A.I.A. Board of Directors has voted Institute's Gold Medal to Frank Lloyd Wright. Wright, often critical of A.I.A., will accept. He tells P/A that when a professional society makes its highest award "regardless of affiliation, bias, or rebellion, it shames non-co-operation." He adds, "My hat is off to the A.I.A." This is result of delegates' resolution passed at last convention.

Other A.I.A. news is that both Ralph Walker, N. Y. architect, and William Wilson Wurster, Calif. architect and M.I.T. architectural Dean, have been nominated for A.I.A. presidency. Thus for the first time in memory of many members there will be a contest for this office.

University of Cincinnati is sponsoring research in reflective radiation for heating and year-round conditioning. Studies will be in house whose walls and ceilings are embossed aluminum foil, reflecting indirectly electric radiant heat, cooling coil sources, and fluorescent light installed in cave.

Dept. of Commerce predicts $18,750,000 of construction in 1949. Producers' Council promises ample materials for this total. (For P/A's analysis of materials supply see this month's PROGRESS REPORT.)

Guesses are that residential construction will decline in 1948 (housing starts are now predicted at somewhat less than 1948's 925,000) as will industrial work and amusement buildings. Increases are expected in commercial categories, in utility structures, and in public buildings of various sorts. Guesses differ on trends in private religious, educational, and health building.

Release of State surveys under Federal Hospital Act shows need for double present number of acceptable beds—about 900,000 exist, about 900,000 more are needed for adequate care.

Model State legislation, empowering municipalities to adopt standard up-to-date building codes or code sections "by reference" has been drafted by HHFA with assistance of other agencies. Such state enabling acts would save excessive publishing costs standing in way of local code revision in many places.

First FHA loan under new housing act for prefabricated houses went to house designed by architect William Lescaze for Reliance Homes. 230 of the houses will be erected near Philadelphia. Second such loan was for 100 poured concrete prefab to go up in N. J.

Several new board products promise useful application to construction problems. For example, Stramit, heat-pressed dry straw, will be low in price, fire-resistant, various thicknesses, 4' x 8, 10 or 12'. Coston & Frankfort are designing a handsome plant for the manufacturing company in Oklahoma City, using the material for construction.
Use of Stran-Steel framing throughout the fifty-nine buildings of the $2,752,000, 300-family McConaughy Terrace garden-type apartments, now under construction in New Haven, Connecticut, is providing fire-resistant, long-life buildings with real economy.

Since this project is being amortized over a 50-year period, these factors are of vital importance. When plans for the project were formulated, Douglas Orr, architect, and the New Haven Housing Authority, owners, believed that the precision, simplified Stran-Steel framing system could provide premium quality and fast construction.
Cost of McConaughy Terrace's fire-resistant construction is on a par with ordinary frame construction, because of the savings in time and the simplified procedures possible with Stran-Steel framing. Moreover, a permanently rigid, rot and termite-proof Stran-Steel framework insures lower maintenance costs and long life.

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Stran-Steel framing is making McConaughy Terrace apartments better buildings without increasing costs. If you are planning new construction—commercial, industrial or residential—you can get the same advantages from this modern framing system.
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OKLAHOMA. "Our entire family praises our Servel All-Year Air Conditioning unit, and we are always proud to have visitors come in," writes Mr. G.W. Athey of 1106 W. York Street, Enid.

LOUISIANA. "We are very much satisfied with our investment in a Servel All-Year Air Conditioner," states Clay W. Beckner, 5 Newcomb Boulevard, New Orleans.
TEXAS. "We keep our home cool all summer and warm all winter with Servel All-Year Air Conditioning," comments Mr. Nelson Waggener, 7700 Mockingbird Lane, Dallas.
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THE ILLUSTRATION: Mr. O. T. Jackson, Trane Art Director, puzzles over scale models of Trane products and a sketch of the 134-foot Trane exhibit to be displayed at the Heating and Air Conditioning Exposition which opens in Chicago January 24.

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schools the cornerstone of, to me, a most disturbing and destructive philosophy. We have had some of these men in our office and have found their ideas not only personally disturbing, but an actual detriment to efficient office procedures. They have behaved identically in three basic ways. First, as "artists," they cannot work with any happiness on a building not in one of the international style modes. They are chained to their style and thus, even when working on such a building, cannot exercise any real creativeness. Second, they can only work out a problem in terms of taste. The discipline, in fact the whole concept of working out a problem in terms of its own merits and of its materials, has to be learned in the office. Third, they meet all aspects of architecture not already integrated into the international style framework (including clients) with constant and corrosive criticism.

This absolutist philosophy is in part based, without question, on the work and writings of the several men mentioned in your editorial. And this, I believe, is a grave, if understandable, error. The absolutist type seems to be overinfluenced by the specialties of these very strong men and to ignore the message which—collectively—they have to offer. For my own part, I think of these architects and historians as the teachers from whom I have learned most, as the men who continue to stimulate and point out first one aspect and then another of the architecture of our time. I do not wish to imply that I agree with all of them all of the time. In fact, the article you quote from by Philip Johnson and Peter Blake, was written as a vehement attack on one of mine preceding it in the Magazine of Art. Nevertheless, I believe that as a group, each one contributing in his respective, special, and sometimes narrow way, explores the whole field. Collectively, their work and writing seem to me to indicate that the proper studies of the architect are:

History (including art).
Materials (including research).
People (including sociology).

All three of these complexes make architecture. No one can be ignored or put above the others. But the fact remains that architecture is for people, not other architects, nor historians, nor critics, nor Museums of Modern Art. Buildings are for men, women, and children with colds in their heads, hernias, flat feet, and the chicken pox. They are where miserable humanity trips on the stairs, falls in the bathtub, where legs are removed, and where personal tragedies occur. Buildings are also for triumphant humanity, where courage and freedom are fostered, where knowledge is increased and handed on, where the need for beauty and love is most often satisfied. Buildings, above all, must respect people's weaknesses—reflect their strengths.

It is, perhaps, the utter obviousness. The vague inclusiveness of all this which results in its being so often forgotten, even by the practicing architect. To remember people, to perceive buildings as the framework in which ugly, passionate, cold, and beautiful human beings live, is to be incapable of style, monumentality, and authoritarianism. We need more creativity and less style, more workmanship and less taste, more appreciation and less criticism. Your editorial, if it helps only one architect to a sense of the reality of architecture, will have been well worthwhile.

ROBERT WOODS KENNEDY
Kennedy & Smith
Boston, Mass.

EXCELLENT START
Dear Editor: Your message on the overbearing nonsense of style and esthetics has been long overdue. I believe it is going to do a great deal of good—and more discussion would be desirable. I congratulate you on an excellent start.

ISADORE ROSENFIELD
New York, N. Y.
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Refer to Sweet's File,
Architectural Section 100/9

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Views

(Continued from page 8)

Wright's work is "Architectural finger-painting," there can't be much tolerance with the younger men who are only working around the periphery of the understanding enjoyed by the great. The ones who are pulling all the hair will be the last ones to admit they are pulling apart their contemporaries' architecture "because it is, or isn't, one style or another, monumental or not, cottagy or internationally, or what have you." Modern Architecture is still having growing pains and while it is, there will be lots of nonsense written and said about it; lots of brickbats thrown and lots of buildings built.

Too many private architects have tried to be characters with windsor ties, strange clothing, flowing hair, and a cape. But they become prima donnas. The new architects coming out of the best schools today should learn the team spirit and the ability to collaborate while acquiring a sense of tolerance.

HENRY L. KAMPHOEHN, Dean
School of Design
North Carolina State College
Raleigh, N. C.

Dear Editor: Thank you for sending me proofs of the editorial in the December 1948 issue of P/A. I find your quotations from my remarks at last winter's symposium somewhat confusingly used. The juxtaposition of my name with those of members of the staff of the Architecture Department suggests that I am connected with the Museum, which is not the case. But it may be merely a matter of accident that the quotations from myself follow immediately upon the quotation from the Johnson-Blake article in the Magazine of Art.

I judge that you're using the quotations from me as instances of comment about architecture of which you do not approve. This seems to me somewhat unjust considering the context in which these remarks were first made, for my purpose was certainly very close to your own: I was stressing, as you are, the fact that we need "thousands of schoolrooms, hundreds of thousands of hospital beds, and millions of homes." As to the final quotation, it should be extended to read that "the architect-designed small individual house, although of consequence statistically in the United States because of our lack of an adequate public housing program and the immaturity of the prefabrication industry, is in the world at large of little statistical consequence." For example, I note that Summerson at the conclusion of his history of the English Architectural Association remarks (with some exaggeration) that the private practice of architecture has come illegal in Britain because of the restrictions on the building of individual houses and Cripps' rigid control of capital investment.

I am sorry that you feel that discussion of various aspects of architecture is in any way inhibiting production. Though I was hardly in agreement with either side, I thought it worthwhile for the editor, Goldwater, to include in successive numbers of the Magazine of Art the Kennedy and the Johnson-Blake articles. For one reason or another, American professional journals have been hesitant to encourage the discussion of general architectural issues.

I entirely agree with you that it is wiser to speak of "modern architecture" and not of this or that portion of total contemporary production under one or another stylistic label. Indeed, that was perhaps the major point of my remarks at the symposium last winter. But I am sorry to see that you seem to imply that there is no profit in talking about modern architecture. For I feel that what is needed is wide and free discussion of issues both among members of the profession and those outside the profession who are interested in architecture as a major manifestation of American culture.

HENRY-RUSSELL HITCHCOCK
School of Architecture and Planning
Massachusetts Institute of Technology
Cambridge, Mass.

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STATUS OF BUILDING MATERIALS AND EQUIPMENT

Availability Increasing: Prices Advancing.
But not Enough to Account for Tremendous Increase in Building Costs

Forecasting trends has been the fashion around the close of one year and the beginning of another. Obviously forecasts, polls, and predictions have about as much acceptance today as medieval witchcraft. Yet all of us benefit from careful consideration of the future; by studying past performance and inquiring into manufacturers' plans, we as editors can give you, our subscribers, a useful report on the building materials industry's progress. So here are factual records of the availability and cost of architectural products during 1948. The report contains a few prognostications which, space permitting, are direct quotations from statements made by responsible manufacturers.

In assembling this month's issue the editors of P/A asked materials and equipment manufacturers two questions:

A. Has the PRICE of your finished products, compared to last year's, changed substantially? What about your costs for raw materials? For labor? For distribution?

B. What about AVAILABILITY? Of your finished products? Of raw materials, to you?

While some replies were definitely off-the-record, most were not. We wish to thank all who contributed information. Their generosity enables us to substantiate some conclusions to which you, in practice in various portions of the country, have probably also come. If it is any comfort, you may discover that yours has not been an isolated experience. In general, during 1948:

1. While manufacturers' selling prices have risen, the percentage of rise is quite a bit smaller than the percent by which costs of raw materials, labor, and distribution have increased.

2. Part of the higher production cost has been absorbed (not through altruism but simply as good business).

3. The tremendous rise in total cost of construction, then, can't be laid wholly at the product manufacturers' door.

4. Production vs. demand: A surprisingly great portion of the many types of building materials and equipment is available in sufficient quantity to meet demand, deliveries ranging from immediate to a few weeks (compare with 1947's several months). Production has had to be phenomenally increased to cope with a demand which remains extremely high.

5. Serious shortages still exist. For example, there is great difficulty in obtaining steel; sheet and strip are the most deficient; there are some instances of shortages of ferrous castings. Difficulty in obtaining sheet steel affects construction at many points. We received enough reports of difficulty in obtaining satisfactory supplies of wood to indicate some continuing trouble, but not as many as might be expected. (We received from Portland cement manufacturers almost no direct answers to our questions; but personal experience in various parts of the country, plus authoritative reports published elsewhere, indicate a continuing short supply.)

6. In a few cases government stockpiling of raw materials is stated to be responsible for mild, serious, or anticipated shortages; for instance, in products requiring aluminum.

7. Many components which a year ago were unobtainable had by 1948's end become relatively satisfactory; examples are small electric motors and, among metals, copper and brass.

Rise in Product Prices

Time after time, in tabulating replies, we have come across statements such as this: "Costs up 21%; selling prices up 14½%"; or "costs increased about 33%; average increase in selling price 5%." If there had been any chance for collusion, such unanimity might have

(Continued on page 16)
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been suspicious. But there had been no opportunity for getting together; we sent out our inquiries "cold," and we allowed a very short time for their return. And each reply considered is signed by a responsible member of the manufacturing firm.

It wouldn't be fair to strike a general average across so diversified a set of industries. Even in normal times their problems vary tremendously; almost the only common denominator is the total volume of construction. Since construction has continued at a high rate, all types of products continue to be in great demand; as much as production has been increased, supply has only rarely caught up. Selling prices have been held down, according to manufacturers, by two principal means: by increasing efficiency of production (meaning improvements in manufacturing methods and machinery); and by expanding the volume of production, so that a manufacturer's total profit remains satisfactory although profit per unit of production is lower (in some cases this has meant actual plant expansion, in others it follows naturally from the first).

Except in a few isolated instances, distribution costs appear to have risen the least; raw materials and labor share the greatest part of higher production costs about equally. It is worth noting especially that in just the past 12 months, most manufacturers reported costs as having risen from 16 to 20% (increases ranged from zero to 37%).

A single large producer, Johns-Manville, has publicly announced that its costs have risen 43 to 102% over prewar figures.

If J-M's seven-year increase—1941 to 1948—is indicative of the general picture, this means that costs rose much more rapidly during 1948 than in previous years. On the other hand, consider aluminum, whose production was expanded tremendously in the seven-year period. Aluminum's base price has dropped 20% compared to prewar figures, even though there was a 2-cent per lb increase in mid-1948.

There's some disparity between the price rise percentages quoted here and those published by the U. S. Department of Commerce. Ours are manufacturers' selling prices, quoted to us by the manufacturers. Department of Commerce figures are wholesale price indexes, possibly more reliable as far as the ultimate consumer—the building client—is concerned. Most building materials pass through a complex distribution system—jobber, wholesaler, and retailer at least—before they arrive on the building site. In this multiple handling probably lies responsibility for the composite price increase shown in the Department's monthly reports: in September 1948, for instance, the Department index for all building material prices was 220.3 using 1939 prices as a base of 100, which means an increase of 120.3%. On the same basis, construction costs then were 216, an increase of 116%. See how the materials price picture changes between manufacturer and construction site!

Production Increases

When you consider availability, it's almost a question of "which paper 'dja read'?" The Producers' Council, national building product manufacturers' organization, says, "The supply of building materials and equipment is expected to be sufficient for the 18.1 billion dollars of new construction, and 7 billion dollars of repair and maintenance estimated for 1949." But it admits difficulties with steel, iron, Portland cement.

The Construction Industry Information Committee has issued statements throughout 1948, optimistically pointing at high production rates. The Department of Commerce report, again for September 1948, showed an over-all production index of 153.7 (1939 = 100)—the index would probably be higher now. Only 20 materials were surveyed to obtain the Department's index, and of these 9 showed declines in production ranging from 3 to 23% less than the preceding month. The more substantial decreases were in cast-iron soil pipe,
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softwood plywood, wire nails, structural steel, and asphalt roofing.

While neither of these types of sources offers fully practical assistance to the practicing architect, the Department of Commerce data comes closer to the mark. But even that misses, in taking for the most part basic materials rather than products as they are used.

The Portland cement situation is a special case. There's been much talk about the "basing-point" price ruling, which meant essentially that the consumer has now to buy cement F.O.B. the plant rather than delivered, and that unequal distribution costs are no longer hidden in uniform delivered prices, to be shared equally by all buyers. An article in September's Engineering News-Record, signed by its editor, Waldo Bowman, assigned additional reasons, probably more important, for the current cement situation. Increased construction activity, an increasing percentage of concrete construction, an industry producing so close to 100% capacity as to be actually dangerous (no leeway for maintenance, servicing, breakdowns; and overtaxing of facilities), increased exports, and an unwillingness to enlarge production facilities due to the great expense involved and the expectation that demand will eventually level off or actually reduce—these, Mr. Bowman asserts, are the real reasons we can expect to find cement less available than usual for some time.

All in all, however, we cannot help marveling at the tremendous increase in production which, though the demand still outstrips it, appears to be catching up. A few manufacturers estimate that by mid-1949, they will be caught up enough for comfort. For a few specifics:

Glass. "Prices up 9 to 10% F.O.B. factory; availability better than any time since the war" (Pittsburgh Plate Glass Co.; other companies approximately the same).

Electrical equipment, lamps, etc. Lamp prices up slightly; availability good. Equipment and wiring prices increased averaging roughly 10%; availability fair, though off schedule due to steel shortage in respect to some items.

Hardware. Prices up 1½ to 10%. Availability fair, though troubled by steel shortage; some apprehension as to future availability.

Wallboard. Prices up slightly. One manufacturer expects to "catch up" in 2 years.

Heating equipment, controls, etc. Situation mixed; some furnace manufacturers have raised prices slightly, others have not; one reports "lowest prices in 6 years." Prices of outlets, controls, etc., increased during 1948 from 6 to 20%. Availability: manufacturers report fairly good deliveries, although steel and pig iron, as well as scrap, are in many cases acutely short; to offset this, many are building up large inventories to shorten delivery delays.

Wood, plywood, etc. Prices up generally from 1 to 25%. Availability improving substantially; though some manufacturers of assemblies incorporating wood report difficulty with quality.

Paint, coatings, etc. Prices up only slightly if at all. Availability generally excellent due to production peak limited only by raw materials; only 1 or 2 types unavailable.

Nonferrous metals. Aluminum prices up 2 cents lb during year but still below prewar; brass, copper, bronze prices up some. Availability of aluminum spotty; of brass, copper, bronze, slightly better (much better than 1947); all four metals may be less available due to government stockpiling.

Doors, windows. Millwork situation much improved. Steel: prices up slightly; availability somewhat limited.

Special equipment. Any type incorporating sheet steel (includes elevators, cabinets, kitchen equipment, etc.): prices up 8 to 10%; deliveries variable, ranging from immediate to 30 days, even to 12 or 16 weeks.
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A modern treatment of architectural bronze and nickel silver adds luxury, simple dignity and a strong note of permanence to the attractive new I. Magnin & Co. store in San Francisco.

In creating this effect, economical, easily fabricated Anaconda Architectural Shapes were utilized by the late Timothy L. Pfleuger, architect, F. Kern & Sons Iron Works, San Francisco, fabricators of the interior metal work, and the A. J. Bayer Co. of Los Angeles, who did the exterior nickel silver work, including entrance doors.

This inviting new store is one of three recently completed for I. Magnin in California. In both the Los Angeles and Beverly Hills stores, bronze and nickel silver are used in much the same manner.

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Oshkosh, Wisconsin
Here is an outstanding example of the results obtained by extensive "Pittsburgh" research, aimed at helping to solve architectural and building problems actually encountered in the field. This door-frame is factory-built of special shapes and of heavy extruded aluminum, reinforced with structural steel. And metal craftsmen fabricate it to high quality standards, using special checking gauges to assure accuracy of all dimensions.

In ordering this frame, all you do is specify; "Herculite Door-Frame Assembly" and give the style number and size. There are twelve standard designs available, permitting a variety of combinations.

Pittsburgh's Herculite Door-Frame Assemblies come complete with moldings for transom glass, supports for sidelights, strikes for locks, sockets for bolts ... everything. No assembly is required on the job. No time-consuming calculations and other irksome details are involved. And they are supplied with the famous Pitco Checking Floor Hinge, a marvel of modern engineering. Only 6½" x 6½", this hinge has remarkable operating characteristics. It provides positive door speed control, a separate checking control, and a built-in hold-open feature.

But why not get the full story? It's told in our illustrated booklet which will be sent to you without charge upon receipt of the coupon below. Mail it now.

Pittsburgh Plate Glass Company
2021-9 Grant Building, Pittsburgh 19, Pa.

Without obligation on my part, please send me a free copy of your booklet on Pittsburgh's Herculite Door-Frame Assembly.

Name.................................................. Address..............................................

City.................................................. State..........................
As door and frame are prepared by door fabricator to template details, the LCN 304 Closer is quickly secured in place with machine screws. On-the-job work is reduced to a minimum, total cost cut accordingly.

The LCN "304" Door Closer supplies a practical answer to the old problem: how to provide effective control for the many ordinary hollow metal doors specified for a modern building and still keep them free of bulky machinery.

It's simple now. The powerful closing mechanism of the LCN 304 is entirely hidden within the door itself. Only the arm is exposed. It handles easily any interior door up to 3'6" x 7' x 1 1/4" in size, and operates efficiently under common conditions of internal draft and heavy traffic. Thoroughly tested and proved in two years of actual service. Incorporates back-check action; also hold-open if desired, yet costs little more than an LCN exposed closer of similar capacity. Folder 304-b promptly sent on request. LCN Closers, Inc., 466 W. Superior St., Chicago 10, Ill.
How to Please All Your Clients... specify WELDWOOD PLYWOOD for commercial installations

OFFICES. Birch Weldwood combined with wallpaper. Valance is decorative and practical — it conceals drape and blind attachments, and provides space for indirect lighting fixtures at the same time.

BARS & RESTAURANTS. This beautiful Claro Walnut Weldwood bar front was made for the Cardinal Richelieu Hotel, San Francisco. Walls and columns were covered with the same paneling.

INSTITUTIONS. Mengel Flush Doors and trim of Ribbon Grain Walnut Weldwood set off the diamond-matched bleached Walnut walls and railing. Recessed panels over doors are of Stump Claro Walnut.

HOTELS. Your first impression of the Oataray Hotel lobby, Greenville, S. C., is one of richness and good taste. Guiera Wood Weldwood in a handsome treatment of walls, columns and stair-rail.

STORES. Window-dress the whole store! Graceful curves and smooth-flowing lines provide an eye catching background for display in this Miller shoe salon, New York. The wood is oak Weldwood.

BANKS. Dignity and stability are the keynotes of this luxurious installation of Figured Mahogany paneling in the Conference Room of the Long Island City Savings Bank, L. I. City, N. Y.

WELDWOOD Plywood

Weldwood Plywood and Mengel Flush Doors are products of

UNITED STATES PLYWOOD CORPORATION THE MENGEL COMPANY

New York 18, N. Y. Louisville 1, Ky.

Weldwood® Hardwood Plywood Painting on plywood

Douglas Fir Weldwood Decorative Micarras®

Mengel Flush Doors Flexmet®

Douglas Fir Doors Flexwood®

Overhead Garage Doors Flexmet®

Molded Plywood Flexglass®


Tekwood® (paper-faced plywood)

Plastics and Wood Welded for Good

Weldwood Plywood is made in both Interior and Exterior types, the former bonded with extended urea resins and other approved bonding agents; the latter with phenol formaldehyde synthetic resin.

Most commercial installations present essentially the same requirements for an interior wall surface. Appearance, durability, ease of maintenance and finished cost... these are the major questions.

And here are Weldwood's answers:

APPEARANCE. Man's old-time, all-time structural-decorative favorite... wood. Choose from the very finest domestic and imported hardwoods... because only selected flitches go into Weldwood panels. Create traditional or modern interiors. You have a wide latitude for numerous effects... because Weldwood's lustrous beauty is a perfect complement to any style.

DURABILITY. Weldwood resin-bonded panels are laminated under heat and pressure, to produce a modern form of decorative panel that will never warp, crack or delaminate, when properly installed.

EASE OF MAINTENANCE. First cost is practically last cost, when Weldwood walls are installed. These beautiful decorative panels maintain their original beauty with minimum care. Maintenance is negligible.

FINISHED COST. Because Weldwood panels combine high structural strength with great decorative beauty, you can specify many short cuts that save both material and labor. Your finished costs will look good, compared to the striking appearance of the finished job.

So look into Weldwood for all your commercial clients. Take your choice from fine woods like oak, birch, korina, maple, walnut, gum, mahogany, zebrawood, avodire, rosewood and teak. Make everybody happy... store-owners, restaurants, bankers, businessmen, hotel-owners and operators of institutions. Specify Weldwood for their interior walls.

SEND FOR NEW BOOKLET ON WELDWOOD FOR COMMERCIAL INSTALLATIONS... YOURS FOR THE ASKING

UNITED STATES PLYWOOD CORPORATION
35 West 44th Street, New York 18, N. Y.

Gentlemen:

Please send me your free booklet on commercial installations of Weldwood Plywood.

Name:

Address:

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NATIONAL HEATING PRODUCTS
All Sizes . . . For All Budgets
See our complete line at Booth Nos. 106 and 108
9th INTERNATIONAL HEATING & VENTILATING EXPOSITION, January 24-28, 1949

NATIONAL CAST IRON HEAT EXTRACTORS
The features your customers want most—economical heating, long, efficient service, smart appearance, easy convertibility to any fuel—are the engineered results of over seven years of intensive research.

“200” SERIES. Big boiler performance for homes of medium size and some commercial installations.

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NATIONAL STEEL BOILERS
Their economy of first cost...installation...operation...and upkeep offers outstanding value for residential and commercial heating. Construction and performance meet or exceed all requirements of recognized authorities and codes.

18” and 23” Series Steel Boilers are available in 5 sizes with oil or gas firing for small and medium size residential installations.

For larger homes, smaller apartments and small commercial buildings, 26”, 29” and 39” Series Steel Boilers are designed for oil, stoker or gas firing.

And for still larger heating jobs, 16 sizes of Commercial Steel Boilers, designed for hand, stoker or oil firing, and ranging to 35,000 square feet of steam radiation, carry on the tradition of National engineering excellence.

...Everything you need!

No matter what size or type of building, there is NATIONAL equipment to heat it adequately, correctly. NATIONAL Oil Heating Units in cast iron or steel, Gas Boilers, Unit Heaters, Art Radiators, Aero Convectors or Fin-Tube Convectors, all carry the well known symbol of superiority—the NRC trademark.

For complete information call your nearest NRC district office or write to The National Radiator Company, 221 Central Avenue, Johnstown, Pa.

THE NATIONAL RADIATOR COMPANY
JOHNSTOWN, PENNSYLVANIA
A comfortable study room at Gilmour Academy, Gates Mills, Ohio. Notice the smooth all-over daylighting provided by the Fenclraft Projected Windows. Controlled ventilation, too. In-tilting sill vents are designed to deflect air upward, guarding students against drafts. Open-out vents allow ventilation even in rainy weather, for they act as canopies over openings.

How can we give you High-Quality Windows ... at such Low Cost?

It's a matter of design, size and standardization. Fenestra* is the largest manufacturer of steel windows in America—only volume production makes it possible to standardize a large variety of windows and keep quality at a maximum... cost at a minimum.

Fenestra Fenclraft Intermediate Windows are made of high-quality casement sections of advanced design—fabricated into 51 different Projected Windows, 14 Casement Windows and 36 Combination Windows. Each is good looking, finely made ... and economical.

All 3 types offer permanently-easy operation in any weather... weather-tightness... firesafety ... low maintenance... cleaning and screening from inside.

For full information on types and sizes, write Detroit Steel Products Company, Department PA-1, 2253 East Grand Boulevard, Detroit 11, Michigan. Or, see Sweet's, section 16a/13.

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Please send me data on types and sizes of the new Fenclraft family of Fenestra Windows.

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STEEL WINDOWS
FENCRAFT INTERMEDIATE STEEL WINDOWS
Laymen as well as architects and builders have remarked that the newer industrial buildings are notable for beauty as well as usefulness. Much of this pleasing appearance is due to modern window design... and when HOPE'S LOK'D BAR Factory Sash are used the owner is assured of extra satisfaction, with maintenance cost savings added to architectural fitness and superior weathertightness.

HOPE'S LOK'D BAR Factory Sash do the job of a window superlatively well. Ventilator sections are rolled in one piece with their weathering flanges, which close tightly on smooth contact surfaces. Operating the ventilators, either mechanically or by hand, is permanently convenient and trouble-free; wind infiltration is less than one cubic foot per minute at 25 miles per hour. Pivoted ventilators are mounted on bronze cups; projected ventilators, balanced on strong steel arms, move on brass guides. Both types are solid welded at the corners, forming a one-piece unit which reinforces the sash.

The exclusive design of the complete sash gives it twice the strength (by actual test) of conventional factory sash. Vertical sash bars are rolled in a bulb tee section, giving greater strength for their weight of metal and in the Lok'd Bar joint the flat tee horizontal muntins are threaded thru the vertical members, achieving a firm mechanical union with less loss of strength by cutting.

The added strength and resistance to wear and tear and corrosion afforded by these features assures for Lok'd Bar Factory Sash a life of service equal to that of the building. Write for the Lok'd Bar Catalog. Details are shown in full scale drawings.

HOPE'S WINDOWS, INC., Jamestown, N. Y.

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS.
Yes, you really do save by using Thorn Aluminum windows.

**HOW?**
1. First cost is low.
2. No field painting.
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**THORN ALUMINUM WINDOWS**

Thorn Windows in Aluminum and Steel are built for the finest but priced for the most modest homes.

"Home Builders and Allied Interests
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J. S. THORN CO.
PHILADELPHIA 32, PA.

**USE THIS PERMANENT TIE**

**FOR CAVITY WALLS**

Here's a high-strength, non-rusting tie that links cavity walls safely and permanently. The Copperweld Wall Tie always retains its original breaking strength of nearly 2 tons. Its thick copper covering—inseparably molten-welded to a strong alloy steel core—permanently protects the tie against the corrosive action of moisture, lime and mortar. Copperweld can't rust—can't weaken.

This practical combination of copper and steel makes Copperweld Ties the choice of wise architects and builders. Play safe! Guard your reputation by using them. Copperweld Wall Ties are available for immediate shipment. They are made in two sizes—6" and 8" stems, both with 2" legs—packed 500 of one size to a box.

COPPERWELD STEEL COMPANY
GLASSPORT, PA.
SALES OFFICES IN PRINCIPAL CITIES

MAIL TODAY
Please send me your specification bulletin and prices on Copperweld Cavity Wall Ties.

Name ____________________________
Company ____________________________
Address ____________________________
City ____________________________ Zone __________ State __________

JANUARY, 1949 31
For more than a half-century, the name Roddis has been associated with the finest quality doors. A recent testimonial to their quality was the selection of Roddiscraft Solid Core Flush Doors by the builders of the new Terrace Plaza Hotel in Cincinnati, Ohio.

Glance at the hinge rail on the door as you enter your room when next you stop at this beautiful hotel. You will see the built-in red-white-and-blue dowel... symbol of Roddiscraft Solid Core Flush Doors. The designer of this modern hotel selected Roddiscraft Flush Doors not only to carry out the modern design but because of their combination of beauty and rugged ability to stand up under heavy hotel traffic.
Why are so many older hospitals grim, colorless places? Tradition, or inertia, or whatever it was that caused this unhappy situation is fast being overcome by architectural designers who recognize the actual therapeutic value of color and beauty to the sick ... and to those who serve the sick.

Today, architects the world over are using Formica* to prove that a cheerful material can be more sanitary and less costly to maintain than the drab, uninteresting interiors of the past.

For instance, here in the Good Samaritan in Cincinnati, Formica is on walls and window stools in training wards, corridors and nurses' dormitory rooms. Formica's smooth, tough, long-wearing surface actually repels dirt . . . what dirt might adhere to its non-porous surface wipes clean with the swish of a damp cloth.

Formica is unharmed by alcohol, mild acids, alkalies and boiling water.

See 1949 Sweet's Architectural File (section 131, catalog 4) for more Formica information . . . and for availability of actual Formica color and pattern samples of your own selection. Copyright 1949, The Formica Co., 4633 Spring Grove Ave., Cincinnati 32, Ohio.

**Beauty Bonded**

Switch to 'Incor'

Speeds Cold-Weather Concreting on Great New Veterans Hospital

One of the nation's most modern hospitals is being pushed to completion for the Veterans Administration at Albany, N.Y. This 14-story, 1000-bed hospital, on a 25-acre site, is part of a nationwide hospital construction program designed to provide adequate care for disabled veterans.

The fireproof structure, with its nearly 17 acres of floor space, employs the cruciform plan of a central core with four wings.

In concreting the floors, Foss-Halloran-Narr, Inc., Concrete Contractors, switched from Lone Star Cement to 'Incor' 24-Hour Cement last Fall, as soon as cold weather threatened to slow down schedules. By providing maximum strength-gaining efficiency, 'Incor' made it possible to strip forms a week sooner — keeping the job on schedule and offsetting risk of freezing. Result, three wings and the core were concreted by December 1, instead of only one wing.

Use 'Incor' for either concrete frame, or steel skeleton with concrete floors and fireproofing... keep job speed up and job costs down... flatten out that curve of rising building cost.


LONE STAR CEMENT CORPORATION

Offices: ALBANY, BETHLEHEM, PA., BIRMINGHAM, BOSTON, CHICAGO, DALLAS, HOUSTON, INDIANAPOLIS, JACKSON, MISS., KANSAS CITY, MO., NEW ORLEANS, NEW YORK, NORFOLK, PHILADELPHIA, ST. LOUIS, WASHINGTON, D.C.

LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 35 MODERN MILLS, 27,000,000 BARRELS ANNUAL CAPACITY
Effect of structural materials on design:

SHOP, COMPTON, CALIFORNIA
STILES CLEMENTS
ASSOC. ARCHITECTS & ENGINEERS
Expanded steel studs and joists were selected because they were available, strong, could be erected quickly, and had the appropriate lightness of character.

The Garden Shop of Sears Roebuck in Compton, Calif., is an appendage of the main store. Its long axis runs north and south, excellent for this type of building. For selling plants and gardening equipment, it had to be built quickly and economically in 1947, a year of rising building costs, and to comply with the California “earthquake” building code.

Light steel framing and considerable steel surfacing, all welded, were chosen for this job. Between 18 and 20 tons of structural steel were employed. Estimated cost of conventional bolted construction was $30,000; actual cost of welding, according to Steyer-Weisbrod of Huntington Park, Calif., the fabricators, was $20,000. Contributing to the saving in materials and erection was a unique glazing device. A 1” x 1/8” flat steel strip was stitch-welded, on edge, to the outside flange of the expanded steel stud sections. This provided a glazing recess; glass was applied, and the few transom sash inserted, directly into the framing. The steel strip was prestressed by stretching it mechanically to assure straightness after welding, when the tension was relieved.

Welding, employed throughout the structure, thus resulted in rigid frame construction which met code requirements for earthquake resistance yet presented a clean, airy appearance. In addition, the technique reduced the amount of detailing required, and reduced steel tonnage by 30% over bolted construction using conventional angles and hot-rolled steel members.

Plan shows floor space of two types, half for “wet” merchandise, half for “dry.” Of the central wet area, about 60% has an aluminum lattice roof; remainder is insulated built-up roofing over metal decking welded to the joists.
masonry coatings, additives

Abrasives: water resistant coating for concrete and cinder blocks; 13 colors. T ammas B 16 Co., 228 N. La Salle St., Chicago 1, Ill.

Kry-Tite: Portland cement-based coating which cures water and moisture penetration in porous masonry, structural concrete, and other new products; Asbestos-Liter Hydrozine. No price increase; available. Kry-Tite Co., Orange, N. J.

Marbl-L-Coat: complete line of dry powder materials, including spakling putty, Portland cement paint, mineral paint, and contracting plaster. Other new products; Asbestos-Lite Bond. No price change.

Marble-Stone: waterproof ceramic tile, oil base with pigment and asbestos fiber. For concrete, stone, walls and floors; clauses not to peel, discolor, or flake. American Molding Products Co., 8001 Franklin, Cleveland, Ohio.

Concrete for Concrete: heavy-duty paint that protects concrete surfaces with abrasion-resis-
ting coating. Also applicable to porous masonry surfaces. Lucebo Inc, 1525 E. 55th St., Chicago 15, Ill.

Parege Cost Damproothing: application service for exclusive use of firm's own personnel on their own products; materials not for sale. Dilato Expanding Mortar: improved during past year. No substantial price increase. Western Waterproofing Co., of Missouri, St. Louis, Missouri, and St. Louis, Ill.

Portland Cement Paint: decorative, for masonry walls. White Utility Paints: preserves surfaces from moisture, dirt, and general usage. Master Quality Outside White Paints: top-grade, for fine sur-

Reinbein: masonry water repellent. No change in price; prompt delivery. Protection Products Mfg., 2350 Superior St., Kansas City, Mich.

Rubber-Coats: Finishing Primers, finishes; all types of porous masonry. Willbur & Williams Co., Cleveland, Ohio.

Stark: single coat masonry coating. Sika RBC: coating to delay setting of concrete or mortar. Improved products: Transparent water repellent. Bonded to masonry by emul-
sion; gum grade caulking. Vinyl Coatings: acid, oil, abrasion resistant, to be produced soon. No price increase; unlimited quantities.

Tremco's new products: Colorfloor XXV Swet Eze, Wraparound, Trowel Concrete, Concrete Coloring Compound; Tremco Under-Coats: Quick-Drying Mendallated Mortars; Tremco 101 Mastic Waterproofing; spraying consistency improved; Tremco Mfg., 8701 Kinman Rd., Cleveland 4, Ohio.

surfacings materials (continued)

Bakelite and Vynile Sealants: for application under paint coating on economy lumber. Sealers form film over "live" knots; impervious to pitch extract and volatile substances. Bakelite Corp., 30 E. 42nd St., New York 17, N. Y.

Cellonyl: synthetic resin for bleached wood finishes. Self-plasticizing; may be used with ordinary lacquer solvent and additional combinations. Hercules Powder Co., Delaware Trust Bldg., Wilmington, Del.

Deep Toner Decorative Colors: for interior walls; wide variety of tints when mixed with base whites. New material and labor cost increased over amount absorbed so far. Prompt shipments. Grinnell Mfg. Co., 1615 Coliseum Ave., Cleveland, Ohio.

Dexodize: phosphoric acid metal cleaner and rust remover; will etch iron, steel, aluminum, etc., for painting. American Stainless Steel Corp., Bellingham Mill Ave., Baltimore, Md.

Huntington Wax: alcohol resistant. Glasses and enamels and glass enamels, glasses, mirrors, etc. One quart bottle; prompt delivery. Huntington Laboratories, Inc., Huntington, Ind.


Meislin No. 6: especially processed oil for fine painting, and for uniform, non-penetrating coat. Can be applied over calcimine in good condition. Brown Oil & Chemical Co., 79 Pine St., New York, N. Y.

Mirroline: new plastic glass finish protects metal surfaces; tinum, painted wood, applied easily, dryer quickly. Wype Corp., 2214 Dolman St., Saint Louis, Mo.

One-coat House Paint: white, exterior; only one coat necessary; extreme economy; dries six to eight hours. Dampco Products, Inc., 44th St. & 5th Ave., New York, N. Y.

Beardon's New Products: tile cementaram. Improved Fixings. Products containing cement, increased about 5% in price, generally good availability. Beardon Co., 2280 N. 2nd St., St. Louis 6, Mo.

Statin Wax: finish for all interior woodwork in one coat; comes in 81 colors. Concrete Sealer Finishes: for use on all masonry surfaces. Additional new colors in Glass Cemplakes. Selected pastel colors in single stain. No price change since 1946. Products available but held; orders on back order; prompt delivery. Samuel Coben Inc., 141 Milk St., Boston, Mass.

Roberts' New Products: Hy-Toner Satin Topcoat; Pentum Sealer Clear; Pentum Pigmented Primer and Sealer; Hydral White King Enamel; Hy-Top Enamel; White Enamel; Hydral Top; Hydral Interior Latex Flats; Hydral Interior Semi-Gloss and All-Gloss; Improved Hydral Enamel Undercoater and One Coat Flat. Roberts

Plaster containing a new light-weight aggregate, Dantone, posses insulating and fire-resistive qualities as well, does not interfere with plasticity or change plastering methods.

New Knot-Sealer formula developed by Western Pine Association, Portland, Ore., makes it possible to paint satisfactorily over economy grades of wood—important in these days of high wood costs. Formula, designated WP-578 Knot-Sealer, is manufactured by several paint companies.
surfacing materials

fire retardant coatings

Fyr-Kote: fire-resistant finishes which may be used over old paint. Available in three finishes. Also special coating for drapes, rugs, or any water-finish fabric. Fyr-Kote Co., 4325 Washington Blvd., St. Louis Mo.

Resistant: fire retardant paint for interior or exterior use; both high gloss enamel and flat finish. New shinny and bare paint. Improved formular on regular line of points. Prices rem

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Corrosite: coated.

Corrosite: coated.

Perma-Dry: heat-resistant aluminum sheet, used for building in a chemical plant for protection against chlorine fumes. Corrosite Corp., New York, N. Y.

flooring

Castle-Square Flooring: parquet flooring; hard-wood boards 1" wide, 1/2", thick, insulated by latex. Best, $ 5.95 or 9' squares. Can be glued to any base without nails. Newdale Products, Inc., 300 W. 56th St., New York, 18, N. Y.


Floor Tile: made of Vinylite, said to be unaffected by water, oils, greases, or fruit acids. Various patterns. Synthetic Products, Inc., 15091 La Salle Blvd., Detroit 21, Mich.

Kemp-Coated: rubber-Solid-Acrylic new color added to tile line. Another color addition


Oakted: flooring, substitute for hardwood, for low cost houses. Komposited: wear-resistant compound for mastic floors. Resistocreie: surfacing materials, unaffected by oils and greases, for areas such as machine shops. Products available. Komposite Co., Inc., 111 Clay St., Brooklyn 22, N. Y.

Plasticite: laminated plastic floor tile with cork base, resistant to acids, oils, alcohol, acids, oil, grease, acid, bases, oil, water, wood, steel, concrete. Wide range of solid colors and marblized patterns. U. S. Plywood Corp., 50 E. 42nd St., New York, N. Y.

Rubber Tile: floor tile in wide variety of patterns, prices. contact: Rubber Co., 128 McPherson Highway, Fremont, Ohio.

Terraflex: plastic asbestos floor tile, in bright colors, for heavy service. Quintra: asbestos-base, completely inorganic, insulating sheet, from 1/2 to 100 mil thick for electrical wire and layer insulation. Improved Giant Strip asphalt shingles. Despite higher costs, prices keep to minimum increases. Johns-Manville Corp., 22 E. 4th St., New York 16, N. Y.

Wavedge: rubber tile flooring, diagonally curved halves of 8" or 9" squares, applied in variety of patterns. Dambury Rubber Co., Inc., Dambury, Conn.


glass


heavy-duty coatings

All-Strike Bowling Alley Finish: also new primer and thinner. Hi-Text seal for asphalt tile, terrazzo, mosaic, promotes non-inflammable varnish remover. No price increase; normal availability. Hillyard Chemical Co., St. Joseph, Mo.

Alpase Aluminum Paints: bars corrosion and moisture. For finishing and as primer. Aluminum Import Corp., 520 Fifth Avenue, New York 20, N. Y.

Aluminum Roof Coating: tough, weather-resistant film; reflects up to 75% of light and heat. Philip Carey Mfg. Co., Lockland Station, Cleveland, Ohio.


Carbo-Kote: corrosion and moisture resistant coating for rubber, wood, fiberglas, and miscellaneous surfaces. One brush coat from eight to thirty times the thickness of one coat of paint. Carbolene Co., 502 N. Taylor St., St. Louis 9, Mo.


Shingle-Seal: decorative, weatherproof finish for asbestos siding and shingles. Bright white, gray, white, stone gray. Spray or brush. Dewaxed Mfg. Co., 424 W. 42nd St., New York, N. Y.


installation materials


Key Sealtite: for mortar joints between glass block. Flot-Schler cement floor cleaner and etcher. Tub-Tite: resin-based plastic caulking recommended for sealing cracks in washstands, shower stalls, showcases, refrigeration and
The Toronto, Canada, Transportation Commission, through its Rapid Transit Department, is preparing plans for four and one-half miles of subway to replace an existing car line. The Commission decided to build a full-scale model of one station to examine operating features and to study surfacing materials and details. Finish materials for the mock-up were chosen for availability; resistance to moisture, soiling, and public abuse; appearance and ease of maintenance. Floor and base are terrazzo throughout; suspended ceiling is of acoustical asbestos-cement panels with a plastic, dirt-resisting finish. Walls are also terrazzo, with glass-faced masonry in corridors where crowding is likely to cause excessive abuse. Handrails and similar trim are stainless steel.
MATERIALS and METHODS


EQUIPMENT. Electrical: Incandescent lighting, lumiline and reflector lamps in display areas; circuit-breaker wiring system. Heating: electric space heaters. Kilns, etc.: special, by owner.

INFLUENCE OF SURFACING MATERIALS
ON DESIGN

Photo at far left; close-up of construction, showing top-pivoted sash selected because they were extremely easy for women studio workers to operate. Left, office interior.
Above, sales space; walls surfaced with textured plywood spot glued to exterior plywood and to framing. Below, studio interior, as pleasant as the sales space.

Photos: Julius Shulman
Influence of surfacing materials on design

This studio and shop, several times extensively added to, houses the manufacture as well as wholesale and considerable retail sales of Kay Finch ceramics. Heavy highway traffic in both directions led to placement of the original building diagonally on the site to attract automobile trade. For the same reason, planting and terraces are important; and the exterior is painted white, roof overhangs a pink which is almost a Kay Finch trademark, and facia boards sage green.

The structure is entirely of wood above the concrete floor slab. Exposed posts, 4" x 4" and 4 ft o.c., frame the walls; 1/2" exterior grade Douglas Fir plywood is secured to the inner faces of the posts to provide a smooth interior surface. Southern California's mild climate made more complex wall materials unnecessary; this plywood skin forms the entire wall thickness. (For discussion of a similar structure in a more severe climate see the house by Ramey, Himes & Buchner in this issue.) Walls are about half top-hung or fixed sash mounted directly on the structural posts, eliminating complicated trim or frames. The low pitched roof, with wide overhangs which effectively reduce sky glare yet admit ample light, is surfaced with built-up roofing topped with crushed white ceramic tile to serve as reflective heat insulation.

Such a direct solution of the design problems, however they may have been simplified by the uncomplicated demands of local climate, has produced a most attractive building. At the same time it is economical, though not parsimonious, of materials.
Steelcroft Prefab building 50 ft wide, clear span; Steelcroft Mfg. Co., Ross-mayne, Ohio; steel frame for masonry walls, or with aluminum siding.

Below, models of prefab house using K-Veneer, wood sheet scored to impart dimensional stability, as surfacing; Howard T. Fisher & Assoc., architects, of Chicago. The same firm is promoting Metal-Clad Insulating Wall Panels for curtain wall construction of multistory buildings. Introduced in 1947, Metal-Clad panels bid fair to become generally available in 1949.

Prefabrication

Aluminum Home: experimental six-room house utilizing more than 7,000 lbs. of aluminum for exterior wall panels, roofing, window frames, doors, piping, insulation, wiring, kitchen cabinets, partitions, radiant heating system, etc. Aluminum Co., New York, 501 Gulf Bldg., Pittsburgh 19, Pa.

Clear Span Trussed Batters: requiring no load bearing partitions; easily erected on site. Timber Engineering Co., 1319 18th St. N. W., Washington 6, D. C.


Precision-Built Houses: again being produced in low and medium price brackets. Each unit constructed from company’s plans, available to buyers, or from designs of purchaser’s own architect (supervised by Precision-Built technicians). Houses will be marketed through local real estate brokers. Homesteo, Trenton, N. J.


Protective Materials

Copper and Copper Alloy Products: general improvement in production facilities. American Brass Co., 25 Broadway, New York 7, N. Y.

Galv-Line: magnesium ribbon anode to protect buried metal structures from corrosion. For high resistivity soils, or in conjunction with cast anodes, to increase efficiency of cathodic protection installations. Standard lengths: 1,000, 2,000, and 5,000 ft. Dow Chemical Co., Midland, Mich.

Home Sashless Clamping System: patented packages weather-proofing unit consists of 10 flexible, non-rusting copper sheets, 200 bronze nails, instruction book. Two packages will flash average five- to six-room house. Revere Copper & Brass, Inc., 238 Park Ave., New York 17, N. Y.

Hydrocide 700: emulsified caustic compound for protecting exterior surfaces below grade against dampness. L. Stoneborn Sons, Inc., 88 Lexing-

ton Ave., New York 16, N. Y.

Klee Sealant: for mortar between glass blocks. Costs exterior mortar joints, forms tight, flexible bond to the glass; quartz and glass containers available in limited quantities. American Fluorite Co., 835 Rockside Ave., Cincinnati, Ohio.

Marsh C-100 Caulking: permanent caulking for wood, steel, masonry, glass joints; may also be used between masonry and wood, around window frames, can be applied to any substrate. Marsh Stucco & Tile Co., Inc., 508 North earning Ave., Oberlin, Ohio.

Perfection Joint Cover: for weather protection of masonry joints. No change in price; immediate delivery. Duensing & Hunt, Inc., 1927 Elm-wood Ave., Buffalo, N. Y.

Termite Sprinkler Control Systems: to safeguard buildings from termites, can be installed only in new construction. Hill Termite Control Sys-

tems, Meehick Bldg., Memphis 3, Tenn.

Store Fronts

Safety-Set Store Fronts: heavy-gage rolled construction; full visibility fronts; available stainless steel, acid-etched aluminum. Improved glass setting for insulated glass units; also flash glazing; seal, entrance doors, frames. Brassco Mfg. Co., 1502d & Commercial Ave., Harvey, Ill.

Store Fronts: flash glassing assemblies. Corner Bar Series: with angles varying from 88° to 180°, can be also used as division bars. Moulding for pilaster. Jamb for double action glass metal doors. Structural Glass Hanger Moulding; for easy replacement of structural glass. Wide Face Sash for use without all side, or head jambs. Storefronts, Providence 9, R. I.

Wall Construction

Clip-Grip Steel Stud: clip-stud combination for erecting dry wall partitions. Gypsum Lath Clip resilient, requires no nails; for use especially where reduction of sound transmission is factor. Prices substantially same; products available. Nesto Mfg. Corp., 516 Fifth Ave., New York, N. Y.


Partition System: fire resistant, two-inch solid plaster partition members, especially designed to meet varying building requirements. Light weight: Inland Steel Products Co., P. O. Box 391, Milwaukee 1, Wis.

Spandrel Panels: light sheet metal with fire-resistant insulation core. Finishes and textures permit marked variations in appearance of building. Panels, 3" or 4" thick, increase net floor space within building line. Fisher & As-


Wire Mesh Enclosures: improved by 1/4" non-telescoping line post, replacing conventional 1" channel; standard or heavy duty, for rooms or partitions in any building or area. Acorn Wire & Iron Works, 5912 Lowe Ave., Chicago 21, Ill.
structural materials

composite materials


Fibers: cold-setting plastic composition, consists largely of wood-waste fibers; high insulation and fire-resisting qualities, load-bearing strength. Expect to produce wall-thick slab 16" x 32" with inner and outer finish, glued joints; also highly insulating floors, ground-slab type. Corwil Corp., 318 Welsh Blvd., Flinn 44, Mich.


Rohm and Haas: Plexiglas Sheets: 16", Temprex bio Plastic Way, Quinton, N. J.


iron, steel

Forging: aid to quick erection of welded structures. Prompt deliveries, J. H. Williams & Co., 220 Lafferty St., New York 1, N. Y.

Shield-Arc LN70: arc welding electrode, for welding of structural steels and reinforcing bars. Price increase; deliveries somewhat slower. Lincoln Electric Co., 1218 Cock Rd., Cleveland, Ohio.


masonry materials

Ayr Trap: air entraining agent for concrete and cement mortar. Horn-O-Kote finishing and protective material for cement asbestos shingle. Horn A E Dispersed Black: coloring to make concrete block without reducing air entraining factor in concrete and cement mortar. Several other new products upon completion of field tests. A. C. Horn Co., Inc., 10th St. & 44th Ave., Long Island City, N. Y.


Feather-Weight Building Aggregates: raw perlite, a glasseous, volcanic rock, processed to give insulating and lightening qualities to cement and plaster. Also used as filler in paint and plastics. Perlite Co. of Carnegie, Carnegie, Pa.

Gibralite: pumice concrete aggregate with high-weight-to-strength ratio; chemical analysis same as granite; for monolithic, structural, insulating applications. Price reduced; unlimited supply. General Pumice Corp., 7 Laughlin Bldg., Santa Fe, N. Mex.

Highly Colored Granites; imported. Standardised granite curb. Prices slightly lower; stock materials immediately available; dimension granite, from 30 to 60 days upon receipt of approved working drawings. H. E. Fletcher Co., W. Cheshire, Mass.

Zonolite Brand Vermiculite: number of new applications, such as weight-saving floor tile for upper stories in large buildings, improved fireproofing material for structural steel columns, beams, etc. Zonolite Co., 155 S. La Salle St., Chicago 3, Ill.

installation materials

Riwelds: new rivet stud secures corrugated metal roofing material to steel purlins; no fastening devices to mar appearance or to interfere with painting. Nelson Sales Corp., Toledo Ave. & E. 28th St., Lorain, Ohio.

Trip-L-Grip Framing Anchors: replace old style joint hanger; eliminate uneven joints, cost of ledger strips and notching. Timber Engineering Co., 1319 18th St., N. W., Washington 6, D. C.

Weatherproof Roofing Nails: neoprene washer which forms a seal around nail holes in metal roofs and sidings to prevent corrosion. Neoprene rubber said to be used up under all types of weathering. Nicholas Wire and Steel Co., Davenport, Iowa, also Independent Nail and Packing Co., Bridgewater, Mass.

corrosion of H-beam piles due to ground-water has been a major headache. Western Foundation Co. of Chicago has encased the upper 10 to 30 ft of steel piles in protective concrete. Above, protected 12"-53 lb H-beam pile; below, driving piles for General Electric Turbine Plant, Schenectady, N. Y.

correction of H-beam piles due to ground-water has been a major headache. Western Foundation Co. of Chicago has encased the upper 10 to 30 ft of steel piles in protective concrete. Above, protected 12"-53 lb H-beam pile; below, driving piles for General Electric Turbine Plant, Schenectady, N. Y.
Above, roofing details; below, wall construction. Note that steel studs carry down through the Roman brick lower wall, which is merely a solid "curtain." Above the marquise the wall is formed of the same steel decking employed for the solid part of the roof. All welding details were so made that no overhead welding was required.

MATERIALS AND METHODS

CONSTRUCTION: Foundations, concrete. Floor, concrete slab. Walls: expanded steel studs. Roof, expanded steel joists, stock steel decking. All framing shop-welded in panels; field-welded after panels were erected. Surfacing: floors, colored concrete; walls, wainscot of Roman brick, double-strength. A glass above to marquise, steel decking above; roof, built-up over board insulation on steel decking on solid portions, ½" aluminum channels where latticed. Sash: stock steel.

EQUIPMENT: Stock hardware, plumbing, and electrical equipment. Special elevator connecting to basement of main store.
EFFECT OF STRUCTURAL MATERIALS
ON DESIGN

Above, details of diagonal bracing; below, of door. Identical sections of expanded steel joist were used for horizontal and diagonal bracing. Note the simplicity of connections and of glazing-bar detail. One reason for using expanded steel members was the light, lattico-like appearance, appropriate to a garden shop.
EFFECT OF STRUCTURAL MATERIALS
ON DESIGN

Floor Plan

Scale 1" = 20'-0"

Section

Wall

Section

1/2" Scale

GALV. METAL CORING
1/4" METAL DECKING
FLASHING
SPLIT T, 16" WEB
1/4" METAL DECKING AND LIGHT WGT. CONC. FILL
COMP. ROOF. GROSGY
8" GALV. METAL
GUNMET
E6.5
SAME AS HVL
E6. STUDS
1/4" x 1/8" CONE. BAR
WELDED GLASS
STOCK STEEL FRAMING
(ALL WELDED)
9/4" x 18" PLATE
1/4" x 1/8" CONE. L.
WELDED
6" BULK
3-L""
Why are so many older hospitals grim, colorless places? Tradition, or inertia, or whatever it was that caused this unhappy situation is fast being overcome by architectural designers who recognize the actual therapeutic value of color and beauty to the sick... and to those who serve the sick.

Today, architects the world over are using Formica* to prove that a cheerful material can be more sanitary and less costly to maintain than the drab, uninteresting interiors of the past.

For instance, here in the Good Samaritan in Cincinnati, Formica is on walls and window stools in training wards, corridors and nurses' dormitory rooms. Formica's smooth, tough, long-wearing surface actually repels dirt... what dirt might adhere to its non-porous surface wipes clean with the swish of a damp cloth.

Formica is unharmed by alcohol, mild acids, alkalies and boiling water.

See 1949 Sweet's Architectural File (section 13, catalog 4) for more Formica information... and for availability of actual Formica color and pattern samples of your own selection. Copyright 1949, The Formica Co., 4633 Spring Grove Ave., Cincinnati 32, Ohio.

NEW EVAPORATIVE CONDENSER
SAVES MANY COSTS

Where water for use in refrigerating condensers is expensive, high in temperature or difficult to secure and dispose of, the Worthington ECZ Evaporative Condenser saves water, equipment, space and money.

Water consumption is reduced 90% or more—only enough new water is added to make up for evaporation and keep the circulated water sweet and clean. No long line losses; and pumping costs are reduced proportionately.

Equipment such as cooling towers, water service and disposal facilities is not needed, saving investment cost, maintenance cost and space.

Prime surface coils are staggered to permit air deflection and wetting of the entire surface. Smooth surface makes washing easy and helps prevent scale accumulation.

Installation of this compact unit can be made inside or outside, in basement or on roof. Two types—Freon and Ammonia. Other features: Worthington Monobloc Pump, anti-corrosion fans (at slight extra cost), receivers available for Freon unit.

Write us for new Bulletin C-1100-B28, giving complete information. Worthington Pump and Machinery Corporation, Harrison, N. J. Specialists in air conditioning and refrigeration for more than 50 years.

Higbee Is Ahead On Air Conditioning, Too

One of the country’s greatest department stores, considered throughout the retail business as a pace-setter, is Higbee’s in Cleveland. 17 years ago, a Worthington 1,000-ton carbon dioxide refrigeration plant was installed to provide air conditioning. When it recently became necessary to enlarge the installation, the success of the original equipment suggested having Worthington provide the new machinery.

The new installation provides for 2,000 tons of Worthington centrifugal refrigeration.

J. Gordon Turnbull, Inc., Consulting Engineers.

Another Modern Plant Selects Modern Air Conditioning

When North American Manufacturing Company—manufacturer of oil and gas-fired furnaces—built its new plant in Cuyahoga Heights, Cleveland, it decided first, to install air conditioning in its offices and, second, to install the most modern air conditioning equipment.

These decisions led to the selection of a 50-ton Worthington 4-HF-6 air conditioning unit. This is the 6-cylinder W type, operating on Freon-12, with water-cooled condenser and full force-feed lubrication.

Vincent Eaton, Consulting Engineer.

Why “Balanced Air”? Why Worthington?

The ideal air conditioning or refrigeration system consists of machinery all manufactured—not just assembled—by one company. This makes more possible a perfect balance among all interrelated machinery.

Worthington is the company that manufactures all the vital “innards”—compressors, condensers, engines, turbines, pumps. The result is a completely integrated system—for more efficient, more economical operation. That’s why there’s more worth in Worthington. See your nearby Worthington distributor—in the Classified Telephone Book.
Slate-Bead, new corner bead for use at openings, etc., permits elimination of trim. Plasterbead Corp., Los Angeles, Calif.

One of the many new types of wall tile which are coming on the market: Atlas Syron Wall Tile, of plastic in wide range of solid colors; Atlas Tile Engineering Co., Chicago, Ill.

Paint Corp., 515 Bryant Ave., New York 59, N. Y.

Sun-Proof Titanic Outside Paints entirely lead-free; fume-resistant; claimed superior to lead-and-oil paints. Actual results better than any time since war. Pittsburgh Plate Glass Co., Pittsburgh 22, Pa.

Valvet Flow: interior flat paint, high covering properties. Currently available while only, but tiles can be made with addition of manufacturer's oil colors. M. J. Mehkin, Paint Co., Inc., 1441 Broadway, New York 18, N. Y.


plaster


Splo-Bead: plasterboard, 28-ga galvanized steel, to replace conventional cover mold at doors and windows. Plasterbead Corp., 333 S. 2nd St., Los Angeles 12, Calif.


plastics

Cat Flap: available from a new division, Plastic Interiors Division. Cat Flap Corp. of America, 1 Park Ave., New York 16, N. Y.

Krylon: spray-on, transparent plastic coating; adheres to any surface; useful to protect特朗gs, blueprints, pastels, wash drawings, etc.; washes off with soap and water. Foster & Kester Co., Inc., Philadelphia 32, Pa.

Monoglon: laminated plastic sheet of great density and homogeneity. For thickest working surfaces. Formica Co., 4520 Spring Grove Ave., Cincinnati, Ohio.

Polyplastex Synspun: spun glass fiber plastic; new medium for direct or indirect lighting; wide range of colors washable. Polyplastex Lamin-ate: glass fiber plastic laminated in shatter-proof glass; for windows, wall panels, accessories, plain or various colors; yard length, widths up to 48'; 1848 prices same as previous year; deliveries within two weeks or order. Polyplastex, Inc., 9250 Horace Harding Blvd., Elmhurst, N. Y.

slate-surfaced


stairs

Duracite: slip-proof resurfacing material for stairs and floors. Improved materials for matching and patching applied marble floors for resurfacing wood flooring. Prices held firm in face of cost rises. Duracite Sales Co., 388 South St., Newark, N. J.


Stair Treads: made of especially compounded rubber, bonded to steps with cement. Reinforced rounded nosing overlaps lip of stair tread for added safety. U. S. Rubber Co., 1230 Sixth Avenue, New York, N. Y.

wall board


Ornamental plastic faced wallboard; may also be used for counters, table tops, drainboards. Block Flooring: new 12" x 12" x 9/32", formerly 9 x 9 x 1/4, with corner construction, three plains of 1/4" veneer. Latter immediately available. Hazekelts Mfg. Corp., 701 Ann St., N. W., Grand Rapids, Mich.


wall covering

Wall-Tex: improved wall covering of strong, flexible canvas; variety of patterns and colors. Slight price increase. Cobalt Coated Fabric Corp., East 77th Ave. & Big 4 R., Columbus, Ohio.

wall tile

Cry-Glass: all glass wall tile for kitchens, bathrooms, dressing rooms; applied to any surface; 15 colored. Dearborn Glass Co., 2414-2444 W. 21st St., Chicago, Ill.


Lockback: plastic wall tile with patented ribs across tile back; provides automatic lock—and permanent installation—between mastic gaps. 20 colors, marbledizes, trims. Wilson Plastics, Inc., 131 Arthur St., Sandusky, Ohio.

Stainless Steel Tile: for commercial kitchens, hospital operating rooms, or wherever wall surfaces are subjected to rugged working conditions.

Decorated Tile Insert: for installation on shower walls and other wall areas to enhance appearance of room. Prices to be increased about 5%. Present outlets can still be supplied. Vixon Tile Corp., Washington 19, D. C.


wood, plywood

Anserwood new pre-finished, low cost paneling. Special manufacturing processes preserve portion of spring growth and increases surface tension of hard summer growth. Boards are then sanded, painted and decorative coating applied, followed by a wax and buff. Pine, oak, chestnut, and other woods used; available in convenient sizes. Leywood Corp., 1003 Ironwood Dr., South Bend, Ind.

K-Veneer new, lightweight building board for prefabricated construction. Distillation of wood at short intervals through a stretching operation provides space within a wood sheet for expansion or contraction. Product is bonded to wood framing; no nails used. Elmendorf Corp., 225 W. Washington St., Chicago 6, Ill.

Prespline: natural wood product used in manufacture of Curtis Woodwork products, including doors and kitchen cabinet units. Curtis Co., Inc., Clinton, Iowa.

Random-width Oak Panel: manufacture resumed. good texture. City, Dallas, Tex.


U. S. Plywood Corp.: new products include Weldwood moldings; Weldwood fire doors; Orange plywood; Weldwood standard flash door; Kellogg Vinyl sheeting; Weldwood California pine plywood. U. S. Plywood Corp., 55 W. 44th St., New York 18, N. Y.

JANUARY, 1949
Influence of openings on design:

HOUSE, GARY, INDIANA
R. DELOS PETERSON, DESIGNER
SANTIAGO RICAURTE, COLLABORATOR
The site of this house, for Mr. and Mrs. H. M. Johnson, is an irregular inside lot, 75 x 167 ft, with the street to the north—ideal for solar orientation. It is a typical residential setting in a conservative neighborhood. The designer knew his clients well; the plan was developed to fit their needs exactly. Because the lot is narrow, windows on the east and west sides of the house facing the lot lines, as well as the northerly street side, are kept to the absolute minimum.

The south side, toward the yard, is almost entirely glass; along this side all important rooms open. To a family with children playing outdoors it is a decided advantage that the entire yard can be seen from almost anywhere in the house. Utilization of solar heat has worked well; the heating plant seldom operates after nine a.m. except on cloudy or extremely cold days. The fenestration makes such use of prevailing breezes that an exhaust fan originally installed has never been turned on. Projection of side walls and roof past the window-wall serves effectively as a shade against hot, high summer sun; screened porch protects living room windows from low western sun, and a trellis, hidden in the photograph, protects from sun overhead. Framing diagram shows effect of fenestration on structure.

RALPH DELOS PETERSON, educated at U. of Michigan and Harvard Graduate School; while he was at Harvard this house was designed. U. S. Navy until 1946; then a job in Denver, Colo.

SANTIAGO RICAURTE, native of Bogotá, Colombia; U. of Michigan, 1940; Harvard Graduate School. He has now returned to his home.

Photos on facing page; Hedrich-Blessing

MATERIALS AND METHODS

doors
All-Lite Overhead Doors: for service stations, deluxe markets, etc. full-width glass panels, steel-base wood construction, welded hinges. Narrow-Line Doors: unusually thin muntins. Both have concealed hardware. Clark Door Co., Inc., 513 Huntington St., Newark 6, N. J.
All-steel Garage Doors: all welded, door leaf in one piece; canopy and track strands. Structural Building Products Co., Dept. P-13, 1710 Buhl Blvd., Detroit 26, Mich.
Combination Storm and Screen Door: all aluminum, weighing 36 lbs. Screen panels inter-changeable. Chicago Glass, Inc., 2439 N. Washtenaw St., Chicago, Ill.
Glass Door: ¼” tempered glass (Temrex), claimed to be live to seven times stronger than ordinary glass; aluminum frame. Appleman Art Glass Works, Inc., 2644 N. Euclid, N. J.
Hangar Doors: new types avoid present tailgate difficulties in operating hangar doors. Improved hangar door designs same as last year; more prompt deliveries. Arch Roof Construction Co., Inc., 115 W. 42nd St., New York, N. Y.
Overhead Garage Door Hardware Kit: everything necessary for simplified installation, either one-piece door or two doors fastened together. Rohn-Selel-Metal, Co., Aurora, Ill.
‘‘Over-The-Top’’ Door Equipment: one-piece garage door which rises to full overhead position; complete units, made to order for many openings; steel weatherstripping; 19 sizes, all wood or aluminum. Frazz Mfg. Co., Sterling, Ill.
Roddcraft Door flush design, lightweight, hollow core construction; veneer strips form acoustical core; three-hydraulic wood face panels and rails. Stock sizes available. Roddus Lumber & Veneer Co., Marshalltown, Iowa.
Storage Doors: for sub-freighting and free freight- operations; patterned features insure uniform light-sealing. Tamson Cold Storage Co., Hagerstown, Md.

awnings, canopies, louvers

glass, glazing
Tremglass: mast material glassing requiring no painting; in aluminum color or pigmented with aluminum powder; weather-stripped, durable, weather-proof. Tremco Mfg. Co., 8701 Kinnsyd Rd., Cleveland, Ohio.

hardware
Cabinet Hardware: matched sets made, brass or bronze, several finishes. American Cabinet Hardware Corp., 418 S. Main St., Rockford, Ill.
Door and Cabinet Hardware: cabinet hinges of all types, latches, pulls, catches, hasps, door holders, etc. The Stanley Works, New Britain, Conn.
Dowel Locks and Stainless Steel Shackle Pedlocks: new products; also improved line of door and window hardware. Heavy, labor, dis- tribution costs up; products prices increased slightly. Sargent & Co., New Haven, Conn.
Hardware Equipment for Doors: latches, locks, pulls, modernized, with new designs; also sound retardant liners for folding doors. Reasonable quotations available within 30-day period. New Castle Products, New Castle, Ind.
Heavy and Standard Duty Tubular Locks: key-in-knob type, for residential and institutional applications. Improved compact door closer and ‘‘one arm’’ spring latch. Yale & Towne Mfg. Co., 200 Henry St., Stamford, Conn.
Locking Hardware: new, solid bronze window and sliding patio doors incorporates hold latch and keep latch and keeper. For open-in ventilators; operates by hand of window or by optional electric control. locksmiths. E. Godfrey Ave., Philadelphia 20, Pa.
Lockwood Door Hardware: all steel mortise lock; in one piece. ‘‘M.H.S.‘’ lock. New, all steel tubular lock. Cost increase for new mortise lock. ‘‘O’’ lock and ‘‘P’’ lock, good at present, but bad prospects particularly on pig iron and built-up wood lock stock. Lockwood Hardware Co., 915 N. Clark, Chicago 10, Ill.

operating hardware for jalousies
factory assembled unit with weather stripping. For wood or glass sashes. Exposed parts nonferrous materials. International Hardware Co., 436 N. Wood St., Chicago 22, Ill.

Rite-Lock Series 500: new unit lock for sliding door, adjustable to various thicknesses and installed without mortising. Made of solid brass, four standard finishes. Adams-Rite Mfg. Co., 540 W. Chey Chace Dr., Los Angeles, Calif.

Tubular Locksets and Latchsets: three types for every interior use; solid bronze bolts and hushed, working part of cam action. Bar- rows Lock Works, North Chicago, Ill.

Tutch-Latch: concealed latch eliminated bulky hardware; door on touch panel releases catch to permit button type compression spring to swing open door. Easily installed on doors, cabinets, drawers. Phillips Tutch Lock Co., 4240 Kenyon Pl., Cleveland 1, Ohio.

Window Sash Spiral Balance: employing new high-carbon flat wire spring; full production expected early 1952. For sash from 50 to 75 lbs and 59 to 65 lbs, cast aluminum housing increases safety substantially; increased availability. Cold- well Mfg. Co., 36 industrial St., Rochester, N. Y.

Wood Casement Window Hardware, Operator, Black. Improved, streamlined, practical. Redesign Model 6705 made solid bronze housing, simplified installation. Model 6706; interchangeable for right- or left-hand casements. Extruded Metal Corp., 222 W. Wacker Drive, Chicago, 6, Ill.


screens, shades
Durall Tension Screen: all aluminum; installed from inside; for both double-hung windows. New York Wire Cloth Co., 445 Park Ave., New York, N. Y.

Lumite: woven plastic screening for windows. doors, and parlors, and parts of upholstery material. Will not rust or stain, can be washed with soap and water. Lumite Div., Chichester Mfg. Corp., 47 Worth St., New York 13, N. Y.

Vinylife Window Shades: fire resistant, sunproof and waterproof, washable. Stewart Harshorn Co., 250 Fifth Ave., New York, N. Y.

windows, surrounds, trim
All Aluminum Combination Screen and Storm Sash: for residences, commercial, and industrial applications; self-contained storage for storm sash. Cincinnati Fly Screen Co., 6400 Herman Ave., Fishersville, Va.

Aluminum Windows: frame members have glazing compound-containing groups deep enough to permit double glazing if desired. Reynolds Metals Co., Louisville 1, Ky.

(Continued on page 98)
**Influence of insulating materials on design:**

RAMEY, HIMES & BUCHNER

ARCHITECTS

A multipurpose material fully exploited: exterior walls consist of a single sheet, 1-9/16" thick, of cement-surfaced fiberboard on an exposed frame; insulation is integral with construction.

Photos: Fred Gund
Interiors (above, dining corner; below, built-in cabinets and shelves) show smooth wall surfaces obtained by placing cement-surfaced fiberboard and plasterboard on room side of framing. Note, in upper photo, floor register. Heat is supplied by two floor units, gas-fired, one here, other in bedroom entry. Both are in concrete-lined floor recesses; there is no basement.

Structural details were based on experience with comparable methods at FPHA. Premise, logical and economical, is full exploitation of material, using stock sizes throughout. Note the ingenious solution of such details as the electrical raceway.
This house, for Harold Himes, one of the architects, is a recent adaptation of the curtain-wall principle to small-building design. Comparable to three Snake Hill houses by Koch, Jackson, and Kennedy (October, 1946 P/A) and the California studio by Gruys in this issue, its walls consist of a thin membrane, intended solely to exclude the elements, applied to the inside of the load-bearing frame. As in the Snake Hill houses, the membrane here is one thickness of cement-surfaced fiberboard, which has sufficient insulating value to permit two floor furnaces (35,000 Btu output) to heat the house effectively. Use of the space heaters determined both openness of kitchen-dining-living space and grouping of bedrooms; thus insulation, construction, equipment, and planning are thoroughly integrated. Satisfied that the construction withstands age and weather—the house went through an 80-mile gale and rain storm—the architects have completed two more like it. Cost, approximately $8,000 including land, was financed by an FHA-insured Prudential mortgage; local banks would not participate. Public comment on the house ranges from, “It’s swell” to, “It’s crazy.”


MATERIALS and METHODS

insulation, sound control

Roof slabs of Durisol (chemically stabilized wood waste bonded with Portland cement); one of several forms of this versatile material, the roof slab affords structural strength, lightness, dry construction, heat insulation, sound absorption, durability. New to this country, Durisol has been satisfactorily used in Europe for 10 years. Durisol, Inc., 420 Lexington Ave., New York, N. Y.

cork

Corkoustic resilient acoustical material, entirely composed of cork particles, again available. Glareless white paint finish reflects 80% of light. Thermal conductivity 0.18 Btu per sq ft per hour per degree temperature difference. Building Materials Div., Armstrong Cork Co., Lancaster, Pa.

Cork Products: thermal, acoustic, insulation, surfacing, etc. Raw materials cost same; no price change in products. Available for prompt shipment. Cork Import Corp., 330 W. 42nd St., New York 18, N. Y.

construction


glass

Fiberglass Insulation Materials: lightweight, board form, for hot and cold ducts. Uncoated Duct Insulation: for application on concealed ducts where finish is not required. Fiberglass Blankets: for quieting self-contained air conditioning units. Owens-Corning Fiberglas Corp., Nicholas Blvd., Toledo 1, Ohio.

Foamglas: pipe insulation of cellular glass for hot and cold lines, indoors and outdoors. Unaffected by humidity; resists fumes, cold atmosphere, other corrosive elements. Comes in sections 18" long, for all sizes of pipe. Pittsburgh Corning Corp., 652 Duquesne Way, Pittsburgh, Pa.


reflective metal


Type 4K Accordian "Resilient" Insulations: aluminum foil and to be 8 to 17 times tougher than ordinary insulations; impervious to water; vapor, conversion currents, cold, etc. No price increase; available. Intra Insulation, Inc., 10 Murray St., New York, N. Y.

Types III and IV Allol Building Blanket Insulations: one- and two-layer aluminum foil attached to vapor-proof paper liner, both types for stud espaces 18", 25", and 24", centers. Price up slightly; available. Allol Insulation Div., Reflectal Corp., 155 E. 44th St., New York, N. Y.

rubber

U.S. Floretson: lightweight insulating material with low thermal conductivity; noncorrosive, non toxic, self-extinguishing. Applied in commercial and home refrigeration units. Available in shredded or block form, various sizes to fill cavities. U.S. Rubber Co., 1230 Sixth Ave., New York, N. Y.

sound isolation

Elasto-Bib: laminated rubber-cork material for vibration and noise control. Available in one inch thick sheets up to 24" x 36" in size. Recommended loading between 7 and 21 lbs. per. Kurfund Co., Inc., 48-15 32nd Pl., Long Island City 1, N. Y.

Fiberglas Acoustical Tile (Owens-Corning Fiberglas Corp., Toledo, Ohio) will not burn, is installed with adhesive or by nailing, etc.
Effect of air & temperature control on design:

Ultimate development of research laboratory group, designed and first unit built before World War II; second unit about completed now; approximate north-south orientation desirable for site utilization and to allow sun to penetrate between units so courts could be used for gardens for testing fungicides, insecticides, etc. Orientation could not be decided until internal problems of building organization and equipment—notably air conditioning—had been resolved.
In this research laboratory, organization of air conditioning and gas exhaust systems was carefully studied for efficiency, compactness, and future expansibility. It is possible to add stories by extending air trunks and other services vertically. Yet such refinement of the air and temperature control system could not have been attained without solving other problems involved, which affect the structure's esthetic as well as its technical excellence. The building is a superior example of the blending of contemporary technics, materials, and equipment by an able designer. The certainty with which all its elements are handled builds up into a satisfying whole both visually and practically—which can scarcely be said of American research laboratories published to date.

The nub of the scheme is the laboratory unit, a three-dimensional planning module portrayed on these two pages. Decision to place windows on east and west walls in solid banks was made only after months of inquiry into actual requirements. At first "north" light was mandatory; only after much discussion did the architect get this modified to a demand for the best possible natural light. East-west fenestration was demonstrated to provide a more satisfactory lighting level as well as site-planning advantages. There remained the problem of controlling afternoon sun. Placement of the corridor along the west wall, and of fume cupboards between corridor and laboratory as described in accompanying captions, met this need.

Within the laboratory module fume cupboards were the principal plan determinant. Not only are services to each cupboard complex (electricity, gas, steam, compressed air, vacuum, water); exhausts are provided for both heavy and volatile gases, and conditioned air is supplied to laboratories over tops of cupboards, exhausted at corridor floor line. Photo shows corridor side of cupboards, access panels removed; motors in each cupboard unit power individual gas exhausts.
Air conditioning is essential in this type of research to insure a constantly controlled air supply regardless of weather and of atmospheric impurities in an industrial district. The air is cleaned, warmed, or cooled automatically according to outside conditions, and conveyed to each work space by ducts contained in corridor ceilings. Used air is extracted below the fume cupboards partly by an exhaust duct and partly by displacement under pressure from the incoming fresh supply. There are also independent duct systems for extracting gases from the fume cupboards. These operate at high velocity, with low inlets for heavy gases and high intakes for volatile fumes.

Other services are carried in floor channels with removable covers, which extend the full length of the laboratory block, whence they are easily extended to lab tables and cupboards. With mechanical equipment thus organized, the laboratories themselves might have been set up in several ways. The scheme chosen is a compromise between complete privacy—a lab for each chemist—and housing 30 or 40 in a large room. As built, the structure contains 21 laboratories, each shared by 4 chemists who may work either semi-privately or in a group.
Above and right: window wall; lab table and storage shelves; and view toward fume cupboards, of a typical unit, Imperial Chemical Research Laboratories. Chemists' desks, instead of occupying dark left-over space, are ranged along the east window wall. Almost the only important layout criticism concerns location of balance table, which interrupts the row of desks, subjecting balances to varying solar temperatures. However, there is a central balance room on each floor for more precise work.
Above, stair hall; right, laboratory wing corridor. Solid wall surfaces, requiring more maintenance than glass, are kept to a minimum. Where paint is used it is acid- and steam-resisting. Each floor is decorated in a different color; variations of the base color against a white background are employed to create pleasant working surroundings. Flooring is cork tile.

West side, laboratory wing; office block in distance. Structure is simple reinforced concrete frame.
Office block, Imperial Chemical Research Laboratories.

Boardroom and anteroom, below, serve also for lectures and exhibitions. End wall is specially treated for projection. Cupboards (closed and open at right below) have adjustable display shelves and independent top lighting. Metal trim, all copper, includes a continuous hanging rail for charts, etc. False windows (left below) are for displaying photographs and transparencies. Tables have reversible tops, also for displays. Ceiling is untreated fiberboard, for acoustic correction; floor, cork with brick-red carpet; walls, Australian walnut veneer on fiberboard core.
EFFECT OF AIR & TEMPERATURE CONTROL
ON DESIGN

Serge Chermayeff, born in Russia, educated in England where he took numerous prizes in fine arts. Honors entrance to Cambridge interrupted by World War I. Practiced in England, starting 1930; partnership with Eric Mendelsohn 1933-36; member MARS group and CIAM as well as British and U. S. professional societies. Has written and lectured extensively in U. S. and Europe. Since coming to U. S. in late thirties, has practiced here (now a citizen); Prof. Architecture and Chm., Dept. Design, Brooklyn College, N. Y., 1942; President and Director, Institute of Design, Chicago, 1947.

Entrance hall (extreme left) is paved with terrazzo; stair wall fin and columns are tiled. All stairhall doors and windows are dark brown with old bronze metal work. Elevator cab has scarlet interior. Construction photo shows reinforced concrete framing; laboratory wing, two bays wide, has exterior columns set just behind the brick facing.
air and temperature control

air cleaning


Indoor air for the air-conditioned room with semi-automatic washer removes 90% of airborne dirt when installed in duct work. Improved electronic air cleaners, made from steel, for residential, commercial, and industrial applications. New Electronic air cleaners, improved electrostatic precipitators. Raytheon Mfg. Co., Waltham 34, Mass.


boilers, furnaces


Comfortaire: winter air conditioner, minimum floor space, low overall height; cast iron venturi type, with built-in automatic control for air flow. Operation can be set by switch; four sizes, ranging from 75,000 to 150,000 Btu. B. F. describe Burner Co., 3048 Motor Ave., Los Angeles 34, Calif.

Commercial Gas Burners: five sizes from 150,000 to 2,000,000 Btu's. Made for hot water furnaces, hot air furnaces, and special heat applications. B. P. Eats. & Co., Box 2275, Kansas City, Mo.

Cushion-Cradled Century Oil Burner: with Neoprene rubber cushioning Lo-Hibey, warm oil air furnaces. Also a new adjustable high pressure head; on all oil burners for greater efficiency and fewer parts. Cushion-Cradled Inc., 3619 North California Ave., Chicago 25, III.

Dual Heat Burner combination gas and oil. Automatic oil-fired air conditioning furnaces. Gas-Operated Air Conditioners, with electronic controls. Oil-fired air conditioning units; capacities: all factory assembled. Improved line of oil burners sizes made to fit on any furnace low input to 100,000 Btu. Century Engineering Corp., Cedar Rapids, Iowa.

Duo-Burner Unit: new oil- or cold-burning heating system; two separate combustion chambers; electric control shuts off one unit when converting to other fuel. Diesel Oil Burner Corp., 100-20 New York Blvd., Jamaica 5, N. Y.

Econolux: larger sized automatic steam or hot water boilers, oil or gas. Econolux Boiler Burner Units inside a 35,000 to 600,000 Btu plant. Commercial and industrial installations. No gas line changes, reasonably priced installation. S. T. Johnson Co., 940 Arlington Ave., Oakland, Calif.


R.S. 8 Oil Burner for household oil furnaces. Other furnaces for houses with basements, 50,000 and 75,000 Btu furnaces. Improvements made on B.S. R. S., R. S. 75 furnaces. International Oil Burner Co., 3800 Park Ave., St. Louis, Mo.

Gravita and Fired-Air furnaces: extra large combustion chamber and fire door; welded steel. Gas and oil furnace. Buffalo Forge Co., 1405 Commerce St., Buffalo 5, N. Y.


Jetronic Burner: new oil burners to operate any type of oil. Cleared for low loss of oil and better heating before combustion. Claimed better than 95%, efficiency in laboratory tests. Jetronic Burner Corp. of America, 701 Milwaukee Ave., Chicago, Ill.

Thermo-Matic Register: individual room temperature controls for low temperature air heated residences. Warm air input from registers for precise control. Centrally controlled unit for heating to loss from room. Dale Valve Co., 1983 Commercial St., Chicago, III.

Universal Type C-1 Air Diffuser: adjustable. Anemotherm air meter. Turning vanes dampers. Price increases. Anemotherm Corp. of America, 10 East 39th St., New York 16, N. Y.

air conditioners

Air Conditioning: five and three ton packaged units; room conditioners, central systems. Frigidaire Div., General Motors Corp., Dayton 1, Ohio.

Console Room Air Conditioner: water-cooled type in mahogany cabinet. Modura Units: cooling and heating, for multiple room installations. Window refrigeration room air conditioners. uAirstone store conditioners and refrigerators. Kooler-Aire units being improved for 1946-47. Condensing Co., Como Ave. S. E., at 23rd, Minneapolis, Minn.

Heating Coil: wide range of models and sizes, for heating, ventilating, and air conditioning, and specially designed applications. Modine Mfg. Co., Racine, Wis.

Small Air Conditioning Unit: protects crane operators against excessive heat, dust, fumes, gases in factories or warehouses; modula coil temperatures at 60° to 85° in summer, 68° to 72° in winter, from one to four separately controlled zones. S. C. Coil with Kinetic Office: combination turbine-coil; protects against freezing with- out loss of normal capacity by directing steam in low air condensate. Trane Co., La Crescent, Wis.

air distribution

Air Conditioning Registers and Intakes: both new and improved. Prices increase; availability dependent on volume, raw materials. Island Register Co., 2435 35th Ave., Rock Island, Ill.

Anti-smudg Cone: when fitted to Kno-Draft Air diffuser prevents ceiling smudg in cozy, dustless, warm, comfortable rooms. Trane Air Conditioning Corp., 114 E. 32nd St., New York 16, N. Y.


Combination Air Diffuser-Lighting Unit; square or rectangular in design: available in 75w and 200w lamp, Air Devices, Inc., 17 E. 42nd St., New York, N. Y.


Multi-Vent: ceiling panel with perforated distribution plate to give uniform air distribution for floors and ceilings. Price increase. Airast Corporation, 1060 North Home Ave., Chicago, III.


Registers and Grilles: all costs up from 3% to 15%; shipment from one week to 30 days, depending on model. American Cabinet Co., 3701 Milwaukee Ave., Chicago, Ill.

Thermo-Matic Register: individual room temperature controls for low temperature air heated residences. Warm air input from registers for precise control. Centrally controlled unit for heating to loss from room. Dale Valve Co., 1983 Commercial St., Chicago, III.

Universal Type C-1 Air Diffuser: adjustable. Anemotherm air meter. Turning vanes dampers. Price increases. Anemotherm Corp. of America, 10 East 39th St., New York 16, N. Y.
chimneys, fireplaces

Circulator Fireplaces: standard model with a number of improvements and changes, 10%, price increase; unable to make prompt delivery due to material shortages. Mongoose Co., Hunting- 

Fireplace Equipment: entire line re-engineered, though general features remain same. Bennett Ireland, Inc., Norwich, N. Y.

Kor-Air Ever Full: new, patented vent cap and glass control, disposal of unsightly pipe and A-Vent. Cap maintains glass temperature, automatically regulated for high winds. Hammel Radiator Engineering Co., 

Metatexers: lightweight gas vent and flue. Pipe-within-a-pipe construction. Aluminum inner pipe heats rapidly; cold air entering at bottom is heated where flue gases are at highest temperature; assures a hot stack throughout entire length. Outside pipe of galvanized steel. Pro- 

Packaged Chimney: supported entirely from ceiling and roof, requiring no brick work; easily installed. Condensation Engineering Corp., 122 S. Michigan Ave., Chicago 2, Ill.

Twin-Ring Chimney Crown: utilizes force of air currents from every angle to improve chimney draft. Design: two crucible units, top disk (proper, top disk) continuously extruded, quickly quenched by air current; 2nd & St. Francis Sta., Wichita 1, Kansas.

Type B Chimney: for gas, Reused roof housing only. Price increases red, approximately 5%. Van-Packer Co., 135 S. La Salle St., Chicago 3, Ill.

controls, pumps

Air Eliminator: new design for low pressure systems; requires no air elimi- 

Automatic Air Valve: eliminates air from radia- 

B & G Airted Systems: boiler and tank unit elimi- 

Circulating Pump: can be mounted horizontal or vertical. Orifice bearings; vibration reducing mechanism; 1/16" rubber seal; 1/2" or 3/4" pipe; 1/6 hp motor. James F. Marsh Corp., 

Class "T" Temperature Regulator: single-seated temperature regulator; for steam pressure to 150 psi, liquid and temperatures to 450°F. Has packless main valve stem and hand- 

Electronic Modulation: for domestic heating con- 

Electronic Modulation: Plug-in Chromosense: automatic clock 


Heat Regulator Set: includes thermostat (sensi- 

Instrument Cabinet for Air Conditioning Control: packaged unit, steel construction, access doors at back, dust-removal indicator gives dry and 

Magnetic Gas Valve: hermetically sealed; elimi- 

(Continued on page 100)

humidification, cooling

Cools: redesigned heating and cooling coils with new plate type ripple-fins; strong, versatile coil coatings. Keeplex, Inc., 1600 Broadway N. W., Minneapolis 18, Minn.

Cooling/Aire: new, improved evaporative air cooler with flow design, high output. Suspends, seven sizes for commercial and residential installations. Payne Furnace Co., Beverly Hills, Calif.

Humidity unit for general application; principle to reduce humidity content of air. Complete new line of "customized", reciprocating com- 

Prior to January 1, 1949
Influence of lighting equipment on design:

A good location for a chain store—this one is on busy Market Street in San Francisco—increases the difficulty of solving its lighting problems, which are difficult enough in themselves. Here foot and auto traffic are heavy. The passerby must be attracted strongly if the store is to be successful financially. And in this type of store, selling women's ready-to-wear clothing and accessories, it is common practice to display as much merchandise as possible. Lighting has to make this display glitter in competition with neighboring stores, each intent on doing the same thing.

Shown is a second remodeling; the first was temporary, during the past war. Later the store was reduced one-third in size, and lighting had to help counteract the reduction. Starting with the marquise, lines of cold cathode light following the structural steel, set behind bronze reflector channels, direct attention inside. Within there are two ceiling heights. In the higher area, toward the front, fixtures are coffers containing concealed fluorescent lamps for indirect lighting, plus incandescent downlights centered in each coffer to highlight merchandise. There are additional downlights between coffers.
MATERIALS AND METHODS


EQUIPMENT. Electrical: special fixtures, specially designed. Cold cathode, fluorescent, and incandescent lamps. Showcases: specially designed for flexibility; wall cases can be used for hanging, double hanging, or shelving.

Left, marquise; above, high-ceilinged portion of store; right, lower-ceilinged rear area, where simpler fixtures were used. Details of marquise were published in April 1948 P/A.
lighting, electrical equipment

emergency and self-contained systems

Minuteman: automatic emergency lighting system, offered now has 90% efficiency, battery voltage, terminal approval. No price increase, able to supply dentists. Lehigh Cord Co., 29 Church St., New York 18, N. Y.

Model 203DSP: 250V Diesel electric plant, air, water, fire protection. Four-year contract for users who must supply their own electric power, is self-contained lightweight electric plant. Model SCK-115P: improved, new streamlined hood and wood starter. D. W. Conner & Sons, 43 Royallaton Ave., Minneapolis, Minn.

Lamps, accessories

Allied Fluorescent Lamps: all lamps. fluorescent fixtures and hold securely; also procure complete contact. Allied Fluorescent Products, 77 Cort St., Irvington, N. Y.

Cold Cathode Fluorescent Lamps: with closer test loads, similar to 9618 slimline lamps. Line Lights: individual ceiling mounted boxes containing ballasts and lampholders, for direct mounting on ceiling. Two-lamp Cold Cathode Residential Luminaires 45° louver cover lengthwise for school lighting. Prices about same; shipments within regular requirements. Orlo Inc., 4422 W. Belvedere Ave., Baltimore, Md.


Fluorescent Lamps: use of Krypton, a rare atmospheric gas, gives 22w 15% increase in light output over standard fluorescent lamps; lower starting voltage; transformers eliminated. Duro Test Corp., North Bergen, N. J.

Fluorescent Lamps and Fixtures: glass shielded, single lamp. Warranties: guarantee, which guarantees lamp and ballast, for complete satisfaction in use. All available. Syracuse Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.

Germicidal Lamps: 36-in. slimline type, operating at four different germ-killing intensities; rated life 1,000 hours; 100% output; quantities for time being. General Electric Co., Des Moines, Iowa.

Heavy Duty Industrial Lamps: Hi-Flood 840 floodlights for indoor and outdoor use; Hi-Hat 840 including service lamp. Lehigh Cord Co., 29 Church St., New York 18, N. Y.

Fluorescent lamp improvements. Yellow enamelled lamps for outdoor lighting. Lamps from 15 to 200w increased one cent in list price. General Electric Co., Nela Park, Cleveland 12, Ohio.


Portable Aviation or Highway Marker Lights: two types, one for night use, the other for both day and night use. Aluminum tube lamp, powered by standard, dry-type battery. Bidirectional. High intensity. 250w for airports, 100w for highways. Meets every requirement of CAA Specification 1.4B. Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh 30, Pa.


lighting fixtures

Adjusta-Line: fluorescent fixture for installation over windows and doors, easily attached by three screws, then plugged into receptacle. All-metal fixtures. Adjusta-Post Mfg. Co., Akron, Ohio.

Circulars: bases for Circular lamp, two combination of 8" and 12" Circular lamp. Improved recessed holders on Circular. Reduced prices; delivery 30 days. Homecraft Electric Products, 1288 S. redhead Ave., Chicago, Ill.

Combination Air Diffuser-Lighting Unit: square or rectangular; one or 2 lamp. 20w or 200w lamps. Air Devices, Inc., 17 E. 42nd St., New York, N. Y.

Combination Lighting Unit for hospital rooms, with extreme versatility; drastic reductions in maintenance and costs of common lighting fixtures. Improved indirect lighting fixtures using silver-bowl lamps. Kurt Versen Co., 4 Slocum Ave., Englewood, N. J.

Domestic: ceiling lighting fixture; reflecting surface of silvered bowl lamp sheds against deterioration; domes in balanced Twin finial lampholder with five in. spacing. General Electric Co., Bridgeport, Conn.


New Executive Luminaries: fluorescent and slimline lighting fixtures; water-thin depth, lowered or air outdoor; multiluminous red and green lamp units, for standard 40w fluorescent and 3w slimline sizes. All-Bright Electric Products Co., 2917 N. Kedzie, Chicago 18, Ill.

2151 Night Light contains switch and adjustable shutter to regulate light intensity from 0 to 0.5 bulb. 151 Automatic Closet Light: operates by trip lever similar to refrigerator light. Illuminated House Numbers: glass digits; bronze, brass, aluminum finishes. Pryce & Co., Inc., 140 N. 3rd St., Philadelphia 15, Pa.

Pathfinder Light: for steps, walks, driveways, parks, gardens, etc; cylindrical housing, aluminum dome top, white or colored prism lens directing beams downward; low voltage or standard 15v. Camn Electric Development Co., 1715 Uphold St., Los Angeles, Calif.

Pendant-Type Electric Fixtures: pendant set designed to blend with other Syracuse commercial fluorescent fixtures. Syracuse Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.

Prescolite: recessed lighting fixtures, spread- able light in lens for jewelry stores, dining tables, etc. Fluorescent lighting fixture with hinged glass door. Improved rust-proof doors and frames to recessed incandescent fixtures. 30w, for recessed; 15w, for immediate shipments. The Kirlin Co., 3405 E. Jefferson Ave., Detroit 7, Mich.

Recessed Trolley Downlights: for stores, offices, or whatever concentrated light is desirable; individual, end, corner, cross-over, and in-line mounting; standard width fluorescent troffers. Pittsburgh Reflecto Illum., OzlerBldg., Oliver Bldg., Pittsburgh 6, Pa.


Slimline Fluorescent Fixtures: 66" long; instant starting, for office lighting as well as architectural; four piece finish; puhblic walls with fluorescent troffers. Newly designed fluorescent and incandescent fixtures for commercial and residential use. Prices essentially same; available for immediate delivery. Lighthouse Appliance Corp., 728 Broadway, New York 3, N. Y.

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Remote Control Wiring System (General Electric, Bridgeport, Conn.) uses low-voltage lines from small switches to relay which controls line of lights, controlling one or more line outlet box; eliminates heavier wiring between switches and outlets; most valuable when substituted for conventional multiple-switch wiring.

70 PROGRESSIVE ARCHITECTURE
Situated in the Allegheny River valley about 40 miles north of Pittsburgh, this house affords its owners the amenities of a suburban dwelling in an open rural setting. To a great extent these comforts depend upon ample water supply, which is always a problem of the house beyond the city’s limits.

Influence of water supply on design:

HOUSE, KITTANNING, PENNSYLVANIA

CALEB HORNBOSTEL, ARCHITECT
RUTH HORNBOSTEL, DECORATOR
In this house of Hornbostel's, on the outskirts of Kittanning, Pa., is realized a popular desire: to live in the "country" yet retain city comforts. Not so many years ago difficulties with electricity, heating, and water supply were obstacles to its achievement; today extension of electric service and ease of fuel transport have eliminated the first two in much of the country. Water supply remains a local problem. Here, in a house not unduly large, modern water-using facilities are required at seven principal locations: three baths, kitchen, recreation room,
laundry, boiler room; and there are hose bibbs, etc. All these are supplied from a private deep-well pump. The water's quality necessitated softening apparatus, and there is a septic tank sewage disposal system. The architect's skill is evident in the way such complex requirements are fitted into, without dominating, the design. Less fortunate are the suburbanesque landscaping—which does not follow the architect's scheme as drawn—and the somewhat unintegrated downhill facade. Nevertheless the house belongs in its calm civilized country setting.
Recreation room bar: soft drinks for teen-agers, also serves for adult entertainment.

MATERIALS AND METHODS


EQUIPMENT. Kitchen and laundry: electric range, dishwasher, garbage disposal, laundry machinery. Built-in incinerator. Plumbing: vitreous china and porcelain fixtures; copper water tubing; deep-well pump; water softener; electric water heater. Heating: gas-fired hot water boiler; convectors in basement, baseboard units on main floor; automatic controls. Electrical: BX cable; stock lighting fixtures.
Voice and Vision, Inc., a new Chicago firm, was formed to market radio, phonograph, and television equipment in simply connected buildings for use in furniture or construction. Left, units installed in showing room; right, office interior and equipment showroom. Equipment is from top-flight manufacturers; quality of reproduction stated to be excellent; company will install systems for own installation; consulting service available.

Telephone: used with room speaker; provides call initiation at both master and room speaker. System can be connected to telephone stations without manual operation; master unit and door speaker flush mounted; for houses. Webster Electric, Racine, Wis.

13 Tube AM-FM Chassis: custom-built features or line production prices. AM and FM RF stages integrated into subchassis tuning unit; impedances 400 to 75. Two ranges of audio response (normal, high-fidelity). Capital Radio Corp., 100 Metropolitan Ave., Brooklyn, N. Y.

Kitchen, bath equipment


Base Island Server: mobile and table for kitchen use; three glass shelves, hinged extension top. Desk Pedestal: three-drawer kitchen unit; with ironline or Formica top becomes planning desk. Implus of base units with new chrome handles; improved door catches. Refuse Container stainless steel; attaches to sink front door. Miller Metal Products Co., 2215 Russell St., Baltimore 30, Md.

Bathroom Accessories: new line: glass sinks and brackets, towel bar, bathroom holder, toilet brush holder, robe hooks, combination soap holder and grab rail, die-cast from nonrusting metal, finished in chrome. Marish Wall Products Inc., N. Main St., Dover, Ohio.

Crestlyn Lifetime Stainless Steel Sink Tops: fit most undersink cabinets; shallow bowl, positive seal. Fixtures are nonrusting and available in any quantity. Prices far below pre-war on comparable products. Douglas Distribution Corp., 501 Girard St., N. E., Washington 17, D. C.


1949 Earlie Unit Kitchen: quality improved by use of more stainless steel. Prices advanced proportionally less than cost of materials and labor. No units available before Spring, 1949. Earlie Unit Kitchen, Forest Hills, N. Y.

Economy Model Home Ironer: no fuel needed; requires less than two sq ft of space, connects to any line, six in. or larger. Price includes iron, ironing board, and shipment. Majestic Corp., Huntington, Ind.

1948 Electric Ranges: six models for small apartments or large houses; three Radiantube surface cooking units, five degrees of heat; electric coil top and bottom of oven; many redesigned, improved, labor-saving features. Frigidaire Div., General Motors Corp., Dayton, Ohio.

Family Hospitality: bathroom cabinet to hold makeup, shaving, and toilet accessories. Combination Refrigerator-Freezer: 15 cu ft storage space. Low-temperature cabinets include 18 cu ft farm freer. Frigidaire Div., General Motors Corp., Dayton, Ohio.

Garbage Disposal Incinerator: portable, for houses; operates by gas or electricity; can be installed in kitchen, basement, or utility room. Electrocraft Mfg Co., 115 E. Carson St., Pittsburgh, Pa.


Improved Kitchen Appliances: including home breeder, automatic washer, washer, automatic dryer, electric ironer. Frigidaire Div., General Motors Corp., Dayton, Ohio.

Improved Liquid Wall Type Soap Dispenser: new foot pedal pump, immediate delivery. Huntington Laboratories, Inc., Huntington, Ind.

Kaiser Torpedo-Tine Unit: Kaiser Kaiser Expander...Firestone Storage, South Gate, Calif.


Lathushall: combination steel and liquid soap dispenser for commercial, institutional lavatories. 18-8 stainless steel. Large capacity. Gage indicates liquid level. American Dis-
cense, Inc., 215 Fourth Ave., New York 3, N. Y.

Le-Bay Electric Refrigerator: 47" high, designed to form continuous level with sink, stove, other appliances; porcelain interior, automatic defrost. West End Fuel & Electric Co., 244 Hartzert St., Brooklyn, N. Y.

Magic Chef Super-Size Range: one-piece turrent-top gas range, 16 simulated jets. Four burners, two double, one single. Automatic clock control, bell-ringing timer, and heat regula-

Medical Cabinets: stainless steel framed mirrors. Other medicine cabinets with indirect illumination: designed for doctors, hospitals. Costs up from 3% to 10% for most materials, labor, distribution; shipment from one week to 30 days depending on item. Standard Steel Cabinet Co., 3701 Milan

Miami-Carley Bathroom Cabinets: with fluorescent light fixtures; wide choice of mirror designs and cabinet styles. Philip Corev Co., 201 E. Broadway, Brooklyn 1, N. Y.

No. 2 Majestic Incinerator: for domestic installation. Majestic Co., Huntington, Ind.

Murphy Czarniak Kitchen No. 39 compact unit provides oven, refrigerator, sink, and stove. Roll-out, pull-up, cabinet design including refrigerator: all steel, exposed surfaces por-
celain. Drywer Products Corp., Michigan City, Ind.

Park Wing Bathroom Cabinets: two adjustable mirrors, double shelves, built-in light fixture for spot illumination for shaving or make-up. Bonded chrome trim. Fitts Mfg Co., De-
catur, Ill.

Pus-Bustion Electric Range: two deluxe models with control buttons that switch directly to desired speed. Latest addition: 4-speed Col-
rad surface units; non-stain oven; other advantages. Kaiser Electric Mfg Co., 1250 Boston Ave., Bridgeport 2, Conn.


Super Clipper Type X Ventilator: for kitchen oriel-
installations, adjustable hood pops up and smoke; 14 in. motor. Trade-Wind Motor Fans, Inc., 5725 S. Main St., Los Angeles 37, Calif.

Tenney Automatic Defrost System: for low temperature; simplified controls for variations in capacity and speed of defrosting. Tenney Engineering Co., 26 Ave., Bemus Point, N. Y.

Thermador Bitum Electric Range and Oven: stainless steel; large work areas: maximum storage spaces; two heating unit arrangements; eye-level no-stoop oven; improved line of electric heaters and conventional ranges with stainless steel tops.

Tracy Customized Kitchen: including complete line of steel kitchen dishware with stainless steel and porcelain. Available for Im-

Office, drafting equipment

Ammo-Fume Dry Developer: ammonia type dry process reproductions; improved version. High Speed Printers: develops blueprints and direct process prints at speeds up to 12 ft per min. Prices fully higher; products usually readily available. Park & Harvey, 5738 N. Western Ave., Chicago 45, Ill.

Boston Ever Handy Pencil Sharpener: twin mil-
Ling cutters; small, neat, low cost. Redesigned pencil sharpener; improved by added metal strength, streamlined appearance; increased ease; completely available. C. Howard Hunt Mfg Co., 300 E. Madison St., Chicago 11, III.

Circ-L-Scale: 4" instrument of Vinyline, combin-
compass, protractor, ruler, T-square, Inter-
Mfg Co., 512 W. Van Buren St., Chicago, III.

Drafting Equipment: four-post drafting table E-Z Parallel Ruling Board, greatly improved products; wood base and metal base tables; drawings by posture chair after automatic tool tray; Parallel Ruling Board. Engi-
neering Mfg Co., Sherylton, Wis.

Fixture Indicator No. 105: ¼ scale architectural indicators. Both translucent plastic. Same models for ¼ scale. Graphic In-
dicator Co., 1134 E. Western Ave., Los Angeles 6, Calif.

Flex-O-Pic: new cadmium-plated tool for hard-
to-reach parts; cable in flexible sheath; expand-
ing and retracting fingers work around corners or S-turns, will hold firm to anything. Essex Enterprises, 6750 Stony Island Ave., Chicago 40, Ill.

Indacrome: adjustable curve ruler for draftermen, architects, etc. Prices reduced; immediate shipment. Cook Specialty Co., Green Line, Pa.


(Continued on page 108)
AIR AND TEMPERATURE CONTROL

1-220. Sunbeam Saginaw (Form 678), 4-p. folder on gas-fired floor furnaces; may be equipped with electric automatic controls. Features, table of capacities, dimensions and data. American Radiator & Standard Sanitary Corp.

1-221. Air Purification and Deodorization by Use of Activated Carbon (Application Data 42), 8-p. manual on control of odors in air conditioning, selection of suitable air purifier or deodorizer, economy in air recovery, installations, computations, etc. American Society of Refrigerating Engineers. (45 cents per copy; make check or money order payable to American Society of Refrigerating Engineers.)


1-223. Cold Diffusers, AIA 30-F-2 (CR-241), 16-p. illus. bulletin on cold diffusing units providing forced cold air flow, eliminating dead spots and pockets in the refrigerated space. Dimensions, data. Carrier Corp.

1-224. I-B-R Ratings for Cast Iron Boilers (Aug. 1947), 48-p. booklet giving ratings for low pressure, cast iron heating boilers currently sold by manufacturers. Index. Institute of Boiler & Radiator Manufacturers. (50 cents per copy; make check or money order payable to Institute of Boiler & Radiator Manufacturers.)

1-225. Sarcotherm Weather Control, AIA 30-C-25 (No. 500), 20-p. illus. booklet on indoor and outdoor controls for hot water and radiant heating. Typical installation and hook-up diagrams, valve capacities, roughing-in dimensions, list prices and net weights, accessories for control systems, typical specification forms. Sarcotherm Controls, Inc.

1-226. Axiflo (B-3804), 8-p. illus. booklet on elbow inlet box with streamlined fan; low resistance cone housing supports bearings, isolating them from outside air stream. Description. Sturtelvant Div., Westinghouse Electric Corp.

CONSTRUCTION

3-35. Bilt-Well Woodwork, AIA 19-E-12, 198-p. catalog listing comprehensive line of cabinets, doors, entrances, windows, louvers, screens, stair parts, etc. Drawings, photos, descriptions, practical applications, sizes, specifications, index. Carr, Adams & Collier Co.

3-36. Specify Calcium Chloride, AIA 3-B-2 (Bul. 47), 4-p. folder on a concrete curer. Description, general information, comparison charts. Calcium Chloride Ass'n.


Two bulletins on tentative specifications for ready-mixed concrete and recommended practice for design of concrete mix, adopted as standard of the American Concrete Institute:

3-38. Tentative Specifications for Ready-Mixed Concrete (C84-47 T), National Ready Mixed Concrete Ass'n.

3-39. ACI Standard Recommended Practice for the Design of Concrete Mixes (ACI-613-44). American Concrete Institute. (50 cents per copy; make check or money order payable to the American Concrete Institute.)

3-40. Mesker Steel (Cat. E), 24-p. catalog on structural steel products, including roof trusses, bar joists, prefabricated hangars and materials; also ornamental metal work and othermiscellany. Descriptions, photos, typical installations, index. George L. Mesker Steel Corp.

Brochure and bulletin describing purpose and use of modular facing tile, glazed and unglazed. General, detailed data, drawings, plans, elevations, procedure layouts, specifications, coursing tables, index. Stark Brick Co.: 

3-41. New Measure for All Masonry, AIA 3-F-21 (3rd edition).

3-42. Modular Facing Tile.

3-13. For Users of Wood and Forest Products, 8-p. illus. bulletin listing services to architects, engineers, builders, etc., in fields such as timber engineering and designing, technical and consulting services, educational work, research and product development. Photos. Timber Engineering Co.

3-44. Build With Steel, AIA 13-G-2 (Form GB-1), folder with 7 loose sheets describing new method of all-metal frame construction; no drilling or welding necessary. Also roller pipe supports, bar and tubing storage racks, continuous concrete inserts, cable and pipe clamps. Technical, general data, photos, prices. Unistrut Products Co.

DOORS AND WINDOWS

Folder and circular on spiral sash balance and weatherstrip unit making use of spring tension and metal tension to achieve stable sash in runway. Installation instructions, sections, general data. Allmetal Weatherstrip Co.:

4-156. Allmetal Sash Balance & Weatherstrip Unit.


4-158. Revolving Doors (Cat. 148), 4-p. folder on revolving doors made of aluminum, bronze, and stainless steel. General details, plans, dimension tables, specifications. General Bronze Corp.

4-159. Architectural Hardware, 9 loose sheets describing variety of door, window, and furniture hardware in many patterns and sizes, contemporary as well as traditional; special hardware designed to specifications for particular requirements. Photos. Charles A. McCarthy.

Pamphlet and loose sheet on aluminum screens for double-hung windows. Description, installation sections, typical detail. Rudiger-Lang Co.:

4-160. The Easy Way to Fly-Proof Your Home Permanently.

4-161. Tension-Tite Screens.

ELECTRICAL EQUIPMENT AND LIGHTING

5-158. FA Trademark, 8-p. illus. booklet briefly describing line of electrical equipment, including switchboards, panelboards, busduct, wire and cable duct, safety switches, load centers, service equipment, etc. Photos. Frank Adam Electric Co.

Catalog, 2 brochures, and single sheet on incandescent and fluorescent lighting equipment. Descriptions, installation data, wattage and beam distribution, diagrams, illustrations. Gotham Lighting Corp.: 

5-159. Lighting.

5-160. Gotham (GLC-10)

5-161. A Contemporary Design for Liv-
ing (GLC-11)

5-162. First in '48 (GLC-12)

5-163. Presenting the Neo-Ray Louvered Ceilings, AIA 31-F-2 (Cat. 648), illus. folder on louvered ceiling sections; louvers locked in rigid alignment, interchangeable when spot lighting is desired. Computed illumination values, typical installations. Neo-Ray Products, Inc.

5-164. Planet Fluorescent Troffers, 4-p. illus. folder on steel troffer with glass or louver panel, constructed so as to throw light upward as well as downward. Description, suggested installation methods. Planet Products, Inc.

5-165. Contemporary Lighting (KV 204A) (KV 236), two price lists of lighting fixtures. Kurt Versen Co.

INSULATION (THERMAL, ACOUSTIC)


PLASTICS

16-118. Plexiglas for Store Modernization (15748), 16-p. booklet showing various applications of acrylic plastic, including partitions, showcases, lighting fixtures, facades, signs, transparent drawers for stock, etc. Photos. Rohm & Haas Co.

SANITARY EQUIPMENT, WATER SUPPLY, DRAINAGE


19-302. Electric Water Cooler (CP-448-8A)

19-303. Table-Top Electric Water Heaters (ES-648-8 B)

SPECIALIZED EQUIPMENT


19-305. Autocall, 8-p. illus. booklet covering line of fire-alarm equipment. Descriptions, illustrations, wiring diagrams, recommendations for specific installations in industrial and commercial establishments. Autocall Co.


19-307. Ideas in Plaster (Cat. 1), 12-p. illus. catalog on plaster decorations—lamps, sconces, wall paneling, mirror frames, etc.—for domestic and commercial interiors. Descriptions, wholesale price list. The House of Peter de Guard.


Two loose sheet catalogs showing wide variety of hand forged and wrought metal ornamental products: gates, railing, lanterns, andirons, fire screens, etc.; also memorial tablets, statues, and plaques. Photos. Ralph Watkins Metalcrafts:


SURFACING MATERIALS


19-313. Architectural Metal Work (Cat. 248), 4-p. illus. booklet showing metal work installations, such as doors, grilles, entrances, stairways, commemorative tablets, etc. Photos. General Bronze Corp.

Three 4-p. folders on Colorundum, a powdered nonslip aggregate used to color and darken cement or concrete floors and sidewalks. Description, typical installations, specifications, photos. A. C. Horn Co., Inc.: 19-314. Colorundum (461002310).

19-315. Horn AE Dispersed Black.

19-316. Colored Sidewalks.

19-317. Murphy Color-Scheme Paints, 22-p. catalog on complete Murphy line—paints, varnishes, sealers, etc. Includes description new paint buying and specifying method: pigments in accurately sized tubes plus ready-mixed base white, with color chips showing tint obtained; method devised to cut costs and provide control over color. Index. Murphy Paint Div., Interchemical Corp.

19-318. Alumination, 22-p. pamphlet on use of aluminum in building construction. Answers questions on detailed designs, structural methods, service conditions, etc. Comparative gage numbers and weights, selected aluminum alloys for building applications. Permanente Products Co.

TRAFFIC EQUIPMENT

20-237. General Elevator Company, Incorporated, 12-p. bulletin on elevator machines, controllers, and variable voltage selector, which includes all floor relays, slow down and timing relays, and all signal actuation. Descriptions, approximate duty range, maximum motor rating, class of service; photos. General Elevator Co., Inc.

(To obtain literature coupon must be used by 3/1/49)

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I should like a copy of each piece of Manufacturers Literature circled below.
We request students to send their inquiries directly to the manufacturers.

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PLEASE PRINT

JANUARY, 1949 79
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PIPING. Used as piping for heating systems, water supply and waste lines, Revere Copper Water Tube provides a lifetime of trouble-free service. The interiors of this tube do not become clogged by corrosion; and remaining permanently smooth, they reduce frictional resistance to a minimum. In addition, because Revere Copper Water Tube bends readily, and joints are made quickly with solder fittings, this tube is easier to install.

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selected details

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Kittanning, Pennsylvania

CALEB HORNBOSTEL
Architect

JANUARY, 1949  81
ALWAYS specify Honeywell to provide the homes of your clients with the latest features in heating comfort.

With Honeywell’s new Chronotherm—the finest electric clock thermostat ever built—homeowners enjoy the most carefree heating comfort they have ever known, plus substantial fuel savings. At bedtime, Chronotherm automatically lowers the temperature, or entirely shuts off the heat supply. Then, in the morning, heat is restored before the family arises. The result—never a worry about heating plant operation, with fuel economy as well.

For all forced air installations, the handsome new Honeywell Register puts an end to discomforting blasts of air. Instead, an even blanket of air is diffused to every corner of the room. Cold spots are eliminated—so are unsightly wall and ceiling streaks. And installation costs are drastically reduced. Minneapolis-Honeywell, Minneapolis 8, Minnesota . . . In Canada: Leaside, Toronto 17, Ontario.
selected details

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Corona del Mar, California

FRANK GRUYS
Architect

JANUARY, 1949 83
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For 45 years, Youngstown Steel Pipe has served plumbing and heating contractors dependably—enabling them to furnish adequate water and heating systems to customers at lowest cost.

Whether you use a few feet or thousands of miles of Youngstown Steel Pipe, you can depend on its uniformity—uniform in metallurgical and chemical properties for easy, accurate bending, cutting, welding and threading—uniform in diameter and roundness—cut to uniform lengths—uniformly smooth inside for minimum friction—in short, uniformly satisfactory.

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34 PROGRESSIVE ARCHITECTURE
This is the story of two brothers.

It has its beginning in a Northern province of Czechoslovakia. Two small boys were sprawled on the banks of the broad Elbe River. This afternoon was not unlike many others. For often they sat by the river and talked, sometimes until sundown.

"I'm going to be rich when I grow up," Karol would vow. "I'll own much land . . . and everyone will point to me and say, 'There is Karol Mahacek. He is the richest man in all Czechoslovakia.'"

Then Jan would watch for that familiar look of determination he had seen so many times on his brother's face. He would see his dark eyes growing larger and brighter, shining already with the happiness the future promised. And he would nod at his brother. Yes, Jan thought, Karol is smart. Yes, Karol will be rich some day.

But Jan, too, had dreams . . . dreams he dare not even tell. For Karol would surely think them strange. So he said nothing. He just sat there and looked out into the horizon. Somewhere beyond the Elbe there was an ocean . . . and beyond that? Well, some day he would know.

Old Eduard Mahacek considered his sons—what the future held for them. He even prophesied it many times.

"Jan is a dreamer. He is the one with imagination, but he is not as ambitious as Karol."

Yes, even at an early age, Karol was marked for success.

As for Jan, well, maybe it was an accident that he happened to be on the village dock when a river boat stopped for cargo. Maybe it was fate when on an impulse he took a job on the boat and found his way to the sea, to a different way of life—for Jan came to America.

It wasn't easy for him, at first, this new world. He used to write home about the strange American ways. Yet, there was always something wonderful to tell. He was making progress. He had a good job—good pay.

But Karol's letters were different—filled with uncertainty. He couldn't save to buy the land he promised himself he'd one day own.

What does the story of these two brothers mean—and why are their lives so different today? For Jan Mahacek faces the future with confidence—owns his own home—a car—his family is well fed, well clothed.

While Karol is a man without hope—his family ill clothed, ill fed—no home of their own.

The answer is simple, for both are symbols of America and Europe. Actually, there is no difference in the people here and there. We are all brothers under the skin. Like Jan and Karol, we are Czechs, or we're English, French, German, Spanish, Finnish, Norwegian, Polish, Italian . . . just as people are there. We are the same people, with the same blood, the same native ability. But there is one essential difference...
BOOKS

TAKEING ART FOR GRANTED

Made In America. John A. Kouwenhoven. Doubleday & Co., 14 W. 40th St., New York 20, N. Y., 1948. 304 pp., illus. $5.00

If you comfortably assume that all the Art of this country is safely caged in museums and galleries for inspection by those who may wish to “improve themselves,” this is a book to cause you some uneasiness. The objects, machines, and buildings in everyday use by Americans are given a friendly appraisal by Kouwenhoven, for their artistic worth and the ideas of their self-reliant makers. Imported works of art and those among us who have adopted, more self-consciously, the culture of Western Europe are separately described. He assumes that “the elements of creative vitality in American civilization matter a great deal, not only to Americans but to other peoples as well” and cannot be understood unless the distinctively American stamp is recognized.

Traits that the author ascribes to American designers, evident from earliest days of colonial manufacture but more forcibly in the 19th century, include “functional simplicity,” “mechanical practicability,” “ingenuity and boldness,” and the skills and knowledge “to create patterns of clean, organic, and indigenous beauty out of the crude materials of the technological environment.” He quotes early American writers and philosophers who perceived, more or less clearly, the importance and esthetic impact of American manufactures. Then Kouwenhoven traces the similar reflection of American forthright ideas in painting and architecture. Realism and “what the artist knows is right” emerge in such a critical evaluation.

Further perception of the author’s analysis of the contrast between American and European design intents is gained through perusal of such accounts of activities (approaching the weird) in Victorian ateliers and studios as those contained in Siegfried Giedion’s Mechanization Takes Command (reviewed in July 1948 P/A), T. H. Robsjohn-Gibbings’ Mona Lisa’s Mustache (reviewed in December 1947 P/A), or Hugh Casson’s just-published Introduction to Victorian Architecture. The implication is strong that Kouwenhoven is exactly right.

C.M.

IMPROVING ENVIRONMENT

Public Health Engineering, Volume I Earl B. Phelps and collaborating authors. John Wiley and Sons, Inc., 440 Fourth Ave., New York 16, N. Y., 1948. 655 pp., illus. $7.50

This is a “textbook of the principles of environmental sanitation.” While it might seem like a heavy tome for a busy designer to read, it is the factual basis for much of the progress in architecture that concerns itself with a truly improved environment. Two divisions deal with The Air Content and The Water Content. The subject matter of the various chapters ranges from the effect of weather and climate on housing to rural sanitation. The approach is broad enough to have many implications to the architect who really wants to know what scientific advances have been made in this field.

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PITTSBURGH CORNING GLASS BLOCKS offer numerous interesting possibilities in residences of both traditional and modern architecture. Around front entrances as shown here...above kitchen work surfaces...in stairwell walls, and for partitions. These versatile blocks make rooms look brighter, smarter, more cheerful. They transmit daylight generously, yet provide privacy. Their insulating properties cut heating costs. Design by and for Risch Building & Real Estate Company, St. Louis, Mo.

A NEW Carrara edge pointing compound has been developed in "Pittsburgh" laboratories to assure better Carrara installations. Setting into a tough, resilient, non-absorbent film, the new compound maintains high adhesion to the edges of the Carrara Glass. This development is typical of the work being conducted in "Pittsburgh" laboratories — and typical of the spirit to constantly improve both the quality and the performance of "Pittsburgh" products.

HERE IS A cutaway view of a Twinwindow unit. Notice that it is made of 2 panes of "Pittsburgh" Glass enclosed in a protecting frame of stainless steel. (Actually, any number of panes can be used.) Because each unit has permanently sealed-in air spaces, Twinwindow gives effective insulation. 2-pane units cut heat losses through windows just about in half. And correspondingly greater savings are provided as additional panes are added.

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JANUARY, 1949 89
For Colonial Charm... 1949 Style

It's Bruce Random Plank Floors

When you seek to create rooms that are strikingly different in style and beauty, specify plank floors—in random widths. Bruce Solid Oak Planks retain all the authentic charm and casual effect of historic plank flooring. Yet they are thoroughly modern in construction and are in keeping with present-day refinements in the home.

Ideally suited to the many variations of Colonial architecture, and to the rambling Ranch types, Bruce Plank Floors are decoratively and historically correct for all traditional styles.

The three distinctive grades of Bruce Solid Oak Planks are Mansion, Fireside, Tavern. They possess individual grade characteristics and permit a choice to achieve the effect desired—whether it be formal or informal.

Consult your Sweet's Catalog File for more information on Bruce Plank Floors. Or write E. L. Bruce Co., Memphis, Tenn.

BRUCE ALSO MAKES Strip Flooring, Block Flooring, Hardwood Molding and Trim, Pine and Hardwood Lumber, Furniture Parts, Cedarline Closet Lining, Everbond X Mastic, Terminix, Floor Finish and Maintenance Products.
This is the third of the new monthly columns by Bernard Tomson, New York lawyer who has made a special study of the law as it affects architecture, engineering, and building construction. He has previously contributed articles to P/A in the "Office Practice" series and started his regular column in our November issue.

Recently architects have been deluged by letters, brochures, and policies of companies offering professional liability insurance. An investigation reveals such a disparity in premium rates as to indicate that a disparity also exists in the coverage of the policies. It is, of course, important for an architect interested in purchasing professional liability insurance to read the policy itself in order to determine what coverage is actually obtained; for, even careful reading of the literature accompanying the policy may result in a misconception of the protection afforded. We have selected two typical policies for discussion which are designed to protect the architect against his "errors and omissions."

It should be pointed out that "errors and omissions" that may result in liability to the architect may be divided into three arbitrary classifications:

1. Those resulting in physical injuries to persons or property (cracked walls, collapsed roofs, etc.)
2. Those resulting in pecuniary loss to the owner other than that arising out of physical damage (total or partial lack of utility or esthetics of the structure; financial loss to the client as a result of negligent underestimates of cost, etc.)
3. Damages to the client as a result of dishonest, fraudulent, criminal, or malicious acts, etc.

The last category is apparently exempted from coverage in both policies. Since a substantial number of the claims made would fall into the second as well as the first category, it is incumbent upon the architect to determine whether it is important for him to be covered in both categories. It should be kept in mind, of course, that coverage is directly related to the cost of insurance.

**POLICY A**
The lowest-cost policy by its terms covers "liability imposed upon him (the architect) by law for damages... because of bodily injury... sustained by any person or persons; and because of injury to or destruction of property, including the loss of use thereof, in direct consequence of any negligent act, error, or omission of the insured, in performance of professional services for others in the insured's profession as architect." Policy A apparently would furnish insurance only in the first category outlined above.

Reference to the brochure accompanying this policy, however, could very easily lead to an erroneous conclusion as to coverage. (We will not discuss at this time the interesting question as to whether the brochure, by its language, or statements by the broker in any way enlarges the coverage set forth in the policy itself.) If the apparent limitation of the language of the policy is kept in mind, it is difficult to understand statements in the brochure which read:

"The Broadest Professional Liability (Continued on page 94)"
WHEELER BALLASTS FOR SLIMLINE

Next time you work a slimline lighting treatment into your plans for a commercial, educational or industrial installation, check to be sure that the fixtures are equipped with Wheeler ballasts. You'll be doing your client an additional service by specifying ballasts that will give him maximum performance and economy. You'll be doing yourself a service by preventing future complaints of faulty fixture operation due to inferior components. Wheeler ballasts can play an important part in the success of your plans and recommendations.

We believe a fluorescent ballast should—besides operating a lamp—give the user the assurance that he is incorporating into his product the best ballast obtainable. He should feel that he's getting quality materials assembled by experts and tested to rigid specifications before they go into his fixtures.

Wheeler ballasts for slimline lamps meet the most exacting requirements. They're designed to give added lamp life, with a minimum of operating heat and noise. They're rated conservatively, built to uniform standards of dimension and carry the Wheeler guarantee without reservation. All Wheeler ballasts for slimline fluorescent lamps are approved by Underwriters' Laboratories, Inc.

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MAGNET WIRE-COILS-COMMUNICATIONS EQUIPMENT

MATERIALS FOR ’49

OPENINGS
(Continued from page 98)

walls. Types, sizes for every window. United Steel Fabricators, Inc., Wooster, Ohio.


Prefabricated Awning Windows: for no-draft ventilation. Moveable sash opens by worm and gear mechanism. Interchangeable screen and storm, each installed indoors. Fixed and moveable sash may be combined. Unit complete with hardware, glass, and screen. Weather stripping included on lamb sections; available for horizontal joints. Gute City Sash & Door Co., Fort Lauderdale, Fla.


AIR AND TEMPERATURE CONTROL
(Continued from page 67)

Model 401 Radiant Panel Heater: gas-fired, compact vertical design; fits into wall; three sizes; non-thermal pilot for manual operation or Bryant Model "H" pilot for automatic operation. Bryant Heater Co., 17625 St. Claire Ave., Cleveland, Ohio.


Oil-Burning Floor Furnace: with auxiliary cold air return duct system; welded steel construction, black enamel finish, 36,000 Btu at 40 cc. per min air flow. Oron Co., 2226 S. Third St., Columbus, Ohio.

Oil-Burning Space Heaters: also new oil-burning trailer heaters. International Oil Burner Co., 3800 Park Ave., St. Louis Electric Laboratory, 6131-33 S. Wentworth Ave., Chicago 21, Ill.

Oil Console Heater: welded aluminum alloy finished in baked enamel; manual oil control valve, minimum voltage even temperature. Rheim Mfg. Co., 570 Lexington Ave., New York, N. Y.


Suspended Heater: completely enclosed; 100,000 Btu only. "Shells" Floor and Dual Furnace: 25" depth. Vented and Non-Vented Thermolux console heaters: four capacities, from 37,500 to 100,000 Btu. Prices range from $32.00 for economical, though materials, labor, distribution costs increased. Naco Mfg. Co., 5221 Roseberry Ave., Huntington Park, Calif.


Vented Heater: well-installed for heating on both sides of partition; available with inputs of 37,500 and 45,000 Btu for natural, manufactured, or LP gas. Holly Mfg. Co., 875 S. Arroyo Parkway, Pasadena 2, Calif.


Warm Air Space Heater: cool-fired, convertible gas or oil; stainless steel combustion chamber; for factories, foundries, garages, other industrial, commercial uses. Dravo Corp., Filth & Liberty Ave., Pittsburgh 22, Pa.

Warmaster 50: wall type circulating heater to fit between 2 x 4 studs on 16" centers without turning or special framing; for apartments, hotel rooms, offices, guest cottages. Williams Radiator Co., 1801 Flower St., Glendale 1, Calif.


(Continued on page 102)
Radiant Heating Systems Can Lose 60% Heat—and More thru Improper Insulation

Radiant heating from above is intended to warm the 90% emissive ceiling below, which in turn radiates heat to the room. But without proper controls, like Infra, less than 50% of the heat from the panel ever reaches the ceiling since heat flows by radiation and conduction in every direction. Furthermore, when the area above the panel is colder than the ceiling below, then, since heat flows to cold in radiation and conduction, only a fraction of panel heat reaches the ceiling. ALL convected heat, since it flows up, is also lost.

Putting Infra Insulation above the panel reflects 97% of the upward flow of radiant heat down again to heat the ceiling. Upward flowing conducted and convected heat are blocked. No more than 3% of ALL heat reaching the surface of Infra away from the heat source is emitted.

Radiant Heating via Floors

Where radiant heating operates upward from the floor, heat losses by conduction through solids are great. Heat flows by conduction in every direction. It also follows the law that heat flows to cold.

Naturally, there is a greater flow of heat to the colder, greater mass of earth below than to the floor above. Properly installed with air spaces under the heating panel, Infra saves most of the heat otherwise dissipated.

Infra produces heating economies

Infra Insulation increases comfort, reduces fuel costs, makes less expensive heating installations possible.

Write for free samples and our free 32 pp. booklet: "Simplified Physics of Thermal Insulation," Address Dept. PA.

Architects and engineers use it as a handbook, and colleges as a text, on Heat Transfer, Condensation, Vapor, Mold, etc. Contains master chart of k, c, r, and U factors of all insulations, of all thicknesses, densities, weights, etc.

Infra INSULATION, INC.
10 Murray St., N.Y., N.Y.

JANUARY, 1949 99
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UNLIMITED!

Versatile Unistrut concrete inserts, Unistrut adjustable framing and Unistrut roller pipe supports which accommodate 1- to 36-inch pipe—here's a combination that assures uniform pitch or slope, reduces buckling and makes welding, testing and jacketing quick and easy.

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You also can quickly, easily and economically build all types of shelving, framing, supports, mounts, rocks, tables and benches—pipe and cable hangers, and fluorescent supports—and many other structures with only a hacksaw and wrench.

Here's real "strength without bulk." Competely adjustable and reusable, Unistrut is steel channel with a continuous slot. You simply insert the Unistrut spring nut at approximate point where you wish to attach another framing member, slide to exact position, bolt and tighten. No drilling or welding required.

Unistrut gives flexibility and installation advantages that can't be attained by old-fashioned methods of frame construction.

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MATERIALS FOR '49

OPENINGS

(Continued from page 54)

Alwinitite Windows: number of stock sizes increased from 12 to 25. Added 4/4 windows to line. Auxiliary trim or siding stop for brick-in or build-in of windows during construction progress; eliminates exterior wood casing, sub-gill. Aluminum Window Corp., Stewart Ave., Garden City, N. Y.

Basement Window: completely redesigned. heavy duty steel; "bondering" improves shop finish on all products. Critelli-Federal, Inc., P. O. Box 60, Waukesha, Wis.

Double-Hung Sash: for double-insulating glass windows; adaptable to conventional frames; volume production and quick installation. Blank Millwork & Lumber Co., Inc., Midland Park, N. J.

Formed Steel Surrouns: for residential casements or where wider and molded frame appearance is desired. 18-gage electroplated steel, bonded, baked-on primer. Truscon Steel Co., Youngstown, Ohio.

Gilding Window Units: improved, with plastic sill track; heavier jambs, narrower over-all jamb width for greater installation flexibility; stock sizes further standardized. Small price increase. Andersen Corp., Bayport, Minn.


Inside Storm Window: open-in sill ventilator, steel frame, for Fenestra steel casement windows and screens, as complete window unit. Detroit Steel Products Co., 3209 Griffin St., Detroit 11, Mich.

Lok'd Bar Sash: with ventilators for use with standard interior screening in industrial plants; may be operated manually or electrically. Hope's Windows, Inc., Jamestown, N. Y.

Ludwig Snap Fastener: permits quick change from screen to storm window; spring steel, cadmium plated, attached with single screw. Ludwig Mig. Co., Inc., 3401 Durant Ave., Racine, Wis.

Super-Vent Awning Type Windows: single handle operates all vents which open to left; both sides of vents cleaned from inside. Super-Vent Co., 303 W. Monroe St., Chicago 6, III.

Metal Window Wells: heavy galvanized copper steel with flanges for attachment to masonry

(Continued on page 100)

NOTICES

SCHOLARSHIP

Applications for the 1949 LeBrun Traveling Scholarship, which provides $2800 to be used for six months' travel and study of architecture outside the U. S., are being accepted until January 21. Details may be obtained from the LeBrun Scholarship Committee, N. Y. Chapter, A. I. A., 115 E. 40 St., N. Y. 16, N. Y.

CASH PRIZES

Award Committees of the Architectural League of New York have announced two $200 prizes to be awarded this year. The Birch Burdettte Long Memorial Prize is offered for architectural renderings, by renderers under 40, that "best bring out the beauty of modern design." The Henry O. Avery Prize is offered for the best piece of sculpture submitted. Results of both competitions will be exhibited at the League, February 11-23.
Modern Engineers Know How to "Duct" Their Distribution Problems

Electrical men, all over the country, are finding Walkerduct not only a convenience, but a practical necessity in providing new buildings with flexible power and telephone services.

With a Walker Underfloor Installation hundreds of electrical outlets are on "instant call" . . . ready to supply the immediate needs of today or the changing requirements of tomorrow.

Whether it's an office building, bank, store, school or factory, Walkerduct will answer each electrical need before it can become a problem.

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Positive Under Screen Control for Metal Casements

The No. 4703AF Casement Operator, featuring Getty exclusive internal gear construction, has been developed as the latest in casement window controlling devices. Precision-built to high standards, efficient operation is assured for light, medium and heavy section windows for all types of construction. Its functional refinements and dependable performance are such that it has been preferred by leading architects and specified by metal window manufacturers over a period of years.

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- Factory-lubricated for life
- Positive protection for all working parts
- Low in cost, long on service
- Constant, continued ease of operation

Cut-away view shows the case-hardened steel worm, integral with operating arm, fully engaged at all times with the accurately-machined internal-gear teeth. This exclusive feature, pioneered by Getty, is responsible for the strength and dependability of these operators.

WRITE FOR CATALOGUE

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3348 N. 10th STREET, PHILADELPHIA 40, PA.

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It's the Law

(Continued from page 94)

POLICY B

This policy agrees to indemnify the insured against any claim which may be made "by reason of any negligent act, error, or omission in or about the conduct of any business conducted by or on behalf of the firm in their professional capacity." This language, of course, is much broader in scope than the language of Policy A. There is no limitation of liability to errors or omissions which result in injury to person or property.

This language is broad enough to include the second as well as the first category heretofore discussed. However, by the terms of Policy B fraud, libel, slander, and other torts of this nature are specifically excluded.

Policy B was not drawn to be specifically applicable to architects. It is a policy that is used by lawyers, doctors, and other professional men. Thus, the language contained therein affords a greater coverage and protection to the architect than a policy such as Policy A, which was specifically designed for architectural liability. However, once again, it must be emphasized that Policy A is a low-cost policy presented as part of a planned group program. Policy B, on the other hand, calls for a much greater premium for its wider coverage.

There are, however, even under Policy B, certain provisions which weaken the protection of the architect. There is, for example, a deductible clause of $250.00 whereunder the insured bears the risk of any claim which does not exceed $250.00. Policy B may be cancelled by either party on giving ten days' notice of his intention to do so. Further, the company will be liable only for claims which are made against the insured during the subsistence of the policy. Under the terms of this policy, therefore, the insured architect might be prejudiced by the failure of the injured party to make a prompt claim.

It is important to the practicing architect in considering the purchase of professional liability insurance that he know exactly what he is buying and the extent of his protection. There should be no reliance upon the literature which is distributed to sell the various types of policies offered, although such literature may serve to emphasize the need and desirability of professional liability insurance. The only safe and sensible procedure is to study the policy itself to determine its exact coverage. It may well be that more than one type of policy may have to be purchased in order to afford the architect the extent of protection desired.
CONTAINER CORPORATION OF AMERICA
provides perfect working conditions including...

ANEMOSTAT Draftless Air Diffusers

To insure draftless distribution of conditioned air in their Chicago offices, Container Corporation of America specified Anemostat Air Diffusers.

Because of their aspiration effect, Anemostats eliminate stale air pockets, equalize temperature and humidity. These devices permit a high number of air changes per hour with complete freedom from drafts. These comfortable working conditions mean fewer colds, less absenteeism, greater personnel efficiency.

By using Anemostat Air Diffusers in heating, ventilating or air conditioning systems, you can give your clients draftless comfort ... a healthful, more profitable environment. Use Anemostats to correct faulty existing systems. Be sure to specify Anemostats for new installations. Write today for full information.

The Anemostat Air Diffuser is distinguished by the exclusive feature of aspiration...drawing room air into the device where it is mixed, within the unit, with the supply air before it is discharged in a multiplicity of planes.

ANEMOSTAT

DRAFTLESS Aspirating AIR DIFFUSERS

ANEMOSTAT CORPORATION OF AMERICA
10 EAST 39th STREET, NEW YORK 16, N.Y.
REPRESENTATIVES IN PRINCIPAL CITIES

"No Air Conditioning System is Better Than Its Air Distribution"
(Continued from page 92)

Form Obtainable.

"The Insurance Company agrees to pay on behalf of any insured architect all sums which he might be obliged to pay by law for loss to persons or property which is a consequence of negligence in performance of professional service."

"An architect who substantially under-estimates, through lack of skill and care, the cost of a proposed structure, which representation is relied upon by the employer in entering into the contract and proceeding with construction, may not only forfeit his right to compensation, but may become liable to his employer for damages."

Policy A is not the "broadest form" obtainable, it does not agree to pay all sums, and it does not cover under-estimates of cost.

In the same brochure, under the heading "Typical Court Cases Relating to Liability of Architects" six court cases are referred to. But the language of the policy seems to cover only three of the six cases as digested. These cases involve the collapse of a roof, a cracked wall and the death of a workman resulting from the collapse of the building.

The other three cases, which are used to illustrate the possible and potential liability of an architect, as digested, are apparently not covered by the terms of Policy A concerning which the brochure was written. The purpose, therefore, of including them in the brochure is inexplicable.

One of the cases referred to in this brochure refers to the liability of an architect for fraud. By the express terms of Policy A, however, the company is not liable for fraud. In a second case referred to in the brochure an architect had negligently supervised the construction of a building resulting in a departure from the plans agreed upon. There was a variation in roof projection and construction in the front of the building as compared with the other three sides. This is regarded as an esthetic loss to the owner of the building and would not be covered by Policy A if it offers the architect protection only from injuries to person or property. The digest of a third case referred to in the brochure, which would not seem to be covered by the terms of Policy A, relates the situation in which an architect was held liable for failure to exercise reasonable taste. Once again, this is not an injury to person or property for which the policy would seem to protect the architect. It can readily be seen, therefore, that the statements and cases referred to in the brochure in question do not limit the frame of reference to those situations where there is actual injury (as distinguished from damage) may cause a misconception as to the extent of coverage of Policy A.

It is also of interest to note under Policy A that the policy only applies to negligent acts, errors or omissions which occur during the period of the policy and that claims for damage must be instituted within five years after the end of such period. Also this policy may be cancelled by either party within five days after written notice.

Policy A also provides that if the insured has other insurance against a loss covered by this policy, the company shall only be liable for a proportionate share of such loss.

An exchange of correspondence between the insurance company writing the policy, the broker offering it, and the writer will serve either to reconcile the apparent discrepancies between the brochure and the policy itself or to indicate a very necessary change in the statements in the brochure or the language of the policy. After the conclusion of such correspondence, a report will be made in this column.
IT'S HERE
the new
Durisol
3-IN-1 Insulated Roof Plank
Combines
1. ROOF DECK
2. THERMAL INSULATION
3. ACOUSTICAL CEILING
in a single fireproof material
at one installation cost

SAVES UP TO 20%
over equivalent flat roof construction!

The Durisol Insulated Roof Plank combines in one unit all
the components needed for the roof deck: structural
strength, thermal insulation, and cement surface...plus an
unusually efficient acoustical ceiling. Construction costs are
thereby reduced to a minimum.

The Durisol insulated roof deck is complete — ready for
application of the built-up roofing — after two simple, high-
speed operations: attaching planks to the framework, and
caulking the joints. And furthermore the underside of the
planks becomes the finished Durisol acoustical ceiling.

The Durisol Insulated Roof Plank is made in 3¼" and 4¼"
thicknesses (including ¼" cement coating) 16" width with
sides tongue-and-grooved, and in lengths to span up to 8'.
It is incombustible and supports a live load of 40 pounds
per square foot with a high safety factor.

WHAT IS DURISOL?
Durisol is made from chemically mineralized wood shavings
combined with Portland cement. In addition to the Insulated
Roof Plank, Durisol is also moulded into wall slabs, sheathing,
hollow blocks, soffit blocks, and other forms to meet a
wide range of construction needs.

Durisol is mould-proof, rot-proof, termite-proof, vermin-
proof, and unaffected by moisture. Its high thermal insu-
lating and sound absorbing properties combined with its
strength, light weight, and incombustibility make Durisol an
outstanding material...Durisol opens up unusual possibili-
ties for increasing construction efficiency and reducing
construction costs.

Write for full facts today! Illustrated catalog
folder and special bulletin on the Durisol
Insulated Roof Plank will be sent by return mail.

Durisol
INC.
420 LEXINGTON AVENUE • NEW YORK 17, N.Y.
Reason number one—and a big one, too—is PROVED POPULARITY! Crane is the name your clients prefer . . . as proved time and again in nation-wide surveys.

Reason number two is QUALITY . . . as reflected in the lasting brilliance, the smart styling and the extreme dependability of every Crane fixture. And don't overlook such Crane extras as fingertip Dial-ese controls—in all Crane bathrooms, kitchens and laundries.

Reason number three? COMPLETENESS! Crane offers a style for every taste—a price for every budget. In heating, too, the Crane line is complete, providing equipment for any system, any fuel.

When making selections, refer to your copy of "Crane Service for Architects," or ask your Crane branch to supply one. Of course, not all fixtures are immediately available everywhere . . . check your requirements with your Crane branch or wholesaler.

Featured in the Crane Bathroom below are the 1-110 Drexel Lavatory, the 2-83 Criterion Bath, and the 3-120 Drexel Toilet.
Seven new planes completed ...at a cost of $4.30!

New planes can’t fly without control cable, and this manufacturer needed some—fast. He got it the same way he regularly gets many supplies and parts—by Air Express. Ordered in A.M., delivered to plant same day. 500 miles, 28 lbs., Air Express charge only $4.30. So production continued without a break.

$4.30 included pick-up and delivery at no extra charge—and receipt for shipment. All this, plus the world’s fastest shipping service. That’s Air Express—used with profit by every business.

Facts on low Air Express rates:

22 lbs. of new fashions goes 700 miles for $4.73.
6-lb. carton of new jewelry line goes 1,000 miles for $8.24.
Same day delivery in both cases if you ship early.

Only Air Express gives you all these advantages: Special pick-up and delivery at no extra cost. You get a receipt for every shipment and delivery is proved by signature of consignee. One-carrier responsibility. Assured protection, too—valuation coverage up to $50 without extra charge. Practically no limitation on size or weight. For fast shipping action, phone Air Express Division, Railway Express Agency. And specify “Air Express delivery” on orders.

Shipments go on all flights of Scheduled Airlines. Speeds up to 5 miles a minute—no waiting around. Direct service to over 1,000 airport cities, airrail for 22,000 off-airline offices.

MATERIALS FOR ‘49

AIR AND TEMPERATURE CONTROL

(Continued from page 100)

Textile Thermoblower: unit heater maintains heat transfer capacity in textile mills with minimum of cleaning maintenance; new construction claimed to reduce clogging. Grinnell Co., Inc., Providence I, R. I.


unit heaters

Cabinet Unit Heaters: with silent operating reversible blower assembly and resiliently mounted motor; steam or hot water systems in commercial and industrial buildings. Ventilow Unit Heaters: improved “free convection” channel surrounding motor permits cool air flow to pass through; circular core design reduces weight 35%. Young Radiator Co., 709 S. Marquette St., Rockford, Ill.


Gas-fired Unit Heaters: automatic forced-air gas heating for commercial and industrial applications. Few small price increases; prompt shipment. Carrier Corp., 300 S. Geddes St., Syracuse 1, N. Y.


Gas-fired Unit Heaters: cast iron or sheet metal heat exchangers. Modu-Aire Units: heating and cooling units for multiple room installations. U. S. Air Conditioning Corp., Como Ave. B. L., at 33rd, Minneapolis, Minn.

Low Outlet Temperature Unit Heaters: primarily for use in steam in ranges of 20 lbs. pressure; widely spaced heater fins help reduce clogging; advantageous in textile mills. Modine Mfg. Co., 1522 DeKeven Ave., Racine, Wis.


ventilation

Attic Fan. Type EV: package unit; spring mounted, vertical air discharge for attic or other locations of similar type. Carrier Mfg. & Blower Co., Inc., 1206 Grove St., Irvington II, N. J.


Fanndy Ventilation: high-velocity power unit, Aluminum, galvanized, or galvanized steel construction; improved one-piece, cast aluminum fan. Can be equipped with breather duct, which permits use of standard motor and mini- mizes possibility of corrosive fumes. H. Robertson Co., Farmer’s Bank Bldg., Pittsburgh, Pa.

Ilg Self Cooled Motor Propeller Fans: new line of Type "Q" for kitchen and attic installations. Type "PB" direct connected and belt driven centrifugal fans, for pressure work. 12½% price increase. All, available on reasonable delivery basis. Ilg Electric Ventilating Co., 2510 N. Crawford Ave., Chicago 41, Ill.


(Continued on page 104)
Builders choose KIMSUL for its Low Cost — High Insulating Efficiency

Pictured here are three of the 35 different styles of houses being built at Newton, Iowa, employing streamlined construction methods devised by Chief Engineer J. Buford Jenkins. This is a 100% site-prefabricated project. Leaders of the non-profit organization financing it, say the houses will sell for $8,000-$10,000. It is expected that 1000 units will be completed within three years—all of them insulated throughout with KIMSUL.

Whether you're building one house or a thousand, investigate first the many advantages of using KIMSUL insulation. For KIMSUL, with a "k" factor of 0.27, is the only many-layer stitched blanket type of insulation—and that means uniform efficiency over every inch of covered area. No thick spots—no thin spots where heat can leak out. What's more, KIMSUL comes in light, handy, compressed rolls, so it's easier and more profitable to install. No need for skilled workmen or expensive machinery. And KIMSUL is the only insulation with the fire-resistant Pyrogard* cover.

For further information, see your distributor, or write for our free booklet covering the latest techniques in the insulation field.

KIMBERLY-CLARK CORPORATION
Neenah, Wisconsin

America's Finest New Homes are insulated with Kimsul!
Long-lasting service... a bright, clean appearance. That's the combination Terrazzo brings to floors. Made with a matrix of Atlas White Cement, enduring Terrazzo floors hold their original beauty through years of constant foot traffic.

Because Atlas White Cement is outstanding for both uniformity and whiteness, color pigments and aggregates show up at their best, in either contrast or blend. An infinite variety of color tones and shadings are possible... not only in Terrazzo, but in Stucco, Cement Paint and Architectural Concrete Slabs.

Atlas White complies with Federal and ASTM specifications for portland cement. It has the same advantages for concrete and is used in the same way. Concrete made with Atlas White cleans easily. Maintenance costs are low.

For further information on the uses of Atlas White Cement, see SWEET'S CATALOG, Section 4B and 13B 8, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.

MATERIALS FOR '49

AIR AND TEMPERATURE CONTROL
(Continued from page 102)

Unit Ventilation newly designed for heating and ventilating school classrooms. Contains floating heating element with steam distributing tubes, pressure equalizing unit with check valve device, and condensate, cooling surface. Hermon Nelson Corp., Moline, III.

Vertical Air Discharge Cooling Units: for large-scale cooling of water, oil, gas, as well as steam and vapor condensing in any combination. Three models: 5,000,000 to 15,000,000 Btu per hr. Young Radiator Co., Roselle, Wis.

Walten Furnaces electric floor lamp with built-in exhaust fan. Extra Size Industrial Humidifiers: three sizes of unit capacity, for large factory requirements. Also improved humidifiers for residential, office, and industrial installations. Prices held down. Abbecon Supply Co., 54-10 41st Dr., Woodside, N. Y.

Warm Air Blower: for houses up to two bedrooms, 24" and 18" window ventilating fans. International Oil Burner Co., 3800 Park Ave., St. Louis, Mo.

LIGHTING, ELECTRICAL EQUIPMENT
(Continued from page 70)

Solarite Panel Luminaire, 12,000 Series: shallow fixture body formed from sheet steel, boxed white enamel. Light transmission approximately 65% installed individually or in continuous rows, flush mounted or suspended. Also exit fixtures. Solar Light Mfg. Co., 1357 So. Jefferion St., Chicago 7, III.

Spill-Lite: lighting fixture for classroom use. Tempers glass bowl, patented spillway which expels dirt, bugs, debris. Appleton Art Glass Works, Berganfield, N. J.

Torpedo Shade Lighting Units: heavy gauge aluminum, lamps adjustable to any angle. Recessed adjustable fixtures. Convexo-Lite: screw-in unit for insertion into rigid recessed fixture, for conversion to spot or flood lighting. Completely redesigned Heavy Shade line. No price change; immediate delivery. Swivelier Co., Inc., 30 Irving Pl., New York, N. Y.


louvered ceilings

Allover: new modular sectional sections of aluminum, 18" x 48", made up of 3" or 1½" cubes. Designed to conform to hinged-ratch mechanism, or telescoping rods. General Lighting Co., 52 Union Sq., New York, N. Y.


Ceiling Louver: Vitrine: complete mounting, accessories to cover ceiling; 4½" shielding angle. Improved fluorescent fixture channel designs better coupling arrangements for continuous row installation; flush-to-ceiling mounting. Fluorescent fixtures of new design and applications. Light price increase, improved availability. Leader Electric Co., 3500 N. Kedzie Ave., Chicago, Ill.

Allover Vitrine Egress Ceiling: for remodeling or modernizing, improved Plastic Luminous Cove: for use with fluorescent light; low brightness ratio. Available in Louver-All Lighting Corp., 1793 W. Berente Ave., Chicago 13, Ill.

Multiple Louvered Ceiling: requires no construction alteration when installed. Special stock sections, individually hinged to facilitate changes of lamps. Neo-Ray Products, Inc., 313 E. 22nd St., New York 10, N. Y.

"Sky-Glo"; louvered lighting system. Continuous improvements on all fixture items, including "Shield-Flame" Type II-G fluorescent units. Prices usually to increase in materials, labor, freight. Availability: eight weeks after receipt of order. Benjamin Electric Mfg. Co., Des Plaines, Ill.

Skyline Louvered Ceiling: complete assembly with tile rods, light strips, reflectors, support brackets, hinged louvers, aluminum in baked white, natural, gray, black, etc. Garden City Plating & Mfg. Co., 1750 N. Ashland Ave., Chicago 22, Ill.

"THEATRE GUILD ON THE AIR"—Sponsored by U. S. Steel Subsidiaries
Sunday Evenings—ABC Network
In the newest of Schrafft's 46 stores, you'll see the latest achievements in modern design. Naturally you'll see Agitair Type R Diffusers providing noiseless, draftless air distribution for complete customer comfort.

Look around—you'll find Agitair Type R's in the smartest places... because no other diffuser offers so many advantages. Write for Complete Data.

**AIR DEVICES, INC.**
17 East 42nd Street • New York 17, N.Y.
Air Diffusers • Air Filters • Roof Exhausters

See Our Display at Booth 843, International Heating & Ventilating Exposition, Chicago, Jan. 24 to 28
Preserve the Natural Beauty of Outside Wood With Cabot's CREOSOTE STAINS

The rich, penetrating colors of Cabot's Creosote Stains bring out and preserve all the natural beauty of wood siding, shingles or clapboards. A wide variety of attractive colors, from clear, brilliant hues to weathering browns and grays, allows you to choose exactly the right stain for any house on any site.

Because Cabot's Stains contain 60% to 90% of pure creosote oil—the best wood preservative known—they repel termites and insure long years of protection from decay.

Only pure pigments are used in Cabot's Stains—colors remain fresh and true even after long exposure to the weather.

Cabot's Creosote Stains are easy to apply—will not peel or blister, even on green wood.

Write Today for free booklet "Stained Houses" and color cards.

WRITE TODAY for free booklet "Stained Houses" and color cards.

MATERIALS FOR '49

LIGHTING, ELECTRICAL EQUIPMENT

(Continued from page 104)

portable lamps

Gooseneck Pin-Up Lamps: unusual swivel arrangement and extra-long gooseneck enable user to turn lamp into any required position. Wall socket unnecessary; aluminum, gold Alumilite finish; gooseneck conduit brass-plated. Edgewood Furniture Co., Inc., 508 E. 27th St., New York 16, N.Y.


Synapsun: glass fiber and synthetic resins; may be sewn, bored, glued, riveted; applications such as lamp shades and boxes, wall paneling, indirect lighting, bar tops, place mats, etc. Poly-Plastex United, Inc., 92-35 Horace Harding Blvd., Elmhurst, N.Y.

Uni-Versen Switch Lamps: floor, portable, and pin-up lamps with flexible elbow shaft adjustable to any position. Kurt Versen Co., Englewood, N.J.

signs

Luminous Safety Signs: phosphorescent signs and markers to point to exits, fire escapes and equipment, first aid stations serve as ordinaries signs in day light. New Jersey Zinc Co., 160 Front St., New York, N.Y.

wire, wiring devices

Bulb: tin-plated copper alloy connector for all possible combinations of service entrance wire—copper to copper, copper to aluminum, aluminum to aluminum, aluminum to copper. Burndy Electrical Equipment, Inc., 107 Bruckner Blvd., New York 34, N.Y.

Cable Connector: non-metallic, sheathed, for electrical outlet boxes: high grade spring steel, plated against corrosion. Allied Electrical Mfg. Corp., 1 N. LaSalle St., Chicago, Ill.

Con-Tac-Toe Mercury Switch: electrodes immersed in liquid mercury, giving perfect contact; no tiny moving parts; unaffected by atmosphere; average size occupies less than 3 cu in. space. Minneapolis-Honeywell Regulator Co., 2750 Fourth Ave. S., Minneapolis 8, Minn.


Fixture Stud: new, heavy duty, for S-type bar hangers, permitting easy attachment of outlet boxes. Two sizes, for spacings between studs or joists up to 10" and 24". General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.


Formica YN-25: electrical insulation. No price increase; available. Formica Co., 4600 Spring Grove Ave., Cincinnati, Ohio.


Laytex RWV: insulated electrical wire for use underground and in wet locations; particularly for damp basement, etc. U. S. Rubber Co., Rockefeller Center, New York, N.Y.


When gallonage is limited...and solids are not specified

the SHONE Pneumatic SEWAGE EJECTOR

For handling crude sewage and sludge—30 gpm up to 1000 gpm—in municipal systems, industrial plants, institutions and city buildings, the famous Shone Pneumatic Ejector is trusted the world over. Wherever uninterrupted operation is essential and particularly where gallonage is limited but solids are not, the Shone is an efficient, safe, dependable answer.

no screens no sewer gas no shredders no wet well no impellers no danger no complicated piping

Sewage can't get in compressor

Ejector can be operated under water, and from distant compressor—any number of ejectors from one compressor. Special designs for unusual requirements.

For additional information, refer to Sweet's Files—and for complete engineering data write for Bulletins 4004 and 4303. Please use your regular business letterhead.

Yeomans Brothers Company

1445 North Dayton St., Chicago 22, Illinois

(Continued on page 108)
A new, simplified Utility Unit has been added to the Ingersoll line. It includes all basic plumbing plus a complete kitchen and bath. Unlike the standard Unit, the heating plant is not an integral part of the new model. The new Ingersoll "88" or other furnaces may be purchased separately if desired.

This unit is built around a compact, 10-inch-wide panel core. To meet your codes there is a choice of four vent and stack assemblies. Further flexibility is provided in a choice of lead, cast iron and steel materials in vents, stacks, wastes and undergrounds.

Assembled by skilled A. F. of L. Building Trade Mechanics, the new Panel Unit combines the economies of pre-engineered assembly with the flexibility of buying small-home utilities in individual components. It is equally adaptable to homes with or without basements, to multi-storied apartments and to tourist courts.

Enthusiastic acceptance everywhere has greeted the recently introduced Ingersoll "88" Furnace. Gas-fired, it has an output of 50,000 B.T.U.s, yet occupies less than 3 square feet of floor space. It has been approved by A.G.A. for installation within walls—an interliner jacket keeps the exterior cool. It is equally efficient either as a space heater or for duct-type heat distribution.

Reports from the more than 100 wholesalers added by Ingersoll in recent months, indicate excellent sales activity for the Ingersoll Unit. "The Unit fills a real need," is the most frequent explanation.
Will owners of your new houses find the kitchen their only warm room?

There are no Ifs, Ands or Buts when you specify Automatic Anthracite Heating

Owners of your new houses can have plenty of worry-free heat because there's plenty of hard coal and there is anthracite equipment to fit any heating requirement.

A whole winter's supply of anthracite can be stored easily in advance. Everyone wants this kind of security and convenience. They have just that when you specify automatic anthracite equipment.

Look over the two types of domestic anthracite equipment shown here. They burn the cheaper sizes of economical hard coal... completely automatic from bin feed to ash removal.

Write to us for more detailed information on all types of anthracite heating equipment—domestic and commercial.

ANTHRACITE INSTITUTE
101 Park Avenue • New York 17, New York
"Eminently successful daylighting," declares Architectural Forum in a recent article. "Offices in this building do not rely on artificial daylighting except on exceptionally dull days, but are almost always entirely daylit."

It goes on to say, "as an example of up-to-the-minute application of known daylighting principles, this building would be difficult to surpass."

Insulux Glass Block (No. 351), with its light-directional properties, plays an important part in this superb daylighting. For information on Insulux, consult GLASS section of Sweet's Architectural Catalog, or write Dept. F-51, American Structural Products Company, P.O. Box 1035, Toledo 1, Ohio.
Cincinnati's new Terrace Plaza Hotel selects American-Standard Plumbing Fixtures

To the long, growing list of the nation's outstanding buildings having American-Standard Plumbing Fixtures, add Cincinnati's newest hotel, the Terrace Plaza.

Here the choice of American-Standard products offered a double advantage.

First, because of the many different styles, sizes and colors offered, the architects had the widest latitude in designing each of the distinctive bathrooms for the 324 luxurious rooms and suites in this ultra modern hotel.

And, secondly, by making it American-Standard "all the way," the owners were assured of uniform quality throughout the entire installation... quality that would be reflected not only in the smart styling of the fixtures, but also in their long, trouble-free service.

For details about the complete line of plumbing fixtures, as well as information about American-Standard Heating Equipment, consult your Heating and Plumbing Contractor.

American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pennsylvania.

It's no problem to keep this bathroom clean. The roomy Master Pembroke Bath has a smooth, heavy coating of acid-resisting enamel on durable cast iron. And the quiet Afton Water Closet is made of genuine vitreous china. Both fixtures harmonize with the hotel's distinctive atmosphere.

American-Standard • American Blower • Church Seats • Detroit Lubricator • Kewanee Boiler • Ross Heater • Tonawanda Iron

114 Progressive Architecture
"No sign of any staining"

Reports manager of
Everglades Hotel, Miami

Miami's famous Everglades Hotel chose Lumite because it will

- NEVER RUST
- NEVER NEED PAINTING
- NEVER STAIN
- LAST A LIFETIME

Wherever climatic conditions destroy other types of screening—LUMITE is the only answer. It is unaffected by the usual enemies of screening such as salt spray, moisture, or acid smoke.

It has high dimensional stability...when properly framed it will never sag or bulge. It actually has greater impact strength than any old-style screening.

LUMITE costs only 11½ cents to 12 cents per square foot—much less than any other quality screening. Consult SWEET’S FILE for further information or write Dept. PA1, LUMITE DIVISION, Chicopee Manufacturing Corporation, 47 Worth Street, New York 13, N. Y.

Sold by leading hardware, lumber and building supply dealers and screen manufacturers.

SPECIFICATIONS

EFFECTS OF ACIDS, ALKALIS AND SOLVENTS—Essentially none.
BURNING RATE—None. (Lumite is Non-Inflammable.)
SOFTENING POINT—240°—280° F.
WATER ABSORPTION—Immersion 24 hours, less than 0.1%.
TENSILE STRENGTH, ULTIMATE (of filament)—Up to 50,000 lbs. per sq. in.
IMPACT STRENGTH—Greater than metal mesh.
Steel pipe is first choice

—for giant housing developments

The colossal Parkchester development in New York is one of the great experiments in modern housing. As it commands national attention for its daring conception and modern construction, likewise the materials, products, and equipment which compose it assume national interest.

Adequate and strictly modern plumbing and heating facilities play a vital role at Parkchester. Steel pipe, of course, is the predominant medium for the transmission and distribution of these services. So it is in all forms of modern housing, right down to the cozy cottage in the suburbs!

Architects, builders, plumbers, and heating contractors know that steel pipe is durable, adaptable, serviceable and economical. That's why, for conventional steam or hot water heating, or for the new and growing radiant panel heating...as well as plumbing supply lines, too...the overwhelming percentage of all pipe used is steel pipe.

That's proof. Steel pipe is first choice!

The interesting story of "Pipe in American Life" sent upon request.

Committee on Steel Pipe Research

OF AMERICAN IRON AND STEEL INSTITUTE
350 Fifth Ave., New York, N. Y.
There's bright living ahead for New Yorkers who live in Greendale Manor. In this new garden-type apartment village, large, sun-inviting Lupton Metal Windows provide an abundance of daylight to each dwelling unit. The narrow, graceful frames and smartly-designed operating hardware of Lupton Metal Windows blend perfectly with modern design. Air flow is easily controlled to supply exactly the right amount of ventilation in every room. Economy, a vital feature of large scale building is effected by the long life of Lupton Metal Windows. Lupton Residence Casements can be supplied in a wide range of stock sizes and types. Bronze wire screens are available for all windows. There is a Lupton Metal Window for every type of building. Write for our catalog or see it in Sweet's.

MICHAEL FLYNN MANUFACTURING CO.
700 East Godfrey Avenue, Philadelphia 24, Penna.
Member of the Metal Window Institute
There's power! There's a major reason for Norton's smooth, unhurried, but unhesitating action in spite of difficult latch or gusty draft. NORTON'S premium steel Rack and Pinion is cut to .005 tolerance, and finished smooth as silk to provide that characteristic Norton velvet action. A Norton adjusts instantly for speed, on light or heavy doors. It's quick, it's quiet, and easy to install for long silent years of service.

Bennett Fresh-Aire Fireplace Units are specified:

1. Thoroughly ventilates and "refreshes" the air.
2. Complete freedom to design the mantel... normal brick firebox sidewalls... no floor grilles.
3. A complete form for smoke-free internal proportions of throat, damper, smoke chamber and shelf—assurance that the fireplace will be built as you designed it.
4. Small first cost is quickly offset by savings in construction and fuel.

Bennett Warm-Aire Units—for perfect fireplaces in camps, southern homes, playrooms, etc. Draws cool air from the floor, heats and recirculates it evenly throughout the room, and to adjacent rooms or upstairs.

Write us at 149 Cedar St. for Catalog—or see Sweet's.
ELECTRUNITE E.M.T.

MODERN STEEL PROTECTION
FOR MODERN WIRING INSTALLATIONS...

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A. S. Bennett & Associates, a New York research organization, has just completed a nationwide study to learn how building products get into buildings. In this and subsequent issues, we will discuss the study, giving details and comments about the 24 classes of products which were investigated. By observing the ways in which representative architectural firms specify products, you will have a better idea of how nearly your own operations are geared to those of your contemporaries.

FACTORS IN SPECIFYING AIR DISTRIBUTION OUTLETS

With air conditioning installations the rule rather than the exception in much new construction, it's important that architectural firms approach realistically the problems involved when specifying such equipment. The Bennett survey indicated how other firms are handling the specification of one integral part of such equipment—air distribution outlets. Perhaps from an analysis of the Bennett findings you can draw comparisons between your specifying procedure and the procedure as practiced by the firms who are your contemporaries.

The Bennett field interviewers first investigated the type of outlet being specified—found diffusing outlets outnumbered directional grills 5 to 4, while directional grills, in turn, were specified almost twice as often as regular grills and combination (inlet-outlet) grills combined. Seems to show a definite leaning toward the newest type of outlets—those that not only allow for air movement, but move it in a well-defined flow pattern.

Naturally the interviewers, when talking to architectural firms all over the country about their specifying procedure, wanted to get the reasons behind any important decisions. In other words—why was a particular type of air distribution outlet selected? And the interviewers found that architectural firms placed "appearance" at the top of their list of reasons for selecting a particular type of outlet. Running neck-and-neck with appearance was recommendation by a consulting engineer. Conclusions: It becomes obvious that the architectural firm who does the best job works closely with consulting engineers, so that they can select an outlet embodying functional and eye-appealing qualities. The results indicated that the architectural firm is not only interested in what the system will do, but is also interested in how the system (and its component parts) fit into the overall design. This means that consulting engineers are called in for highly technical questions, but that for most decisions the architectural firm feels its own staff competent to handle any problems that may arise. Only by knowing a great deal about air conditioning equipment and the problems that arise, can an architectural firm design effectively around such equipment.

There were other reasons, of course, for the selection of a particular type of outlet. Volume of air delivered, the distribution pattern, the locations available for installation, and many other factors, all entered into the picture. Many decisions were based entirely on design problems. When it came to brand decisions, the same general results were

(Continued on next page)
uncovered. Thus, when the respondents were asked to state why they had picked a particular brand, they gave reasons that were hinged very closely to their decisions as to type of outlet selected. You are probably interested in the time factors involved. That is, during what design stages the decisions were made. The answers (for both type of outlet, and specific brand) all fell into one groove—early. Every decision was made before the completion of final drawings and specifications; 60% before the completion of preliminary drawings.

Throughout all discussions and decisions on the selection and specification of air distribution outlets, the architectural offices worked closely with consulting engineers. Because air conditioning is a technical, equipment problem, it is not the exclusive bailiwick of architectural specifiers. In order to design effectively around (and with) such systems, however, it is important that architectural men have an understanding of the rudiments of such equipment. Only by a full understanding of the equipment involved, the sizes needed, the load expected, etc., can the architectural firm design effectively and specify realistically. It calls for thorough knowledge of the science of moving air masses.
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[See our Catalog in Sweets]

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THERE'S MORE TO THE SOUTH THAN FRIED CHICKEN AND BLACK-EYED PEAS. Although I had plenty of them during a recent trip. Deep in Thurmond territory, I attended meetings of progressive-minded, alert, and eager architects, some of whom are producing work as good as any in the country. The most valiant attempt I've seen to produce a really inexpensive house (under $5,000) with the help and even the guidance of the FHA, taking advantage of modular planning and rational use of materials, was in Columbia, South Carolina. The best small hospital I've seen recently was in Alabama. The best current design in university structures I've seen was at Georgia Tech. The most progressive program for an architectural school I've witnessed this year was at North Carolina State. That's what I like about the South.

My wife went with me on this trip, and she wanted to do the column this month, so that she could thank all the swell people we saw. It was a vacation, but I can't stay away from architecture, and I'm more than ever convinced that architects and their wives are just about the most agreeable people there are.

IN RICHMOND, VIRGINIA, I was delighted to find that Leslie Cheek, himself lately an editor, is functioning happily as director of the Virginia Museum of Fine Arts and cooperating handsomely with the local architectural group guided by Marc Wright, Jr.

IN RALEIGH, NORTH CAROLINA, I was impressed, as I've said, with the work already started in the new architectural school under Dean Henry Kamphefner, with a staff which includes the Matthew Nowickis, recent of Warsaw; the Jim Fitzgibbons, recently of Oklahoma; and George Matsumoto, recently of Kansas City. I was also impressed with the work being done by Bill Deitrick's office—so much so that I went out at midnight to see it. Unfortunately I didn't have time to see the houses Tom Cooper and Albert Haskins are doing for themselves, which look wonderful in renderings.

BILL LYLES AND REID HEARN GAVE ME A QUICK TOUR OF COLUMBIA, where an astonishing amount of FHA work is being done—both small individual houses of unusually high quality and rental housing under Title VI. An 18-story apartment planned by Stork & Lyles looks very promising.

I made a quick trip to Clemson, where the only architectural school in South Carolina is functioning under the able guidance of John Gates. The day I was there Clemson was beating Wake Forest at football and the school was nearly deserted, but judging from the work on display there must be a high quality of instruction.

ATHENS, GEORGIA, IS A BEAUTIFUL TOWN with many handsome ante-bellum houses, and an excellent architect—Wilmer Heery. I particularly liked the way he's added an office unit to a mellow, old, brick mill building. It seems to belong, and yet there's no copying.

ATLANTA IS ONE OF THE BUSIEST CITIES I'VE VISITED RECENTLY. Every architect in town seems to be active, and the work is, in general, excellent. We spent a most pleasant evening in Dick Acke's house, slightly outgrown since we published it because of the arrival of a baby, but still comfortable and handsome. Among other excellent work of his, I think a high school football stadium Acke has designed is one of the most beautifully simple structural concepts, consistently carried out, that I've seen. I also admired the new Textile Building at Georgia Tech, as well as other college buildings planned to be part of a program of expansion which is being developed by Bush-Drown and Heffernan. I had a quick review of the work of Stevens & Wilkinson, starting from their own attractive office building and ending with the only two-car-barns I know of that are thoughtfully planned and consistently designed. John Cherry also showed me some of the work he is doing in a practice which ranges through doctors' clinics and industrial plants to several mighty good houses, including the one he built for himself and his family with his own hands. (Design good; craftsmanship spotty.)

BIRMINGHAM HAS A VERY LOVELY RESIDENTIAL SECTION, and the night view of the lower city from the adjoining hill is a rare sight, with an occasional burst of flame from a steel mill, and with cast-iron Vulems saved from the Columbus Exposition, looming it over the metropolis. Lawrence Whitten, of Charles McCauley's office, and Mrs. Whitten, were kind hosts to able guides, abetted by William Warren, a man with a greater fund of good stories than anyone else in the profession.

I LIKED HIS TWIST ON AN OLD ONE . . . in this case about an architect who had attended a meeting and become confused by the speakers and befuddled by highballs. He left to go home, and on the way tried to remember what the difference was between functionalism and rationalism. It worried him so that he stopped on the way at the preacher's house, because the preacher knew all the answers, and he routed that worthy out of bed and demanded to know the difference between functionalism and rationalism.

"Go home and go to bed, John," the preacher said. "Come back tomorrow and I'll explain the difference to you. Won't that do?"

"No, it won't," John replied. "I must know tonight, because tomorrow I'll be sober, and I won't give a damn."

IN CHATTANOOGA I HAD A NICE VISIT with George Palm, Jr., Mario Bianculli's new partner in Selheim, T. Franklin and Clarence Jones were good enough to give me a quick view of what's going on architecturally in the area.

In Knoxville, Rudy Mock showed me projected designs for several TVA powerhouses and minor structures, one interesting feature of which is an aluminum sandwich wall material being developed in conjunction with H. H. Robertson Co.

HARRY TOUR, TVA ARCHITECT, TOOK US ON A TOUR OF NORRIS DAM before we left the Knoxville area—through the various tunnels and passages and up the interior elevators, in addition to the more usual trip through the powerhouse and across the top of the dam itself. On the way we had also seen Chickamauga and Watts Bar, so we had a fair view of the external aspects of the TVA operation. Enough has been written about it, so I will only remark again that it is powerful, honest, and wonderfully free of pomposity. The scale is overwhelming, but never frightening and one feels the harnessing of natural power sources for a good, democratic end.