen Street, Brooklyn, N.Y.

Architectural woodwork that makes the designer’s plan an enduring reality

Phone: President 2-3121

Plastic outlet is designed for remote-control wiring. Section shown below

Unit No. RO-1 outlet has common feed and ground, and unit RO-2 has separate feed and common ground. The separate feed permits control of one or two outlets by switches while the remaining outlet or outlets remain live. Both units are rated for 15 amp, 125 volts; and 10 amp, 250 volts. The outlets are suitable for conventional wiring as well as the remote-control system. Construction Materials Dept., General Electric Co., Bridgeport 2, Conn.
62 Years Ago KOH-I-NOOR made the FIRST Drawing Pencil... in 17 DEGREES, 6B to 9H. Since that time no other pencils have approached Koh-I-Noor's Record for Unfailing Uniform Performance.

No Matter What Your Requirements... you will find a KOH-I-NOOR Product to satisfy you completely

NOW Available...
No. 1600 KOH-I-NOOR Polycolor Pencils with IMPORTED Leads in 67 colors

KOH-I-NOOR PENCIL COMPANY, INC. BLOOMSBURY, NEW JERSEY

ELECTRIC Radiant Heat
Means Low-Cost Safe Heat for This $250,000 California School

Floor-type installation of Heatsum Cable covers over 30,000 square feet in this new Sequoia Elementary School at Redding, California. Heatsum Cable operates at amazing low temperature, reduces fire hazard to a minimum, eliminates fuel storage and maintenance. Specify Roberson Heatsum Cable for your next heating job.

Schools now using Heatsum Cable for Radiant Heating
Union Elementary School
Union, Washington
Coulee Dam Elementary
Coulee Dam, Wash.
Redwood Elementary
Parl Dick, Calif.
McKinley School
Sussexville, Calif.
Pacheco School
Redding, Calif.
Klamath Elementary
Klamath, Calif.

Send for free illustrated literature. Check box for special additional information.

Air conditioning outlets
Return air grilles and registers
Volume controllers
Perforated metal and ornamental grilles
Door ventilators
Special mode-to-order grilles

TITUS MANUFACTURING CORP., WATERLOO, IOWA

Send complete catalog. Send literature on above checked items.

NAME: 
ADDRESS: 
CITY: 
STATE: 

Air Conditioning Outlets
Wide louver surface gives unequalled, directional airflow control. Glass-smooth streamlining eliminates noise—turbulence. Cylinder support allows grille to be made to meet special requirements of any size or shape. Eliminates Mullions, ugly butted construction.

These prime features guarantee performance unobtainable with any other grille

High quality—Saves money
Precision manufactured Airfoil Grilles work right... from the first. Eliminate costly replacement or adjustment "Call-Back". Adjust easy... install easy. Assure lasting customer satisfaction.

Send for complete illustrated literature. Check box for special additional information.

- Air conditioning outlets
- Return air grilles and registers
- Volume controllers
- Perforated metal and ornamental grilles
- Door ventilators
- Special mode-to-order grilles

TITUS MANUFACTURING CORP., WATERLOO, IOWA

Send complete catalog. Send literature on above checked items.

NAME: 
ADDRESS: 
CITY: 
STATE: 

NOVEMBER 1950
The most MODERN kitchen ventilating system!

TRAD- WIND
SUPER CLIPPER
CABINET VENTILATOR

Installs in cabinet over range... double inlets provide COMPLETE ventilation

Only the Super Clipper Kitchen Ventilating System—made by Trade-Wind—exhausts cooking fumes and heat from both the stove and at the ceiling level. This newest development is installed in metal or wood cabinets directly over the stove.* The twin squirrel cage blowers produce 600 CFM—more than sufficient power to trap all cooking heat, grease and odors from the range top as well as through the second inlet at the ceiling. The motor is equipped with a 2-speed control. Two metal air filters are provided. Both a fold-under hood and stationary hood are available and both are optional.

No other kitchen ventilator can do the complete job that the Super Clipper accomplishes. And no other ventilator offers the architect, the builder and the home owner the versatility and efficiency which the Super Clipper provides for the modern kitchen.

* Several manufacturers now build metal cabinets especially for the Super Clipper. Wood cabinets can also be built on the job. Trade-Wind does not provide the cabinet.

Write today for complete information.

TRADE WIND
MOTORFANS Inc.

5707 S. Main St., Los Angeles 37, Calif.

Architectural Engineering

PRODUCTS
(Continued from page 238)

Fans For Ductwork

Two new Robbins & Myers vaneaxial type, medium pressure propeller fans, designed for ductwork applications, are said to permit series or straight-through connections for all air-moving requirements. Type VCDD direct-driven units are constructed with the motor inside the airstream for non-hazardous applications. Type VCS belt-driven units are designed for installations in which corrosive or inflammable fumes, dusts or vapors must be considered.

Cross section of new medium pressure propeller fan designed for use in ductwork

Both type units operate on a low hp input and have airfoil section propellers. Guide vanes are planned to prevent swirling and provide a smooth axial flow of air. The vane is mounted independent of the heavy gage steel drum. Spun aluminum nose and tail cones serve to streamline the air flow. The units are equipped with open-ventilated, ball bearing motors. They are said to be easily installed in standard 20 and 24 in. diam duct systems. Robbins & Myers, Inc., Springfield 99, Ohio.

Rolling Door Hardware

The Washington Line Rolling Door Track and Hanger feature simplicity of construction and installation. The unit is designed for all types of interior doors. Tracks are of steel construction. Hangers have ball-bearing or nylon wheels for

(Continued on page 242)
Send for this handsome NEW 48-PAGE CATALOG
Available, for the asking, to architects and builders who are interested in—

• AUTHENTIC HISTORIC PATTERNS
• CREATIVE REPRODUCTIONS OF NEW DESIGNS
• HIGHEST QUALITY OF MATERIALS AND WORKMANSHIP
• EXCELLENCE IN ARCHITECTURAL TASTE

All of the famous New Orleans designs and many new ones are illustrated in this 1950 LORIO Catalog. And beautiful, large, photographic reproductions of various installations throughout the United States are shown.

LORIO IRON WORKS
738-756 South Gayoso Street • New Orleans 19, Louisiana

MOORE KEY CONTROL
OFTEN PAYS FOR ITSELF
IN LESS THAN 2 YEARS!

You owe it to your client to investigate this modern system of key control. It saves money year in and year out by eliminating expensive repairs and replacement of locks and keys. What’s more, it guarantees security, convenience and privacy. No wonder more architects every year now specify Moore Key Control for use throughout schools, institutions, hospitals, hotels…in all factories and buildings where keys are used.

COMPLETE SYSTEMS
FOR EVERY NEED

Wall cabinets of every size from $27.45 up

Drawer file cabinets

Section of a typical control panel

P. O. MOORE, INC., Dept. A-2
300 Fourth Ave., New York 10, N. Y.

Please send me special architect’s manual for my A.I.A. file on Moore Key Control.

Name
Address
City, State

Mail Coupon today for Free Booklet
To Control

Specify Copperized CZC
(CHROMATED ZINC CHLORIDE)

The three common causes of wood failure are almost eliminated when you specify pressure treatment with Du Pont Copperized CZC. Because this salt-type wood preservative makes wood unappetizing to termites...kills decay-causing fungi...gives a high degree of fire retardance, too.

And Copperized CZC does all this without changing the characteristics of wood as a building material. The treatment leaves timber and lumber clean, odorless, paintable and safe to handle. So, where wood is indicated and permanence demanded...be on the safe side...specify pressure treatment with Du Pont Copperized CZC.


Architectural Engineering

PRODUCTS

(Continued from page 240)

noiseless operation. Doors are supported from the top with no floor tracks. No detail mill work is said to be necessary for installation. Hangers may be either side or top mounted. Washington Steel Products, Inc., 1420 W. Goler St., Tacoma, Wash.

Window Balancer

Made of spring steel, Kwik-Out window balancers provide a simple means of maintaining a constant pressure between window and jamb. This friction is ample to hold the window in any position desired, yet allows the window to be moved up and down easily. The need for sash cords and weights, or for similar equipment is eliminated. The devices also permit quick removal or insertion of windows without the use of tools. The window is merely pressed towards the side having the units and lifted clear of the jamb. To reinsert, the side with the units is inserted first, slight pressure is applied, and the other side slipped into the groove. When in place, the firm grip provided is claimed to eliminate the possibility of rattles or chatter. RCS Tool Sales Corp., Joliet, Ill.

(Continued on page 244)

On to Philadelphia...for NEW IDEAS!

Newest advances in HEATING, VENTILATING, and AIR CONDITIONING...latest trends and practices in providing installations for commercial and public buildings, industrial plants, institutions, and homes...a wealth of stimulating, practical ideas...all are in store for architects, consulting engineers, and contractors at the —

10th Air Conditioning Exposition
International Heating & Ventilating Exposition

Over 300 informative, technically-staffed exhibits and demonstrations will afford you unequalled opportunity to see and compare at one time hundreds of new and improved items from complete units to maintenance supplies—to discuss your plans, problems and requirements first-hand with engineering specialists.

Plan ahead now to attend this foremost event of its kind...to get more valuable information, more progressive ideas, more worthwhile contacts than you can acquire in any comparable time or way. Note the date—January 22-26, 1951.

Auspices of the American Society of Heating and Ventilating Engineers

Management International Exposition Company

ARCHITECTURAL RECORD
AC Stand-By Power

Provide a KATOLIGHT light and power plant to provide current in case of power failure.

Since 1928, KATOLIGHT AC Generators have been sent to all parts of the world. The capacities range from 500-25,000 watts on complete engine-driven plants. Alternators are available from 500 watts to 300 kw. Nationally known engines, such as Chrysler, LeRoy, Hercules, Briggs-Stratton, and Wisconsin are used to powerize.

Mechanical and electrical design is worked out bearing the desire to have generating plants that can be serviced by local electricians or garage mechanics.

Write today for complete specifications.

Kato Engineering Co. • Mankato, Minnesota

There are a lot of good cars...
but there is only one CADILLAC

There are a lot of good violins...
but there is only one STRADIVARIUS

There are a lot of good drawing pencils
but there is only one CASTELL

with the Genuine IMPORTED CASTELL lead

So smooth, so free-flowing—it’s an inspiration for genius. Yes, it costs a few pennies more, but it lasts so much longer than ordinary pencils—it’s more economical in the long run. 18 exact tones of black—7B to 9H.

NOTE: CASTELL does away with the irritation of point breaking. It takes needlepoint sharpening without snapping. Order from your Dealer today—and don’t allow yourself to be talked into a substitute.
Low cost home cooling is here! The Hunter Package Fan is a compact, powerful ventilating fan that is easily installed in any attic to pull in fresh, cool breezes and push out stale, humid air. Thousands are now in use throughout the nation.

Installation of the Hunter Package Fan is simple and inexpensive. Fan, motor and suction box are all in one unit that requires only a ceiling opening in hallway and 18" clearance in attic. Fan rests on attic floor; shutter fastens to ceiling opening. No "extras" to buy or build.

Hunter Package Attic Fans are available in four models, ranging from 4750 CFM to 9500 CFM, to fit any home size and climate. Quiet, powerful and dependable. Manufactured by Hunter, exclusive fan makers since 1886.

Interlock Receptacle

The Panellit interlock receptacle is designed with safety features for the use of cord extensions in hazardous locations. The unit incorporates a safety cam lever which locks cord caps securely in the receptacle. This makes it impossible to remove the cord while the current is on. A flip of the lever breaks the circuit and allows plugs to be removed from the sockets. Standard flush type single or duplex receptacles, fitting any conventional cord cap, are used. Units are available in capacities up to 20 amperes. Panellit, Inc., 7218 No. Clark St., Chicago 26, Ill.

Mixing Valve

A new automatic hot water mixing valve, called the Symmons T-70 Temperature Controller, is designed for large capacity and to give exact hot water temperature required, regardless of heater temperature variations. It also automatically compensates for normal pressure fluctuations. Temperature settings are calibrated from 90 to 180 degrees.

The unit is operated by a thermostatic solid fill bellows mounted out of the water in a protected chamber subject only to atmosphere. To this thermal element is attached 72 running in. of liquid in a chamber.

MAIL FOR BOOKLET
Hunter Fan and Ventilating Company
396 South Front St., Memphis, Tenn.
Send free copy of "How to Cool for Comfort" to:
Name
Address
City & State

Wild grain and checking are just about the only troubles in using fir plywood. The one sure way to start with FIRZITE. It tight-seals the pores, virtually prevents grain rise and checking, readies the surface satin-smooth for paint, stain, enamel. (For blond, pickled, wiped or tinted effects on any wood, use White Firzite.)

SAVINLAC
— newer than shellac or varnish ... and better!

For "natural wood" finishes on paneling, there is nothing like Satinlac. Brings out and preserves the natural grain and color beauty of any plywood or solid wood. Avoids "built-up" look and gives full protection and preservation. "Water-white" darkens with age, turns yellow or brown to "Water-white" amber or "Water-white" brown. Easy to brush or spray, dries ready for next coat in 3 or 4 hours.
IN THIS COMPLETELY AIR-CONDITIONED BUILDING...

BARBER-COLMAN

ONE SOURCE FOR BOTH...

TEMPERATURE CONTROLS
Maximum Performance, Minimum Maintenance
AND AIR DISTRIBUTION PRODUCTS
Top in Appearance as well as Performance

In the planning and construction of this building, the architect, engineer, and contractors were able to work with ONE source — Barber-Colman Company — for ALL of the automatic controls AND all of the sidewall and ceiling outlets in the entire building. Keep this name in mind for your next project...

BARBER-COLMAN COMPANY
1233 ROCK ST., ROCKFORD, ILLINOIS

The New
ALLSTATE INSURANCE COMPANY
Building
HOME OFFICE - CHICAGO, ILLINOIS

ARCHITECT — Carr and Wright, Inc., Chicago, Illinois
CONSULTING ENGINEER — Robert E. Handy, Chicago, Illinois
HEATING CONTRACTOR — Gallerher and Spack, Inc., Chicago, Illinois
VENTILATING CONTRACTOR — Accord Ventilating Co., Chicago, Illinois
BETTER INDUSTRIAL ELEVATORS

Give your clients the most value, the most advantages by specifying Globe Industrial Elevators for plants and warehouses.

Low initial cost, simplified installation. Low maintenance, oil hydraulic operation. Advanced safety features. Hold-down or automatic push-button control. Rugged construction for heavy loads. No penthouse or load bearing walls required. Countless superior features assure client satisfaction. Mail coupon for specifications and complete details, now.

Estimates or suggestions furnished on any industrial lifting problem by Globe's Lifting Engineers. No obligation.

MAIL COUPON TODAY

GLOBE HOIST COMPANY
1000 E. Mermaid Lane
Philadelphia 19, Pa.


Company........................................... Name...........................................

Address........................................... City...........................................

GLOBE HOIST COMPANY
Des Moines 6, Iowa Philadelphia 18, Pa.

Architectural Engineering

PRODUCTS
(Continued from page 244)

fill copper tubing located in the mixing chamber. Temperature changes in the mixing chamber produce hydraulic action to operate the valve. The Symmons Engineering Co., 791 Tremont St., Boston, Mass.

Brick Conveyor

The Brik-Toler conveyor is designed to eliminate carrying materials such as brick up ladders in construction work. The device is 20 ft long, 14½ in. wide and weighs 385 lbs. It is built with bridge type trussed construction and torque frame. The conveyor belt is 12 in. wide vulcanized rubber, driven by an enclosed ½ H.P. gear motor. A gasoline motor drive is available. The fixed speed of the belt is 60 ft per minute.

Conveyor simplifies and speeds transportation of brick to second floor levels

The bed of the conveyor is constructed with 16 ga. 2 in. diam tubular rolls, ball bearing mounted, and spaced on 12 in. centers. It is assembled in heavy gage, 3 by 1 in. pressed steel channel frames. The load capacity of the unit is about 1200 lbs, evenly distributed. It also may be used to save labor in transporting masonry, short lengths of lumber and other materials. Mar-Rail Conveyor Co., 560 York Ave., Pawtucket, R. I.

Adams-Rite, the originators of the exclusive extruded design in Surface, Slide and Cremone Bolts, is still the only source for all styles! This patented construction with concealed guides eliminates all unseemly straps and scratching. Solid brass throughout. Four screws to each bolt insure rigid strength. Installation is easy and error proof and adjustments are made on the job without taking the bolt apart. Spring tension gives uniform pressure at all points.

All 3 widths of rods—½", 1½" and 2½"—have the extruded design. Lengths to 48". Harmonizes with any architectural design. Mortise and tenon strikes furnished. 10 standard finishes.

Extruded design in 2 sizes—2½" x ÿ" and 3" x ÿ". Ideal for stall and Dutch doors and for use in place of mortise and gem bolts. Surface, rim and mortise strikes furnished. 10 standard finishes.

New narrow, modern design enhances French windows and doors. Especially suited to very narrow wood or metal stiles. Rods, all with extruded design, in 3 widths—½", ½" and ¾". Reversible to hand. One or 2 handles available. Thumb button deadlock optional. Mortise, rim, angle and surface strikes furnished. 7 standard finishes.
SINCE 1888
MATOT
DUMB WAITERS
ELECTRIC AND HAND OPERATED
FOR
HOTELS • RESTAURANTS
INSTITUTIONS • CLUBS

OR WRITE TO . . .
D. A. MATOT, INC.
1533 W. ALTGELD STREET • CHICAGO 14, ILLINOIS

A school-house that
moves where wanted

OF COURSE, HALSEY TAYLORS WERE CHOSEN

To meet Seattle's problem of providing ade-
quate, primary school housing on a large
scale but for a temporary period, a new
unit—the transportable classroom—was
developed. Yet the pupils' comfort and
health were not overlooked. Halsey Taylor
Drinking Fountains assure hygienic,
contamination-proof advantages. Write for
latest literature.

The Halsey W. Taylor Co., Warren, O.

HALSEY TAYLOR Fountains

250 V. Convenience
Outlet

UNIT WITH CONVENIENCE
OUTLET.

Quality construction throughout. Approved by Underwriters Laboratories. Sold only through recognized
channels.

Send for Catalog and see the entire Paulding line of
wiring devices and Koalite fixtures.

UNSURPASSED QUALITY . . . AT A COMPETITIVE PRICE

JOHN I. PAULDING, INC.
NEW BEDFORD, MASSACHUSETTS
To Prevent Leaks in Masonry Joints— Specify

WEATHERCAP
set in MINWAX CAULKING COMPOUND
* Good for the life of the building. For free sample and specification data, mail coupon.

SEND FOR YOUR SAMPLE
Minwax Company, Inc.
11 W. 42nd St., New York 18, N. Y.
Please send me free sample of Weathercap with descriptive folder and specification data.

Name
Address
City
State

ARCHITECTURAL ENGINEERING

LITERATURE
(Continued from page 163)

Among the items included are: performance charts, engineering data sheets, dimension drawings, installation instructions and price lists. Other sheets cover accessories available for the blowers, 42 pp., illus. The Moore Co., 800 S. Missouri, Marceline, Mo.

Daylighting for Schools

Better Light For Our Children. Booklet offers simplified discussion on light-directing glass blocks used in daylighting classrooms. The first section is concerned with glare and contrasts in lighting, and its effect on children's health and posture. The remainder of the booklet treats on methods for daylight control, including the system combining glass blocks and clear glass windows. 24 pp., illus. American Structural Products Co., Ohio Bldg., Toledo, Ohio.*

Aluminum Flush Doors

All-Aluminum Kawneer Flush Door. Folder presents a series of fluted aluminum doors. Features and construction details of the doors are given. Notes and sketches describe the hardware and glass or louver panels available. Specifications and a table of sizes for single and double doors are included also. 4 pp., illus. The Kawneer Co., Niles, Mich.*

Automatic Dish Dispensers

Leverator Automatic Storage and Dispensing Units for China, Glasses, Trays. Booklet describes features and operation of the spring-operated, under-counter dispensers. Sketches, specifications and details are given for the various types of storage units available. Photographs are included of typical installations in cafes, restaurants, etc. 28 pp., illus. American Machine & Foundry Co., 485 Fifth Ave., New York 17, N. Y.

Registers and Grilles

Independent Registers and Grilles (Catalog No. 50). Covers a line of grilles, (Continued on page 250)

FARR COMPANY Engineers offer complete laboratory services to bring you better air filtration

Your air conditioning system deserves the best in air filters and standard FAR-AIR® filters will meet most of your requirements. However, if you are faced with unusual dust conditions, Farr Company's modern, well-equipped laboratory will help you select the proper type of filter to meet your particular problem.

These laboratory facilities are also used to constantly improve the FAR-AIR line to assure you of getting the very best air filtration when you install FAR-AIR products.

Send in your air filtering problem today or write for information on the complete FAR-AIR line.

Typical users of FAR-AIR equipment include:

Thomas A. Edison Co.
W. K. Kellogg Co.
Lever Bros., Co.
Pillsbury Mills, Inc.
Swift & Co.

FARR-AIR FILTERS

*Trade Mark Reg.

FARR COMPANY
Manufacturing Engineers
Los Angeles • Chicago • New York
M’d under license by Control Equipment Co., Ltd., Montreal
**FITZGIBBONS**

The best in steel boiler heat

A.S.M.E. code constructed
Hydrostatically tested
Hartford insurance inspected
S.B.I. code rated

Fitzgibbons Boiler Company, Inc. 101 Park Ave. New York 17, N. Y.

---

**ACCETED**

**PASS & SEYMOUR**

as a good investment
for dependable operation

Metropolitan Life Insurance Company builds the largest housing project in the world as a secure, long term investment for their funds. They know their business.

They chose P & S devices for “Parkchester,” “Peter Cooper Village,” “Riverton,” and “Stuyvesant Town.”

P & S devices in these projects mean space saving, and dependable service without maintenance or replacement costs for years.

---

**Need a Chimney?**

**Specify VAN-PACKER PACKAGED CHIMNEY**

**VAN-PACKER** gives your client a better chimney at lower cost.

1. Costs 20% to 50% less than brick.
2. Proven better draft...Quicker starting draft.
3. Built to last as long as the house.

**VAN-PACKER** gives you freedom of design.

1. Hang chimney from ceiling or floor and use valuable space underneath.
2. Locate heating unit independent of fireplace flue.

Write today for full descriptive literature on chimney and other types of installations.

**VAN-PACKER CORPORATION**

Rm. 1749, 126 West Adams St.
Chicago 3, Illinois

---

**P&S-Despard devices are convenient**

A switch, a pilot light, and a convenience outlet, or any combination of two or three devices of your own choosing can be assembled into one gang — right on the job — when you specify P & S — Despard. Sixty years of experience in the manufacture of precision-built devices are back of all P & S products. They are Underwriters’ approved... meet or exceed all Federal and REA specifications. Wise architects and specifiers know that “Interchangeable” is another word for time-tested “Despard,” and both mean satisfied clients. Write today for details on the complete Despard line.

**PASS & SEYMOUR, Inc.**

12 Boyd Ave., Syracuse 9, N. Y.

Maker of the famous P&S-Despard Line
Here's help in Specifying

EMERGENCY ELECTRIC POWER!

Model 10FL. 10,000 watts

Our special folder on Emergency Electric Plants contains helpful information on computing wattage requirements of standby systems, engineering and installation details. Complete specifications of Onan Emergency Electric Plants are included.

We also offer free engineering service on problems involving standby electricity. Write us on any question. There is no fee or obligation.

Onan Builds Standby Plants for any Type of Building
Many sizes—1,000 to 35,000 watts, for hospitals, radio stations, hatcheries, schools, industrial plants and many others.

Architectural Engineering

LIT E R A T U R E
(Continued from page 248)

cold air faces and registers. Each type is presented with descriptive notes, selection tables, weights, open areas, sizes and prices. The line includes wall, ceiling and floor outlets for heating or cooling. 36 pp., illus. The Independent Register Co., 3747 E. 93rd St., Cleveland 5, Ohio.

Grille Selector Slide Rule

Uni-Flo Grille and Register Selector. Slide rule designed to provide rapid sizing of Uni-Flo ventilating and air conditioning grilles. Grille size is based on noise level, air volume, throw and ceiling height. A table of maximum allowable noise levels for different installations is printed on rule face. The device is made of heavy cardboard, with plastic covered windows. Available at no cost from Uni-Flo Sales Div., Barber-Colman Co., Rockford, Ill.*

Kitchen Planning

Kitchen Planning On A Small Budget. Booklet discusses planning and remodeling of small kitchens. The Youngstown line of equipment is presented. The booklet was originally prepared for home economists and homemaking teachers. 20 pp., illus. Mullins Manufacturing Corp., Warren, Ohio.

Aluminum Windows and Doors

Tecler Aluminum Windows and Doors. Gives window frame and bar standard types and sizes, installation details and specifications. A section shows representative installations as well as details and specifications. Residential and commercial doors, hardware and specifications for aluminum windows are included. 12 pp., illus. Tecler Aluminum Products, 625 Yale Avenue North, Seattle 9, Wash.

Glare Reducing Glass

Coolite Heat Absorbing Glass. Explains and diagrams properties of Coolite which is said to afford clear vision and obviate "squint eyes" by reducing solar heat

(Continued on page 252)
LOWER PRODUCTION COST. America's huge FIRE waste is an overhead charge on production . . . an unfair burden on our manufacturers now competing for world trade. Control the FIRE menace. Let GLOBE Sprinklers protect your plant.

GLOBE AUTOMATIC SPRINKLER CO.
NEW YORK . . . CHICAGO . . . PHILADELPHIA
Offices in nearly all principal cities

THEY PAY FOR THEMSELVES

THERE'S NO PANACEA FOR VENTILATING ILLS

Burt Free-Flow

Burt engineers learned long ago that no one type of ventilator is efficient for all installations. Even the same building, when used for the manufacture of another product, may require ventilating changes. That's why the Burt line includes a type and size for every need — why Burt's 50-year experience is an important consideration in selecting your ventilating equipment.

MAIL TODAY

SHELLAC INFORMATION BUREAU
OF THE AMERICAN BLEACHED SHELLAC MANUFACTURERS ASSN., INC.
65 PINE STREET, NEW YORK 5, N.Y.

Please send, without obligation, "Standard Specifications on the Use and Application of Shellac".

BOWLING ALLEYS, gymnasiums, and dance floors finished with shellac remain beautiful, almost unmarred after months and months of heavy traffic. Looks like satin, wears like iron, even on surfaces that take the most abusive treatment. No wonder 75% of all wood floors are finished with shellac!

easy-to-apply • fast-drying

shellac

the finest finish you can specify for floors, for all "natural" woodwork

Unsurpassed as a primer and sealer for woodwork and plaster walls
Your architectural plans are in competent building hands when Merritt-Chapman & Scott is assigned the care and rearing of your brain-child. For M-C & S brings its specialized skills and unrivaled facilities to bear on each job... and gives full attention to every construction detail. The result is a building completed as designed, on time. As illustrated in the brochure offered below, no project is "out of our line.”

Your copy of this new M-C & S booklet will be sent immediately upon request to Dept. AR3.

MERRITT-CHAPMAN & SCOTT CORPORATION

Founded in 1860... now in our 90th year

GENERAL OFFICES
17 Battery Place, New York 4, N. Y.
Cleveland • Boston • New London

Your architectural engineering plans are in the hands of Merritt_Chapman & Scott. They bring specialized skills and unrivaled facilities to bear on each job, ensuring full attention to every construction detail. The result is a building completed as designed and on time. As illustrated in the brochure offered below, no project is "out of our line.”

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Melvin H. Best, Industrial Designer, 262 S. Greenwood Ave., Pasadena 10, Calif.
William Hudson Borthwick, Architect, 43 Kenneth St., Hartford 6, Conn.
Asher Gruenberg, Architectural Engineer, c/o Architectural Drafting Service, 3453 W. Grenshaw St., Chicago 29, Ill.
Interior Blue Print and Drafting, 268 Bernard Ave., Kedowa, B. C.
Thomas J. Irwin, Student, University of Manitoba, Winnipeg, Canada.
David Lubin, 104 North Broad St., Suffolk, Va.
Zvi Zemel, 23 A. Hashalom St., Haifa, Israel.

Specialty Lights by CANNON

(Above) DNP-1 light used in residence, with face plate removed, showing construction of (2 gang) plaster ring box cover.

Low Voltage or 115V
Plastic prism lens in red, green, blue, amber and crystal—inside surface sandblasted.

Face plates of Plaslon Stainless Steel or various Hemmerstone finishes.

Marine-type Pedestal light with "Pathfinder" head may be mounted on post, wall, ceiling, etc.

Construction of Pathfinder-head type prism lens combinations: 360°, 180°, or 3 prism 360° rings.

Write for a copy of the UPL-2 Specialty Lights Bulletin for complete information. Add PL-3 if interested in the Pathfinder type lights.

Write to Cannon Electric Development Company, Division of Cannon Manufacturing Corporation, 3209 Humboldt Street, Los Angeles 3, California or contact one of the 28 Cannon representatives located in principal U. S. A. cities. Canadian plant and offices: Toronto, Ontario. Export: Fraser & Hansen, San Francisco, California.

CANNON ELECTRIC
Here's a modern heating combination that home buyers today are going for "in a big way." Burnham BASE-RAY® Radiant Baseboards are every woman's choice. Connected in series, the installation saving in dollars is substantial. Hooked up with Burnham's sensational, oil burning PACEMAKER, lowest cost cast-iron boiler on the market, you'll save dollars again. Result: A modern, efficient radiant heating installation that actually costs no more than most ordinary heating systems. Try it for Sales Appeal. Use the coupon for full information.

**CAST IRON** — Both BASE-RAY Radiant Baseboards and PACEMAKER are made of cast iron, the metal which combines excellent heat conductivity with life-long service. Its durability has proven it to be superior to all other metals. Many cast-iron Burnham Boilers are still giving dependable service after more than a half century of use.

**Burnham Corporation**

"PIONEERS OF RADIANT BASEBOARD HEATING"

IRVINGTON, N. Y.

J. S. STAEDTLER, INC.

SINCE 1662
Sewaren Generating Station, New Jersey, first presented to architects and engineers in Architectural Record. Public Service Electric & Gas Company, Owners and Engineers.
Consulting Architects: Walker & Poor, New York
Photographer: Richard Garrison
First in preference among architects and engineers.

Architects and the engineers who work with them consistently vote Architectural Record their most useful magazine.

This continuing preference, found in survey after survey, stems from an editorial service exclusive with Architectural Record. By the use of Dodge Reports, editorial content is designed to be of maximum usefulness to active architects and engineers in terms of work actually on their boards. Result: Architectural Record serves the largest audience of architects and engineers ever assembled by a business paper, and has the highest subscription renewal percentage of any architectural magazine.

Start your program for 1951 by making Architectural Record the "pivot paper" on your building products lists. We'll be glad to supply you with any details you need to help your planning. Just call the nearest Record office.

And you'll use Architectural Record

First in architect and engineer circulation
First in preference among architects and engineers
First in number of advertisers and volume of advertising
First in architects and engineers reached per dollar

"Workbook of the architect-engineer"

Published by F.W. Dodge Corporation
119 West Fortieth St.
New York 18, N.Y.
Longacre 3-0700
the World's SECURITY depends on the UNITED NATIONS and the UNITED NATIONS DEPENDS ON Security

Revolutionary construction of building required the best in specialized door research and practical engineering. Flexibility of Design of "Uni-Motor" Operators and equipment directed by its own "electric brain" controls were especially adaptable for the many problems encountered. Quiet operation with heavy capacity construction were required. The combination of Security Doors and Operators give CONTINUED noiseless dependable operation.

b e a c a u s e

Security FIRE DOOR CO.
3046 LAMBDIN AVE. • ST. LOUIS 15, MO.
You can make it easy for your client to

SAVE 50% of NURSES' TIME AND STEPS with the STANDARD Patients' Phone System

There still are too few nurses and too little time.
The hospital whose architect recommends STANDARD Nurses' Call and Patients' Phone Systems will save substantially in each nurse's time, efficiency and disposition — and permit her to give better and faster service to more patients.

These visual-audio systems actually save half of the nurses' time- and energy-consuming steps! Ask for full information on STANDARD

Patients' Phone System  Nurses' Calling System
Doctors' Paging  Night Lights  Staff Registers

THE STANDARD ELECTRIC TIME CO.
81 LOGAN STREET  SPRINGFIELD, MASSACHUSETTS

Insist on this Seal...
when you specify ALUMINUM WINDOWS

This seal assures windows that, when tested by the independent Pittsburgh Testing Laboratory, meet the A.W.M.A. quality specifications for materials, construction, strength of sections, and minimum air infiltration requirements.

For complete specs covering "Quality-Approved" aluminum windows—double-hung, casement and projected — and names of approved manufacturers, consult Sweet's or write to Dept. R.

ALUMINUM WINDOW MANUFACTURERS ASSOCIATION
74 Trinity Place, New York 6, New York

Hershey bulk ice cream, Banjos, popsicles, and novelties are made at this plant in Chambersburg, Penna., where three Frick compressors provide refrigeration.

Hershey packaged ice cream is quick-frozen at -50 deg. F. in the 170-ft. tunnel at the Harrisburg plant, where five Frick compressors are installed.

Consult the nearest Frick Sales-Engineer about that quick-freezing, refrigerating, air conditioning or ice-making equipment you need. There are Branch offices and Distributors in all principal cities to serve you.

FRICK COMPANY
Waynesboro, Penna.
Also Builders of Power Farming and Sewnill Machinery
All the Surfaces of the Sills... Were Brush Treated With

CUPRINOL®

STOPS ROT
AIDS DIMENSIONAL STABILITY

For the recent Veterans Housing Project developed by the Lowell, Mass., Housing Authority the architects were Krokyn & Browne. They, and the Housing Authority, appreciated the greatly increased value of treating vulnerable construction lumber with Cuprinol, and the low cost for its application.

The specifications, therefore, called for all surfaces of sills, studs to above the first floor level, and all ends of joists over walls and bearings to be brush coated with #10 Cuprinol.

Cuprinol is a long established liquid wood preservative with copper, or zinc, naphthenate base that stops rot and termites, reduces the swelling and shrinking of wood, and minimizes grain raising and separation checks in plywood. Cuprinol is easily applied on-the-job by brush, spray or dip, and is completely harmless to the skin when handling. It is widely carried by lumber yards and building supply dealers.

See Sweet's Architectural File 5d/3 or write for information on types of Cuprinol for specific use.

CUPRINOL Division, Darworth Incorporated
3 Maple Street Simsbury, Conn.

EMPLOYMENT OPPORTUNITIES AVAILABLE

Positions Open

MARYLAND STATE DEPARTMENT OF HEALTH: has an immediate opening for an Architect. Applicants must be registered or be eligible for registration to practice architecture in Maryland (or in a State with comparable requirements). This is a State Merit System Position offering generous vacation and sick leave, automatic salary increases and retirement benefits. Standard Salary — $6000—$7500. Contact the Office of the State Employment Commissioner, 31 Light Street, Baltimore 2, Maryland, for complete information.

ARCHITECTS REPRESENTATIVE: Established national manufacturer of building materials will consider applications of men 30 to 40 years of age, with degree in civil engineering or architecture, and with building experience. The responsibility of the man selected will be to acquaint architects and engineers with our materials and systems and render service to these professions. Adequate schooling and information on products provided. State age, education, ambitions, business experience, salary requirements, etc. All applications treated in confidence. Reply Box 517, Architectural Record, 119 W. 40th St., New York 18.

CONSTRUCTION SUPERINTENDENT: with experience in light building construction. Position with sugar company in Eastern Cuba. Man to be in charge of maintenance, repair and partial reconstruction of employees' housing and community facilities. Must have sound experience in general building construction, job organization and supervision. Some knowledge of Spanish important. Position includes use of house and moving costs U. S. to Cuba. Salary $7000 to start. Submit qualifications in writing. Box 518, Architectural Record, 119 W. 40th St., New York 18.

EMPIRE AT LOW COST!

Combination
METAL WEATHERSTRIP
SASH BALANCE

ZEGERS Dura-seal

Dura-seal is a combination of metal weatherstrips and sash balances...in one unit! Provides complete weather protection plus smooth, noiseless, finger-tip window operation. Eliminates paint-stuck windows. Quickly and easily installed, Dura-seal is used with a stock plank frame and stock sash. Plank frames permit use of narrow mullions and trim providing more glass area. Less expensive than weather-stripping combined with any other type of sash balances.

WRITE FOR INFORMATION

ZEGERS INCORPORATED
8092 South Chicago Ave., Chicago 17, Ill.

ARCHITECTURAL RECORD
Always Specify
"METAL WORK by FISKE"

This cast iron Veranda — (Design 77-S) — produced by FISKE for the Boyette Apartments, Charlotte, N. C. CHAS. W. CONNELLY, Architect.

Many of our cast iron Veranda designs have a heritage of historical authenticity — and so we are able to produce from these designs — the most pleasing effects.

Visit our showroom display of Ornamental Iron Works: Verandahs, Balconies, Railings, Entrances — or write for catalog.

J. W. FISKE Iron Works
80 Park Place • Dept. 10 • New York 7, N. Y.
See our catalogue in Sweet's 66/8

By Specifying BECKLEY-CARDY CHALKBOARDS For Your Next School

A schoolroom chalkboard (blackboard) is more than just a writing surface for chalk. It is part of the wall and so must have strength, smoothness, be warpless, damp resistant, writable with ordinary chalk, glareless and easily erased clean.

For over 40 years Beckley-Cardy Chalkboards have been proven in use, to embody all these qualities.

Modern installations prefer the eye resting "Lite-green" color to the old proverbial blackboard.

OFFERED IN TWO TYPES

Beckley-Cardy Chalkboards are available in two types of base — to suit any architect — both are available in Litegreen or black writing surface.

Slatebestos — Permanent, everlasting, fire resisting and damp proof cement-asbestos base ... Ideal, smooth, close grained writing surface, in either black or Litegreen ... the preferred color. Panels are 3 1/2 and 4 feet wide in 5-6-7-8 feet lengths — 9/16 inch thick. The finest possible board for new modern schools.

Videoplate —

Newest development in Chalkboards — a perfect writing surface on a light weight pressed wood backing — less than 2 lbs. per square foot. Available in both black and Litegreen ... the preferred color. Panels work easily — will not deteriorate in dry or dampness. Panels 3 1/2 and 4 feet wide and any length to 12 feet. An unequalled construction for remodeling as well as new work.

For full details of these outstanding Beckley-Cardy Chalkboards see Sweet's 1950 Catalog or write us for samples and literature.

CHALKBOARD DIVISION

Beckley-Cardy Co.
1630-1634 Indiana Ave. - Chicago 16, Ill.
HERWIG
THE WORLD'S LARGEST LINE OF CAST METAL Ornamental Lighting Fixtures

HEAVY CAST IRON BRONZE ALUMINUM
250 EXTERIOR- INTERIOR DESIGNS

Send for CATALOG-50 Today

THE HERWIG COMPANY
1757 Sedgwick St. • Chicago 14, Illinois

HAR-VEY ROLLING DOOR HARDWARE
introduces an Economical

New Hanger for Wardrobes

Exclusive new features that save time, trouble, and money!

Quick, simplified installation
Hung from the outside, doors can be easily slipped in place after shelving is installed.

Space between doors can be varied
— no limit on number of doors

Less headspace is required

Economically designed for lower cost
Quality made of 100% rustproof materials with extruded aluminum track

This new Har-Vey Hardware is ideal for cabinets, wardrobes and similar installations

Learn all the advantages today — mail this coupon now

Address: Hardware Division T

METAL PRODUCTS CORPORATION
807 N. W. 20th St. Miami, Florida

Please send me your free folder on rolling doors & Har-Vey Hardware

NAME ___________________________ COMPANY ___________________________
STREET ___________________________ CITY ___________________________ STATE ___________________________

ELEVATOR SELECTION MADE EASIER

Here's "what you should look for" elevator information for all architects.

"Elevator and Dumbwaiter Planning"—complete selection and standards information in a new 58-page booklet.
"Vertical Transportation For Modern Hospitals"—specific features which should be incorporated in hospital elevator planning.
"Shepard RAM LIFTS"—low first cost, low operating cost oil hydraulic lifts for four floors or less.

WRITE FOR YOUR COPIES TODAY

SHEPARD ELEVATOR COMPANY
2442 K COLERAIN AVENUE, CINCINNATI 14, OHIO

Always specify

HAWS for Highest Quality

HAWS Electric Water Coolers easily adapt to remote installations of HAWS Drinking Fountains... thus serving several locations.

• A COMPLETE LINE of coolers, fountains, faucets, equipment, filters and accessories. • A reputation for reliability since 1909. • Check in Sweets, or write for complete HAWS catalog.

HAWS DRINKING FAUCET CO.
1441 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA
Agents and Sales Representatives in All Principal Cities
If you were to sit down and write out a description of the "perfect" exhaust eliminating system for a service department, chances are you'd end up with a word picture of the Kent-Moore J 2980 MONOXIVENT Set. It's designed for use with any underfloor system, and its four important advantages are:

**LOW INSTALLATION COST**—readily installed in upturned "Y" section of main duct. No individual "T's" or branch duct required.

**CONCEALED HOSE ASSEMBLY**—asbestos packed flexible stainless steel tube and special taping adapter slide down under floor for safe keeping when not in use. No storage problem, no unsightly hoses hanging overhead.

**QUICK, CONVENIENT USE**—just lift the floor cover plate and MONOXIVENT is ready for use—quickly, easily attached, detached and stowed.

**LONG LIFE, LOW COST OPERATION**—fully protected against damage, can't get lost or "borrowed." Minimum frictional loss assures efficient, economical operation. Complete installation data furnished upon request...write for it today!

KENT-MOORE ORGANIZATION, INC.
GENERAL MOTORS BUILDING • DETROIT 2, MICHIGAN

---

A clear liquid sealer which penetrates deeply into masonry surfaces.

The hydrocarbon solvent in Formula No. 640 evaporates, leaving the pores filled with a balanced formula of seven different waxes and resins.

For complete specifications and a description of our other products—cement hardener, floor mastic, rubberized enamel, foundation coating, plaster bond, etc.—see our catalog in Sweet's Architectural File 9a/8 under "Waterproofing and Dampproofing."

WRITE OUR ENGINEERING DEPARTMENT for office test kit, technical data, or regarding any special problem.

J. Wilbur Haynes, Engineer

HAYNES PRODUCTS CO.
4007 PARNAM STREET • OMAHA 3, NEBRASKA

---

THE

hot-dipped, galvanized

PRIME WINDOW

(VERTICAL SLIDE)

The durable rust-resisting Armco Metal Unit with ADVANTAGES THAT APPEAL TO YOUR PROSPECTS

RUSCO is a complete, factory-assembled, factory-painted metal unit...contains glass, screen, weather stripping, installation members (wood or metal), self-storing insulating sash (optional).

**ADVANTAGES LIKE THESE HAVE SALES APPEAL!**

1—A year 'round unit...no screens or storm sash to buy...
2—Built-in ventilation control...
3—Glass and screen panels removable from inside for easy washing...
4—No weights, cords or balances...
5—No binding or sticking...
6—Waterproof felt weather stripping...
7—Lumite plastic screen cloth—no deterioration or streaking...
8—Automatic locking in closed and ventilating positions.

**ADVANTAGES FOR THE BUILDER TOO!**

1—All working parts are of tubular, hot-dipped galvanized Armco Ingot Iron Zincgrip...Bonderized and finished with baked-on enamel...
2—No field painting required (except wood trim when used)...3—Glazing and on-the-job refitting are completely eliminated...
4—Practical for any type construction...
5—Can be installed in less than half the time required by ordinary window units.

A Quality Product, competitive with the lowest price window unit on the market.

You can get the facts about Rusco Prime Windows from the Rusco Distributor in your territory...OR WRITE DIRECT TO THE F. C. RUSSELL CO.

DEPARTMENT 7-AR 110, CLEVELAND 1, OHIO

Manufacturer of the famous Rusco all-metal, self-storing combination screen and storm sash.
STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946


1. The names and addresses of the publisher, editor, managing editor, and business managers are:
   - Publisher, F. W. Dodge Corporation, 119 West 40th Street, New York 18, N. Y.; Editor, Harold D. Hauf, 119 West 40th Street, New York 18, N. Y.; Managing Editor, Emerson Coble, 119 West 40th Street, New York 18, N. Y.; Business Manager, Robert F. Marshall, 119 West 40th Street, New York 18, N. Y.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)
   - F. W. Dodge Corporation, 119 West 40th Street, New York 18, N. Y.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, state) NONE.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of any corporation as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. Thomas S. Holden, 119 West 40th Street, New York, New York; Laura Morgan Jackson, "Stoneswall", Ridgefield, Connecticut; Frank M. McIntosh, 524 Fifth Avenue, New York 18, New York; George W. Morgan, 90 Broad Street, New York 18, New York; Gerald D. Morgan, 5509 Edgemore Lane, Bethesda, Maryland; Helen D. Morgan, 399 Park Avenue, New York, New York; T. Oliver Morgan, 25 Ridge Croft Road, Bronxville, New York; T. Oliver Morgan, Trustee, 25 Ridge Croft Road, Bronxville, New York; Cordelia Dana Nast, Apt. 15 B, 60 East 96th Street, New York, New York; Minnie C. Ort, Port Murray, R. D. New Jersey; George H. Partridge, 9 Towers East, Bronxville, New York; Jane A. Pratt, c/o Manufacturers Trust Company, 741 5th Avenue, New York, New York; William J. Quinn, 15 Broad Street, New York, New York; John J. Traynor, Trustee, 13 Broad Street, New York, New York; Marcus Wayne, 202 Lake Cove Apts., 12020 Lake Avenue, Lakewood 7, Ohio; H. A. Whittam & Company, 165 Broadway, New York, New York; Chauncey L. Williams, 119 West 40th Street, New York, New York; Helen Morgan Young, 71 Summit Avenue, Bronxville, New York.

Sewn to and subscribed before me this 29th day of September, 1930.


END THE CATALOG MESS!

$5.65

END THE CATALOG MESS!

EASY OPENING SECTIONS FOR SHELF CHANGES.

NOW

GET EVER READY LEAF CATALOG HOLDERS!

EVER READY Catalog Holders keep catalog data at correct reading angle for comfortable hand free use. They can be used on sales counters, buyer's desk and in warehouses for quick reference. Dozens of other uses.

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!

END THE CATALOG MESS!
This can be said of no other gift: When you give books you give inspiration, guidance and hours of delightful respite from the cares which occasionally beset us all. And no other gift so faithfully conveys your thoughtfulness.

On the following pages, we have described and illustrated a number of books tailored to the interests of architects, engineers, contractors, technicians — just about everybody in the building field!

Some, such as "Time Saver Standards," are essentially technical; others are more general in treatment and content. There are how-to-do-it books, cultural books and books plainly meant for nothing more than sheer relaxation.

There's something for everybody . . . something appropriate to the mood, mind and mien of all your friends.

Take advantage, now, of this convenient and thoroughly satisfactory solution to the Xmas shopping problem. Treat yourself, too! Simply mark your selections, attach your check and return the coupon to ARCHITECTURAL RECORD. Avoid the last-minute rush. Act TODAY.

BOOK DEPARTMENT, ARCHITECTURAL RECORD
119 West 40th Street, New York 18, N. Y.

See following pages for titles, contents, other details
Announcing... New, Enlarged Edition of

Time-Saver Standards


A grand total of 319 different Time-Saver Standards... 888 pages... more than 1,000 illustrations, charts and diagrams.

The publication of the first edition of Time-Saver Standards was an event of first magnitude in the architectural field. It has been acclaimed by thousands of architects the country over... is in current use as a standard text in more than fifty architectural schools.

Now, in its enlarged form, and containing 232 additional pages of vital information it becomes more than ever an indispensable source of essential architectural data on...

ARCHITECTURAL DESIGN
ENGINEERING DATA
MATERIAL TECHNOLOGY
BUILDING PRACTICE

Designed for the use and guidance of architects, engineers, specification writers and other building technicians, this complete collection of these now famous authoritative monographs on technical aspects of construction cuts research time... offers proved-by-experience solutions to hundreds of structural problems.

Well-Organized 12-page Index

This wealth of data is carefully organized and painstakingly presented. It is so thoroughly indexed that there are references and cross-references... occupying twelve pages of closely set print.

Experience shows that a single item in TIME-SAVER STANDARDS can well save hundreds of dollars in economy construction... save many hours of your valuable time.

Special Pre-Publication Offer

Although this new, up-to-date edition of TIME-SAVER STANDARDS will be almost one third larger, the regular price will be only $12.50.

But if you place your order now—before December 31, 1950—you can take advantage of the pre-publication price of $10.00, a 20% saving on the regular price. But, vastly more important, you'll be sure to get your copy. The first edition was a sell-out before publication.

Planning Stores That Pay

by

Dr. LOUIS PARNES, A.I.A.

In "Planning Stores That Pay," Dr. Parnes demonstrates the amazing degree to which architecture — as expressed in counter lengths, traffic flow, etc. — speeds and increases retail sales, not only for department stores but for specialty and chain stores. Point by point he abstracts details of the store to illustrate the right and wrong aspects of profit-making design. He shows how to compute such diverse factors as, say, the ideal width of show windows and the optimum number of chairs in a shoe department.

With more than 500 illustrations, he explores every detail of the store and its arrangements — entrances, arcades, show windows, transportation systems, furniture and fixtures, receiving and shipping facilities, floor and department layouts, display arrangement and lighting, and all the hundreds of items that go to make up a modern merchandising machine. Everything is calculated from the viewpoint of efficiency, and the contribution of each part of the store to the process of selling goods profitably is the criterion of its recommended design. Diagrams, charts and scale drawings, from hundreds of leading stores and from the works of America's greatest store architects, prove each point graphically.

A Basic Textbook on Store Architecture

"Planning Stores That Pay" is a book of basic principles, but specific ideas flow from its pages in rapid succession. A single chapter has enough suggestions to launch a number of long-term projects in store layout, equipment, etc. It covers every detail of modern stores and is applicable to the redesigning of myriads of stores now obsolete. Reissued in new binding, "Planning Stores That Pay" is now available at the special price of $10.

Prize Homes

This portfolio contains the ninety-two houses, including the twenty-four prize winners and sixty-eight other excellent designs, submitted in the Chicago Tribune's $24,000 Prize Home Competition. Here the architects, unfettered by clients, and lured by $24,000 in prizes, drop the reins and let their trained imaginations go all out. Here you fully realize what a wonderful work of art the modern home is coming to be — in terms of utility, livability, and unobtrusive beauty.

Each house is depicted on a big, white album page: first, with the architect's sketch, with prize winners in luminous full color; then with floor plans, plot plans, elevations and details; finally, with a simple text that points out the salient features.

As a book for study or relaxation; as a book for gracing the living-room table; as a book for the family or friends, this is truly a dual-purpose book, easily worth the cost. De Luxe edition, $5.00.
Marcel Breuer: Architect and Designer

by PETER BLAKE

This fascinating life story of the great contemporary architect, Marcel Breuer, is that rare publishing achievement—a biography which captures wholly the essence and spirit of its subject.

It is a book that will strike a responsive chord in the heart of every architect and designer; it is a book that will instruct, charm and inspire you, and one which you will be proud to display on your library shelf.

Peter Blake, author of the book and Curator of Architecture and Design for the Museum of Modern Art, has drawn heavily on actual reproductions of Breuer's work to explain in terms more graphic than words the architect's growth and development. To many, this visual treatment alone will be worth many times the modest price of the book. 196 illustrations, 128 pages, $4.00.

The Last Lath

by ALAN DUNN

"If these cartoons don't strike you as funny, then you've never built a house, or even lived in one."—San Francisco Chronicle.

"If a housewarming present is puzzling you, this is the answer."—New York Herald Tribune.

An album of 152 cartoons on Real Estate and Building. Here is a perfect gift to give to: clients, professional friends, business associates.

For many years readers of Architectural Record have laughed at the sly and intimate cartoons of Alan Dunn, nationally famous "New Yorker" cartoonist.

In response to repeated suggestions, we have published in one book, entitled "The Last Lath," a selection of 152 Alan Dunn cartoons (32 hitherto unpublished) on the real estate and building business.

Such cartoons, in book form, have been found the most effective, inexpensive gift of our time. They come as a big surprise. They are enjoyed by the whole family. They are shown to friends and neighbors. And the giver is long remembered for his wise and witty choice.

"The Last Lath" is a handsome album: 152 cartoons on 96 pages, 8 x 10, on 70-lb. paper, with a black-and-yellow picture jacket. Take advantage of this exceptional opportunity to delight your friends. Make a list of them now and then order at these money-saving quantity prices: $2.50 for 1 to 5 copies; $2.25 for 6 to 100 copies; $2.00 for 101 or more copies.

Schools for the Very Young

by HEINRICH H. WAECHTER

A. I. A. and ELISABETH WAECHTER

Though many volumes have been written about school design, "Schools for the Very Young," a brand new book just coming off the press, is—so far as we know—the first in which an architect and a child educator have collaborated to provide an up-to-date treatise on the requirements of the particular type of school demanded for the proper training of the very young child.

Beginning with a brief yet adequate historical and philosophical background, in which the development of the theory and practice of child education is discussed, the book goes on to describe the pre-school in action, noting the events of the school day and the corresponding environmental needs of the children and their teachers. A number of examples of existing pre-schools are presented with critical comment. Much detailed information is given concerning the general and particular space appointments and arrangements called for by the activities peculiar to such institutions. Since one of the authors is especially concerned with city planning, the relation of the pre-school to its neighborhood and community is thoughtfully analyzed, and the many different types of pre-schools that have developed to meet special conditions are enumerated and explained.

The outdoor space and its proper equipment are thoroughly covered from the standpoint of a capable architect who has given much thought to the problem and who is thus aware of the many points of detail that go to make up a successful pre-school establishment. Technological problems of construction, lighting, ventilation, mechanical equipment, etc., are considered in the light of the most recent practice. A wealth of illustrations add both interest and information, and a selective bibliography will aid further study.

Mr. and Mrs. Heinrich H. Waechter's combined talents and interests make them ideal co-authors for such a book as this. In 1941 the American Institute of Architects awarded Mr. Waechter an Edward Langle Schoolship for advanced work in research on the subject of "Pre-Schools" and the resultant year of combined study with Mrs. Waechter led to this thoughtful book.

You can be among the first to have a copy of this new book by placing your order now. 208 pages, 7½ x 10, stiff binding. Price $6.50.

Landscape for Living

by GARRETT ECKBO

A brilliant and practical book by a recognized authority on landscape design. Planned with insight and craftsmanship, "Landscape for Living" outlines the major problems in the field of landscape design and offers specific solutions.

This ground-breaking text establishes a foundation for understanding landscape design; traces its history; explains its functions; analyzes developments; details principles of design and planning.

Entire sections are devoted to such basic and practical considerations as materials, plants and planting, structural elements, site conditions, parks, gardens, public buildings, group housing.

Material Presented Graphically

It devotes page after page to photographs, diagrams and textual analysis of actual gardens, parks, and public buildings. Problems are explained and solutions given.

"Landscape for Living" is a handsome book of 288 pages on heavy coated stock; contains more than 400 illustrations, including site plans, drawings, sketches. Page size 8¾ x 10½". Price $10.00.

Turn page for convenient order form

NOVEMBER 1950
Hospital Planning
by CHARLES BUTLER,
F.A.I.A. and
ADDISON ERDMAN, A.I.A.
A complete, authoritative manual, featuring the new and unprecedented facilities demanded by advanced techniques in hospitalization.
Hundreds of case histories covering the most striking features of 51 modern hospitals and the work of 30 celebrated architects—posing actual problems and showing how they were solved.
266 illustrations: 32 photographs, 11 site plans, 187 floor plans, and 38 special unit plans of rooms, wards, departments, and construction details. 232 pages, 8½ x 11. Stiff cloth binding. Comprehensive Index. $15.00.

Psychiatric Sections in General Hospitals
by PAUL HAUN, M.D.
Chief, Hospital Construction Unit, Psychiatry Division
Veterans Administration
TODAY, no hospital is complete without a psychiatric unit. The problem, however, is a complicated one because in the design and construction of such a unit every aspect of the environment must be strictly controlled.
Fortunately, all the architect need know is completely outlined in "Psychiatric Sections in General Hospitals." Here are specific, reason-why instructions covering everything from shafts and stacks to hydrotherapy suites.
"Psychiatric Sections in General Hospitals" is by all odds the most provocative work on specialized architecture since the publication of "Hospital Planning." It is a non-technical book for technical men; one that gives, for the first time, clear and reasoned specifications on a branch of architecture that has leaped from obscurity to prominence in a few short years. Price $4.00.

The Restoration of Colonial Williamsburg
The Greatest Adventure Story in the Annals of Architecture
How architects trained in Egyptian archeology forced the secrets of the sumptuous lost capital of Colonial Virginia...discovered "this incomparable monument to early American history and art"...and reconverted it into a going community!
The Modern Mecca for Americans is pictured with 125 illustrations, including a portfolio of radiant photographs by F. S. Lincoln. So popular has been this picture book of Colonial Williamsburg that more than 70,000 copies have been sold. Now this celebrated 104-page reprint, 9 x 12, bound in heavy cloth, is available at the mass production price of only $2.50.

Use this coupon to order Today
ALUMILINE makes "light" of modernization problems with Alumiline products that assure BEAUTY - STRENGTH - DURABILITY

1. Extruded Aluminum Store Front Mouldings.
2. Extruded-Line Factory Assembled Entrances.
3. Narrow Stile Hollow Metal Doors, (Entrances and Metal Doors furnished in Aluminum or Bronze).
4. Custom Built Entrances and Doors to meet any condition.
5. Standard Stock Units for quick, easy installation.

Our Alumilated Aluminum Corrosion Resistant Finish greatly enhances appearance, and protects from scratches and marring.

Send for A.I.A. Building Products Literature Competition award-winning catalogue: "Construction Details and Selector Guide - Alumiline Store Fronts."

THE ALUMILINE CORPORATION
339 ELDERT STREET
BROOKLYN 27, N. Y.

NEW LOW GLAZING COSTS!
NEW HIGH GLAZING QUALITY!

SPECIFY
TREMGLAZE
MASTIC GLAZING COMPOUND
IN COLORS

Requires No Painting

- Specify Tremglaze Aluminum color. It bonds to aluminum, requires no painting—ever. Proven on actual jobs for over ten years. Meets Aluminum Window Manufacturers Association standards.
- Specify Tremglaze yet pay no more for completed window installations than with a putty job. Save on the paint contract; specify—"Paint first—then Tremglaze." Put paint on the window where it belongs—Tremglaze requires no paint. Save on cost of cleaning glass also.

Consult your local Tremco Representative or write to:
THE TREMCO MANUFACTURING CO.
CLEVELAND 4 • TORONTO

Write for Catalog on Lawson Bathroom Cabinets, Lavatory Mirrors and Chrome Accessories . . .

THE F. H. LAWSON CO.
802 EVANS ST., CINCINNATI 4, OHIO

WORLD'S LARGEST BUILDERS OF BATHROOM CABINETS
There is no such thing in the field of professional orchidology as a "Jungle" orchid. No prize beauty ever "just grew." It takes large measures of patience, love and the nation's best horticultural brains to raise an orchid properly. At McKee Jungle Gardens, Vero Beach, Florida, one of the South's leading departments of orchidology under the direction of David C. Fairburn, Jr., has added air conditioning to the list of requirements for advanced orchid culture.

Rare hybrid orchids must be planted in flasks of sterile food solution under carefully controlled conditions. At McKee Jungle Gardens, Worthington air conditioning equipment provides precise temperature and humidity requirements for this delicate operation.

Properly controlled interior climatic conditions are the secret of successful development of orchid seedlings. The Worthington air-conditioning plant at McKee Jungle Gardens assures temperatures accurate to a fraction of a degree.

Arthur G. McKee, owner of the project, has raised many uncommon hybrid orchids in greenhouses, developing new strains under controlled temperatures. Some of these have been developed to the point at which they withstand outdoor temperatures and may live year-round in outside locations throughout the 80-acre Jungle Gardens area. But many rare strains of orchids spend their entire lives—and it takes an average of seven years for an orchid to mature—breathing conditioned air indoors.

At Vero Beach a large fortune in orchids is depending on Worthington air conditioning units. Perhaps the greatest single triumph for Worthington and McKee Jungle Gardens has been the successful raising of the ultra-rare Odontoglossum orchids. These are spray orchids native to 15,000 foot altitudes and low temperatures of the Andes Mountains in South America. Attempts to grow these orchids in the South—and in many parts of the North—have ended in dismal failure because the plants could not withstand radically hot summer temperatures. At McKee Jungle Gardens the Odontoglossums are living in a Worthington-made mountain atmosphere that has not only encouraged their healthy growth, but has also aided several complicated hybridizations. Future plans for the Odontoglossum call for a process of "air-conditioning the plants back to the outdoors," a process in which, through scientifically-plotted temperature changes, the plants can be made to adapt themselves to the normal outdoor climate of Florida and other southern states.

Another Big Store is Worthington-Conditioned

The Detroit News—publisher of the newspaper with the largest ABC-recognized home-delivered circulation in the country.

Worthington centrifugal compressor with condenser and cooler in Detroit News building.

Every minute 240,000 cubic feet of cooled, freshened air is delivered throughout the building to air conditioning offices, press room and composing room. In the latter two rooms, humidity is carefully controlled, kept low in the composing room, and higher in the press rooms due to static electricity.

Source of the cooling is two Worthington centrifugal compressors, of 200 and 250 ton capacity.

Other Worthington equipment in the installation includes two coolers and condensers and water pumps.

Worthington Freon-12 condensing units and AHU air conditioning units at McKee Jungle Gardens.

A complete line . . . in which all the vital components are made, not just assembled by Worthington. For more worth with Worthington, see your nearby Worthington distributor (consult Classified Telephone Directory).
"WEAR CONDITIONED" surfaces

- for Beauty
- for Color
- for Sanitation
- for Low Maintenance

Only Genuine Beauty Bonded FORMICA has:

1. Newest and largest selection of...
2. Clear, clean, unclouding color and wood patterns with...
3. Super smooth, blemish-free cabinet maker's finish from...
4. Thirty seven years continuous production experience.

New 16 MM color sound movie "Living With Formica" pictures uses and how it is made. Available now for group showings. Write for film. Formica, 4632 Spring Grove Ave., Cincinnati 32, Ohio.

"Just as good" is a fable.
Look for the label.
Insist on genuine Beauty Bonded Formica.