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Flat roof areas planned for Traffic Top surfacing require no extra reinforcement, since this product weighs no more than ordinary slag or gravel surfacing. Deadens sound transmission to rooms below; protects built-up roofing from the heat of the sun. Passes fire-brand tests, and is permanently protected against termites and dry rot by the exclusive, patented Ferox Process. Mail the coupon.

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MAY 1939

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Fundamental changes in curricula bring equally fundamental changes in design... a review of recent work.

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The arithmetic of land development: The Forum explores the ways and means to economic subdividing for the seven out of ten subdividers who have not learned their lessons... FHA's original chief architect designs an FHA-insured rental housing project for Columbus, Ohio... "The Quintec House": one low cost dwelling per week from General Housing Corp.'s Seattle factory... The lowly concrete block gets its first taste of standardization.

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MONTH IN BUILDING

FORUM OF EVENTS
Totalitarian architecture... Productive Home Competition... Awards... Educational... Deaths... Personal.

BOOKS

LETTERS
PERMITS

<table>
<thead>
<tr>
<th>Monthly data</th>
<th>1939</th>
<th>Comparison with</th>
<th>1939</th>
<th>Comparison with</th>
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<tbody>
<tr>
<td>Residential</td>
<td>$86.7</td>
<td>$83.5</td>
<td>$83.3</td>
<td>+11.4%</td>
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<tr>
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<td>33.5</td>
<td>34.4</td>
<td>-6.5%</td>
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<td>24.4</td>
<td>24.4</td>
<td>+5.3%</td>
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<tr>
<td>TOTAL</td>
<td>148.5</td>
<td>141.4</td>
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</tr>
</tbody>
</table>

UP AND UP. While most other industries have been thinking up excuses for poor performance, Home Building thus far this year has kept its nose to the grindstone, ground out houses in record-breaking numbers. According to F. W. Dodge Corp.'s compilation of construction contracts awarded in 37 Eastern States, residential building for the initial 1939 quarter totaled roughly $826,000,000—83 per cent above the corresponding figure for last year and 23 per cent above that for 1937, the previous post-depression peak. Total building during the three months set an eight-year record of 8775,000,000—41 per cent above last year, 17 per cent over 1937.

Bolstering these totals was March residential building, valued at more than $126,000,000. Its 39 per cent gain over the preceding month was more than the normal seasonal expectation, and was made despite the adverse effects of generally stormy weather and a delayed spring. Total building jumped 36 per cent between February and March to $300,680,000.

Thus, for Home Building, 1939 has come in like a lion. Chances are, however, that it will not soon follow the lion-to-lamb rule of thumb. To wit: March's weekly volume of FHA mortgages accepted for appraisal, a barometer of future residential building activity, advanced steadily, at month's end totaled $1,158,158,158, an all-time record.

GOLD STEEL. Of prime interest to prefabricators was the announcement last month of a new kind of steel—strong, light, stainless and colored. Bold claim of its developer, Metallurgist and Industrial Designer Oscar B. Bach, is that in conjunction with mass production, the new steel will make 810,000 houses cost 82,500. Unlike other prefabricators' materials, principal ingredient of the proposed Bach house will be asbestos panels covered with a thin skin of his cheap, colored, corrosion-proof metal.

But Bachite, as the product is called, has additional significance for Building. Its low cost, its wide range of colors (red, green, blue, purple, bronze, black and even gold), and its corrosive resistance (almost that of twice-as-expensive high-grade chrome nickel stainless steel) may make it readily adaptable to almost any exterior as well as interior use where metal is advantageous.

FHAMBEDMENTS. As fickle as the map of Europe is the state of Congressional legislation which will eventually amend the National Housing Act. As if Senators and Representatives were not muddled enough in their own minds, they have been barraged by conflicting suggestions from realtors, building and loaners, bankers, AFL, FHIBB and, last but not least, FHA itself. Consequently, their attempts to keep everybody happy render yesterday's reporting out of date, make the subject of tomorrow's reporting unpredictable.

Fortnight ago, however, the House made up its mind as to how the Act should be changed, sent a bill to the Senate providing in the main:

- That FHA's mortgage insurance limit be upped from 83 billion to 84 billion. FHA wanted the maximum boosted to 86; FHIBB and its building and loan children stumped for no boost at all. Said FHIBB Chairman John H. Fahey: "One of the fears that I have is that increasing the authorization from $85 billion to $86 billion is, in effect, making this (FHA) a permanent organization . . . (and) experience with the insured mortgage has not gone far enough, as yet, to demonstrate whether it is a wise plan, as a permanent policy."
- That insurance of mortgages on existing structures be extended to July 1, 1941. FHA said, the realtors, and bankers argued in favor of this provision; FHIBB and building and loaners, against it. The former group claimed it was necessary to lubricate the trade-in or used-house market, while the latter said that it would permit bankers to continue their hold on building and loan mortgage portfolios.
- That section 210 of the NHA, covering insurance of 816,000-820,000 mortgages on projects of ten or more houses be eliminated. FHA was in favor of this move. Such mortgages may still be insured under more restrictive Section 207 of the Act which has no bottom mortgage limit but gives FHA a hand in the management of all projects.
- That Title I's life be extended to July 1, 1941. As usual, FHA was against extension, but was willing to string along with public demand provided certain changes were made in the Title (see below).
- That the principal amount of home modernization loans eligible for insurance under Title I be reduced from 810,000 to 82,500.
- That an annual premium of not more than 1 per cent be charged for mortgage insurance under Title I where currently no premium is required.
Easy to install

Masonite Presdwood Temptrtile is the modern material for kitchen and bathroom walls. Because it's an all-wood, grainless board, it can be applied with moisture-proof adhesive or nailed directly to studs. Properly installed, it will not warp, chip or crack. And it resists moisture.

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Masonite Presdwood Temptrtile provides lasting surfaces at low cost

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THE MONTH IN BUILDING

That FHA value the land on which large scale projects are built on the basis of present market value, thus prevent the writing up of land values by promoters. This was an answer to the cry of realtors who complained generally of the competitive effect that FHA projects have on the rental market. Specifically, they pointed their fingers at St. Louis' Manhasset project where raw land was purchased at $84,000 and put into the project at $171,000. FHA did not deny the write-up, countered that it was justified in view of the ultimate developments to be made on and near the site. (Apparently realtors failed to observe that by padding land values, project sponsors have to increase rents and thus offer less competition.) FHA claims that the anti-mark-up amendment will put the damper on large scale operations by removing an incentive for investment in such projects. Bigger FHA worry, however, is that the wide publicity and misunderstanding concerning Realty's attacks will clamp the brakes on the rental housing program.

When these provisions were passed in the House, the Senate subcommittee had not perfected its version of the FHA amendments. It was, however, working along the same lines as the House, had approved several provisions incorporated in the Representatives' bill. Major differences:

- Elimination of Section 210 was not considered.
- The sub-committee recommended that all labor on FHA-insured projects with a mortgage of more than $100,000 be paid in accordance with prevailing wage scales. This provision will not bother FHA: most large rental projects are already being built by organized labor.
- It was suggested that insurance of existing structures be limited to 33 per cent of the total volume of FHA mortgage insurance. Aimed at appeasement of building and loaners, this provision will also make but little difference to FHA—the ratio for 1938 was 70-30 in favor of new construction, and the volume of insurance on existing structures has been decreasing percentage-wise every year since FHA's establishment.

DIESELIZED. Most newsworthy building to scrape the sky in many a month is the Alfred L. duPont Building in Miami. Not only is it the largest U. S. office building completed thus far in 1938, but it is the largest ever built which depends on Diesel-generated electricity for all its light and power requirements. Not a kw. is supplied the building from outside sources.

Housed in a soundproofed basement room of the completely air conditioned 17-story structure, the power plant is comprised of three 16-cylinder, spring-mounted Diesels, each developing 1,050 horsepower at 600 r.p.m. Unlike the average air-started Diesel, the duPont trio is started by electricity from eight huge storage batteries which will also supply emergency lighting throughout the building should the power plant fail. Two 3,000 gallon fuel tanks feed the plant, and a brick stack the entire height of the building carries off the engine's exhaust.

Credit for the building's design goes to Architects Marsh and Saxelby of Jacksonville, Fla., and Messenua & duPont of Wilmington, Del.; its for pioneering branch of the Government under the name "National Resources Board" and would continue their broad research and advisory powers. Because the Committee has helped local governments iron out planning problems and at the same time has given them technical assistance, otherwise unavailable the Hayden Amendment has the backing not only of theoretical planners but of as practical an organization as the National Association of Real Estate Boards.

Currently, the Hayden rider and its host, the Public Works Bill, are under consideration by the special Committee to Investigate Unemployment and Relief. Fate of the former is, of course, in the hands of the latter; and the latter on its way through the legislative wringer, is faced with tough going. Reason: the Public Works Bill would do away with WPA and create instead a Department of Public Works which would carry on a long range program implemented by State grants based on an equated relation between population and the number of unemployed.

EARNINGS. Last month 32 of Building's manufacturers reported their earnings for 1938:

- Year ending Dec. 31 1938 1937
- Acme Steel ......... 88,068,168 81,888,081
- Air Reduction ....... 5,769,357 7,356,955
- Alpha Portland Cement ......... 233,167 234,753
- Allis-Chalmers Mfg. ..... 5,335,946 7,841,167
- Aluminum Co. of America ......... 15,508,167 27,682,749
- American Milling ......... 1,007,789* 8,321,335
- Atlas Plywood ......... 58,284 181,644
- Carrier Corp. ......... 1,133,081* 1,140,704
- Cooper Bessemer ......... 208,942 370,696
- Crucible Steel ......... 2,237,082* 4,017,931
- Ferro-Enamel ......... 111,537 625,220
- General Electric ......... 27,729,060 65,346,702
- Harmschleger ......... 355,777* 257,294
- Hubert Mfg. ......... 812,549 918,169
- Holland Furnace ......... 1,233,288 1,421,600
- Kennecott Copper ......... 2,688,900 49,822,394
- Kimberly Clark ......... 1,994,641 4,269,417
- Masonite Corp. the special ......... 444,943 451,581
- Mueller Brass ......... 383,773 689,373
- Otis Elevator ......... 1,914,730 3,392,253
- Pennsylvania Railroad ......... 86,216 113,334
- Pittsburgh Plate Glass ......... 4,688,907 18,857,969
- Revere Copper & Brass ......... 2,143,677* 414,739
- Reynolds Metals ......... 571,115 1,151,890
- Ruberoid ......... 515,472 730,509
- Sharon Steel ......... 35,284* 1,343,510
- Starrett ......... 460,714* 235,680
- Steel & Webster ......... 761,306 861,590
- U. S. Plywood* ......... 82,269 5,799
- U. S. Steel ......... 7,717,435* 9,944,338
- Wheeling Steel ......... 465,138 1,238,488
- Yale & Towne ......... 45,054 1,230,694

* net loss
1-6 mos. to Dec. 31 7-12 mos. to Feb. 28 6-12 mos. to Mar. 31 4-5 mos. to Jan. 31

Beasts its own Kilowatts

power plant, to General Motors Corp. and Miller Electric Co., consulting engineers. Credit is also due Miami's duPont Building for lining up with the pioneers of a new market for Diesel engines (Architectural Forum, Mar. 1937, p. 107). In time it may offer some interesting operating cost data for building owners and managers.

RESOURCES. Highly important prelude to actual coordination and preservation of U. S. natural resources is detailed study of what those resources are, how they are being wasted. Nearly three years ago, the President, under authority of the Emergency Relief Appropriations Act, created the National Resources Committee for just such a study. It has since turned out many an important analysis of resource problems from population to drainage, has emphasized the need for coordinating local, State and regional plans. This June, however, the Committee's authorized time will be up, and without further enabling legislation its studies will cease.

An attempt at such legislation is the bill introduced recently by Senator Hayden as an amendment to the Public Works Bill. It proposes to make the National Resources Committee a permanent FORUM
FORMICA demonstrates its versatility in the Annex to the Library of Congress recently designed by Pierson & Wilson for the Architect of the Capitol.

Chosen for its excellent appearance, its modernity, and its unusual durability and stability of color, it was employed for such diverse purposes as table and desk tops, book shelves, wainscot in corridors, telephone booths, doors, baseboard, chair rails, and fronts of card card index cases.

Much of the material is in a subdued gray-green with a morocco surface—some of it has decorative inlays; some of it is realwood. Literature giving construction details is available. Ask for it.

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Only pioneer heat transfer specialists with Modine's vast experience could have developed so many exclusive design advancements as are embodied in the Modine Triple Line of Convectors. They not only anticipate today's varying demands but offer the architect the widest latitude in selecting the right type of convector for his exact need.

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2 MODINE Standard Convectors—New Developments, New Economies, and a New Low Cost—Modine simplification and standardization . . . plus such exclusive design features as the new manually removable enclosure front and the new projection front . . . effect lower initial and installation costs. Stores, apartments, offices, hotels, and moderate cost homes can now enjoy all the superiorities of steam and hot water heating with Modine Copper Convectors—at a new low cost.

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Since the dictator, by definition, is one who governs without the consent of the governed, he has from time immemorial been constrained to placate as well as suppress his populace, throwing sops in the form of bread and circuses, sometimes as elaborate public works. A further device, as popular with the Pharaohs as with twentieth century despots, is the erection of grandiose monuments designed to convince dubious citizens of the eternal stability of the existing regime.

In this respect neither Hitler nor Mussolini has failed to follow the historic pattern. Illustrated on these two pages are some of the architectural compensations currently offered the German and Italian people.
By the early 1930's the worldwide architectural controversy between modern and traditional was solved for Italy by Mussolini, who, as a former hack journalist felt competent to make a decision. With official blessings on modern, young Italian architects gladly went to work, old Italian architects hastily burned their books behind them. Much of the work was excellent; it had a local flavor, used native marbles tastefully, was imaginative and consistent. Unfortunately modern has proved too dynamic for the Fascist atmosphere, and is gradually being suppressed in favor of the safety of a sterile classicism. Examples: the University in Rome (opposite page), the appalling pavilion at the New York World’s Fair.

For Hitler there was no such choice of style. Riding into power after a Social-Democratic government whose housing work had set new world standards for modern architecture, he was forced to proclaim anything contemporary as “Bolshevism” turning to the ponderous, and more appropriate, classicism of the earlier Prussian autocracy. It fitted well with his penchant for lengthy facades such as the one on the school at Potsdam.

In six short years the Führer and his draftsmen have turned out prodigious quantities of utterly stultifying architecture. And if the designs for the 1942 World’s Fair in Rome are any indication, the Fascist International Style will be Hitler’s rather than Mussolini’s—an exercise in exhumation.

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The Wallflower of Main Street

BECOMES THE BELLE OF THE AVENUE

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Winners in the Productive Home Competition

Rurban is the new name for it. For five regions of the U.S., designs for moderately low cost houses were submitted by 598 competitors, setting a pattern for a kind of life that is neither radically new nor yet a reversion to pioneering. Sponsors believing in the ideas of Ralph Borsodi are trying to draw families of moderate means away from city apartments into garden homes within commuting range. Family’s cash income from city employment could be made to go farther by raising part of what it consumes.

In the first stage of a two-stage competition, 55 designs were selected for further development. From the final submission five designs won each $1,000, with 50 runners-up receiving $100 each.

Designs were based on the assumption that the house would be built on an acre and a half of ground, and that the commuting breadwinner would earn $3,100 annually. Five rooms, a garage, workshop and root cellar were to be provided, and some of the work of construction or enlargement would be done by the family itself.

Five qualities sought by the jury: adaptability to productive activities; layout of land and outbuildings; economy; suitability to region; apparent ability of competitor to prepare proper working drawings and specifications. One requirement most generally neglected was economy. The Jury, in its report, emphasized the fact that it does not wish to present the idea that any of these plans will be an ideal productive home, and only hopes that they might serve as a springboard for completely valid solutions. Under the illustrations are comments by members of the Jury.

First-stage Jury: Dr. Baker Brownell, Professional Adviser Walter Sanders, Frederick L. Ackerman, Mrs. Margaret J. Suydam, Burnham Hoyt, Monsignor Luigi G. Ligatti. By vote of contestants, Richard J. Neutra and Antonin Raymond were added for the final judging.

WINNER FOR NORTHEAST, ALEXIS DUKELSKI, NEW YORK

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**Analysis Unchanged:** The main objective in the production of ARMCO Ingot Iron always has been a very highly refined iron of consistent uniformity. This original analysis has been unchanged for thirty-three years, because time and usage have completely confirmed that it will successfully withstand general corrosive conditions.

- Should you wish additional information about ARMCO Ingot Iron, feel free to write us. The American Rolling Mill Company, 1000 Curtis Street, Middletown, Ohio.
WINNER FOR SOUTH, RUDOLPH A. MATERN, WOODHAVEN, N. Y.

"There is a noticeable lack among the contestants of a proper conception of storage space requirements."

WINNER FOR MIDDLE WEST, HARRY WEESE
CRANBROOK ACADEMY, BLOOMFIELD HILLS, MICH.

"The possibilities for the future development of many of these houses were not so well emphasized as they might have been."

(Continued on page 18)
All floors, ceilings, sidewalls and interior partitions of this upstate New York school were of fireproof construction. Even the roof framing was of steel!

But, unfortunately, the roof-deck was wood.

You can see the tragic destruction caused when fire, spreading through a ventilating shaft, destroyed the deck, caused the framing to collapse, and exposed the entire building to the weather, which resulted in buckling floors, ruined decorations, and damage throughout.

No building is entirely safe unless the roof-deck is as fireproof as the rest of the materials used.

When you specify materials for a firesafe building, be sure to include GYPSSTEEL PLANK* for both floors and roofs. PLANK handles like wood—cut, sawed, nailed or bored—and can be laid with the same ease and speed at the same labor cost. Yet it offers the highest type of firesafety—2 inches of extra dense gypsum.

PLANK bridges the gap between the low cost of wood and the high cost of masonry construction. It offers you a new way to give your clients extra protection without straining their budgets. And, in addition, savings on insurance premiums, where firesafe GYPSSTEEL PLANK is used in place of wood decks, will pay attractive dividends on the investment. Full information about PLANK is contained in our special 28-page Plank Bulletin. Write us today—a note will bring you a copy.

GYPSSTEEL PLANK is a complete structural unit shaped like lumber. Made of extra dense, nailable gypsum. All four sides are bound with galvanized steel tongues and grooves which lock to form a strong, continuous T-BEAM. Center is reinforced with steel wire mesh. Vermin-proof, termite-proof. Will not shrink or warp.

*The term PLANK as applied to cementitious building products is a trade-mark of the American Cyanamid & Chemical Corporation.

17
WINNERS FOR SOUTHWEST, LOIS W. WORLEY AND WILLIAM W. CAUDILL, MASS. INST. TECH., CAMBRIDGE, MASS.

"Not many of the contestants thought out the plot arrangement for a complete food subsistence production for a whole year."

WINNER FOR NORTHWEST, J. R. SPROULE, SEATTLE, WASH.

"The bathroom and toilet should be easily accessible from outdoor work and play areas without soiling floors and stairs of inner dwelling."
Says the $5,000 house to his $15,000 neighbor, "You are bigger than I am, you cost three times as much; but since I'm also wrapped in 'Brownskin' and 'Copperskin' from foundation to roof, I'm just as everlastingly protected as you are."

"You mean that you won't ever have to worry about damp-proofing, flashing, sheathing or lining?" "That's right," says the little house, "Or Vapor-Seal either—I'm all protected and ready for fill-in insulation any time my owner desires. I have drip-pans of 'Copperskin' under every window." "Okay and shake," says the $15,000 house. "We are both proud of ourselves because we're planned to fit modern needs. Welcome to our neighborhood."

The danger of documentary photography is that while the camera may not lie, the photographer can. In any sequence of pictures it is his eye, not the lens, which determines the final impression. In the case of a large city this is particularly true. New York could be shown as a festering slum or the world's smartest business center. Emphasis on its speedways, bridges, parks and housing developments would produce an existing "city of tomorrow." To the more romantically minded it has appeared as a kind of mechanical Grand Canyon, wreathed in clouds and perpetual sunsets. In the hands of one with a political or sociological bee in his bonnet, a camera pointed at New York could be made to prove anything.

To the credit of Miss Abbott, her photographic document does no one of these things. While the hundred-odd illustrations represent only a fragment of her full-length portrait of the city, it is a pretty comprehensive fragment. Taken as a whole it ranges from the antique shop fantasy shown above to the latest in skyscrapers. The main impression created, and probably a very accurate one, is that New York is still overwhelmingly a relic of the nineteenth century despite the expensive congestion of the Wall Street and Grand Central zones. Behind the admirable detachment of the photographer is a sound technique: the pictures are not only good documents, but good photographs, entirely free from the usual tricks. An office building is shown as an office building, not as a modern tower of Babel in the Hugh Ferriss manner. A "French Renaissance" car barn is photographed and the result shows all of its naive ugliness. Barren slum courtyards are not forced into picturesque "streets of Naples" arrangements. Lacking in fake drama, the photographs in the end are more impressive for their plain honesty. For the architect of today they constitute an illuminating record of the astonishing mess his predecessors helped to create.

The hundreds of pictures making up the complete record are to be deposited in the Museum of the City of New York, and

Housing abroad . . . . . . Steel design . . . . . . Scottish architecture . . . . . . Decorative art in Italy.

prints have already begun circulating to the various public schools, universities and museums. A collection of unquestionable historical value, it provides fresh, impressive evidence of the unique contributions being made by the Federal Art Project.

COMMON SENSE IN HOME DECORATION, by Carl Maas-Greenberg, New York, 159 pp. 9½ x 6 in. illustrated. $2.75.

Excellent practical guide for the layman. It gives information on furniture arrangement, its proper selection, the mixing of colors, fabrics, and wall treatments. There is much useful data on the historical styles, characteristics of woods and colors favored in various periods. Furniture dimensions are given which should be very helpful in planning interior arrangements. As comprehensive a book on general problems of home decoration as has been published to date.

EUROPE RE-HOUSED, by Elizabeth Denby, W. W. Norton & Co., Inc. 284 pp., about 100 Illustrations, 6 x 9, $3.50.

"Europe Re-Housed" covers Sweden, Holland, Germany, Austria, Italy and France. It was written to show how the problems of housing had been tackled in these countries, and which, if any, of the various methods employed were applicable in England.

The basic problem everywhere, says the author, is twofold: money to build with; land to build on. Each country faced a specific situation and tried various solutions, but ultimately it was the money and land conditions which were determining factors in the results. Vienna, for instance, considered the most successful of all by Miss Denby, had municipally owned land and building materials plants, and avoided interest charges by building out of income. Sweden made use of municipal land, shops and funds but has relied more and more heavily on the owner and renter cooperatives. England subsidized "a vast quantity of small dwellings (privately built) of which few can compare for quality with the output of any other European nation." In all cases some form of Government aid was used.

England's solution for the problem, widely publicized in the U. S. as a remedy for depression, meets with scant approval on the part of the author. Comparing Vienna, with 1,260,000 citizens, 14 square miles of built-up area and 93 square miles of woodlands, parks, etc., to Manchester, with 739,000 inhabitants, 39 square miles of buildings and 4 square miles of open space, she comments: "How absurd for questions of existing city density to be disregarded. How lazy to advocate decentralization and the creation of new satellite towns! In these so-called overcrowded towns, there is ample room for replanning and rebuilding within the existing city boundaries with ample space for every kind of activity."

Oriented primarily for an English audience, the book is perfectly applicable to the U. S., as the above quotation suggests. Stimulating and provocative, it represents a very reasonable approach to a complex problem, is particularly valuable for its insistence on national peculiarities, for its linking of housing and town planning and for its estimation of specific results in the light of local conditions.

(Continued on page 54)
COMPETITIONS
in incorporating the use of a versatile building material
INSULUX GLASS BLOCK
CONDUCTED BY THE ARCHITECTURAL FORUM FOR OWENS-ILLINOIS GLASS COMPANY

REGISTRATION to enter Competition No. 1 or No. 2 is all that is needed for continuous participation. It ensures your receiving the technical information needed, and title lettering. It does not obligate you to submit drawings.

Write Henry H. Saylor, A.I.A., Professional Adviser, 9 Rockefeller Plaza, New York, N. Y., indicating your entry as architect, architectural designer, or architectural draftsman.

SUBJECT: A GROUP OF THREE STORES
$2,500 in prizes
Closes August 21, 1939

THE PROBLEM
Our client is the owner of business property located in the heart of the women’s shopping district of a midwestern city, about 150,000 population. Three of his tenants have told him that they will not remain in their present quarters unless these are remodeled and brought up to date.

These three tenants occupy spaces that are parts of an existing four-story building, and all front on Main Street. None of the three is immediately adjacent to either of the others, so they may be regarded as independent problems in design. The three premises (See diagram) are:

1) A Restaurant, with frontage of 20’ facing west on Main Street, and depth of 80’, opening upon a right-of-way at the rear, parallel to Main Street. The establishment occupies the first floor and basement. Fountain and table service are to be provided on the first floor, and a small bar may be included. Food is prepared in the basement, delivered to the restaurant floor by dumb-waiters, and the soiled dishes returned below by the same means. Service can be effected through the rear right-of-way, or through the Main Street sidewalk, or both. In the basement also are washrooms for men and women. Plan of the basement is not required.

2) A Beauty Parlor, with a second-story location, 30’ frontage on Main Street, depth of 40’ to a blank wall; this space is air conditioned, though the detailed provision for this need not be taken into consideration for the purposes of this competition. Adjoining is a public stair hall permitting entrance to the Beauty Parlor at any point on the north side of the 40’ depth. A comfortable reception and waiting room is desired, with provision for display of cosmetics for sale. An open workroom should adjoin four cubicles, each of these with facilities for shampooing. A ladies’ washroom is essential.

3) A Women’s Apparel Shop, two stories high, with 20’ frontage on Main Street and a depth of 80’ to the right-of-way. The Shop offers merchandise including both women’s apparel and accessories. Surplus stock is stored in the basement. Incoming and outgoing shipping can be effected through the rear right-of-way. Of this establishment only a design of the Main Street facade is required.
$15,000 in prizes

You are cordially invited to enter the
While there is no restriction as to the size of signs on the front of these premises, their design should be integrated with the design of the individual store facades and none of them can project materially from the building.

As to ceiling heights, the first story is 14' from sidewalk grade to ceiling; the second story is 9' in the clear. The client has clearly in mind the value of Insulux Glass Block in its function of admitting daylight without vision, also for its effectiveness in night illumination, and also because it immediately suggests to the public a modern, up-to-date establishment. He looks not only for a logical use in these functions, in combination with other materials, but hopes that other new and appropriate uses may be devised by the competitors.

THE PRIZES: For each of the four competitions there will be awarded eight cash prizes as follows: First Prize, $1,000; Second Prize, $750; Third Prize, $250; Fourth Prize, $100; Fifth Prize, $100; Sixth Prize, $100; Seventh Prize, $1,000; and Eighth Prize, $100. Checks will be mailed to the prize winners by The Architectural Forum within one week after each judgment.

GRAND PRIZES. Competitors are encouraged to continuous participation in this series through an offer of Grand Prizes. These do not call for a final competitive effort but will be awarded automatically on the basis of points scored in the four quarterly competitions. A winner of a First Prize in one or more of these is given 100 points credits for each; Second Prize brings 80 points; Third, 63; Fourth, 49; Fifth, 38; Sixth, 30; Seventh, 25; and Eighth, 23 points. Thus a competitor who might capture one Third Prize and one Fifth Prize would, in the award of Grand Prizes, rank ahead of the winner of one First Prize.

Immediately after the awards have been made for the Fourth Competition, Grand Prizes will be awarded in the following amounts: First Grand Prize, $1,500; Second Grand Prize, $1,250; Third Grand Prize, $1,000; Fourth Grand Prize, $750; and Fifth Grand Prize, $500. In the event of ties in the scores for Grand Prizes, duplicate prizes will be awarded. Checks will be mailed to the Grand Prize winners by The Architectural Forum immediately after the scores have been computed.

4. EXAMINATION OF DESIGNS
The Professional Adviser will examine the designs to ascertain whether they comply with the mandatory requirements of the program, and will report to the Jury any instances of failure so to do. The Jury will satisfy itself of the accuracy of such report, and will place out of competition and make no award to any design which does not comply with these mandatory requirements. The Jury for Competition No. 2 will meet in the City of San Francisco within three weeks after the closing date, and carefully study the program and the eligible designs, and will make the awards before opening the envelopes which contain the names of the competitors.

5. REPORT OF THE JURY
Announcement of the awards, as detailed above, will be made in a later issue of The Architectural Forum, and to the successful competitors by telegraph immediately after the judgment.

6. EXHIBITION AND PUBLICATION
No drawings will be exhibited or published until after the awards of the Jury in each competition. All prize-winning designs will be published, with the names and addresses of their authors. Owens-Illinois Glass Company shall have the right also to publish additional designs other than those awarded prizes, accompanied by the names and addresses of their authors. As it is the intention of the Company to exhibit the prize-winning designs, and possibly many of the others, in cities throughout the country, covering an indefinite period of time, no drawings will be returned, except as follows: any competitor, other than a prize winner, who prefers the return of his drawing to its possible exhibition as outlined above, may enclose in the envelope containing his name and address the necessary stamps or a request to return by express, collect, insured for $30. Neither Owens-Illinois Glass Company, nor The Architectural Forum, nor the Professional Adviser, however, accepts any responsibility for their safe return beyond that of exercising reasonable care in packing and shipment.

7. COMMUNICATIONS
Every intending competitor is required to register his intention to enter the series of competitions (the registration does not obligate him to submit an entry), advising the Professional Adviser at the New York address by mail, giving name, address and classifying himself as an architect, an architectural designer, or an architectural draftsman. Acknowledgment of this entry will be made by sending printed titles to be pasted on the mounts, and a booklet giving technical information about Insulux Glass Block.

It will be impossible to answer requests for additional information or for interpretation of the terms of the program.
8. ANONYMITY (Mandatory)
The name or names of competitors shall not appear on the
drawings; the only mark of identification shall be a nom-de-
plume or device placed in the lower right corner of the mount,
below the border line. On an opaque white envelope, pasted
securely on the back of the mount, this same nom-de-plume or
device shall appear, and sealed in the envelope shall be the
name and address of the competitor; if an entry is the joint
work of more than one designer, the name and address of each
shall be enclosed, also instructions as to how, in the event of
an award, a check shall be drawn. No competitor shall directly
or indirectly reveal the identity of his design or hold any com-
unication regarding the competition with Owens-Illinois Glass
Company, or with any member of the Jury, or (except as pro-
vided in Section 7) with the Professional Adviser. It is under-
stood that in submitting a design each competitor thereby
affirms that he has complied with these provisions in regard to
anonymity, and agrees that any violation of them renders his
entry harsa concors. The Professional Adviser will number the
drawings as a further means of identification by the Jury; the
sealed envelopes shall be opened by the Professional Adviser
after the Jury's selection has been made, and in the Jury's
presence.

9. DELIVERY OF DRAWINGS (Mandatory)
Drawings submitted in Competition No. 2 shall be securely
wrapped, flat, addressed as follows: Professional Adviser, In-
sulux Competition No. 2, c/o THE ARCHITECTURAL FORUM,
153 Montgomery Street, San Francisco, Calif., and forwarded
to this address not later than midnight August 31, 1939. Post
Office date stamps or express company dated receipts indi-
cating receipt of the drawings on or before the above date and
hour, will be accepted as evidence of compliance with this
 provision. Entries delivered by hand must be at the above ad-
dress on or before the date and hour given.

10. DRAWINGS (Mandatory)
The design of each competitor shall be presented on one sheet
of white illustration board 20" x 30" over all; the arrangement
of drawings on the board shall be such that the 30" dimension
is the vertical; all shall be inside a single line border 1" inside
of each edge. A printed title (see Section 7) is to extend across
the bottom just inside the border line.
Undiluted black ink only shall be used, excepting where color
is required (See under b and d below), and the lines and in-
cidental lettering should be capable of reduction without loss
of legibility when the board is photographed down to a height
of 10". The following drawings are required, no more, no less.

a) First floor plan of Restaurant; and plan of the second-
floor Beauty Parlor; each at a scale of 1/4", indicate loca-
tions of principal elements, circulation, etc., without
developing in great detail the equipment.

b) Main Street elevation of Restaurant in full color at a
scale of 1/4".

c) A longitudinal section through the Beauty Parlor at a
scale of 1/4", in black line only.

d) Main Street elevation of Women's Apparel Shop in full
color at a scale of 1/4".

NOTE—One drawing, either b or d, should be rendered
as a night view in full color, the other as a day-
light view in full color, according to the com-
petitor's choice. Renderings may be in any
medium the competitor selects.

e) A vertical section through either Restaurant facade or
Women's Apparel Shop facade in black line drawing at
1/4" scale, making clear the construction in so far as it
applies to the glass block and also showing the provision
for admitting daylight and also for night lighting of
the facade.

f) Prepare an adequate, but brief typewritten statement
explaining why Insulux was used where shown and why
the particular face design or designs were selected, with
an explanation of the provision for night lighting effects
on the facade not shown by section drawn for e. Place
this typewritten statement in an envelope bearing the
word "statement" and the nom-de-plume or device men-
tioned in Section 8. If the entry is sent by express or de-
ivered by hand, attach this envelope to the back of the
mount. However, if the entry is sent by mail, this en-
dvelope shall be enclosed in another envelope, and mailed
separately to the Professional Adviser at the San Fran-
cisco address.

3rd and 4th competitions: No. 3—a Dairy, and No. 4—a Newspaper Plant, may seem
to involve technical knowledge that is not immediately at
hand. When these programs are published it will be found
that the necessary research has all been done; its results,
ready for use, are handed to the competitor on a salver.
Space requirements for each element, with its proper relation-
ship to the whole, are graphically given. This series, it need
hardly be emphasized, is designed to bring out new and bet-
ter uses for Insulux Glass Block. This major objective will
not be clouded by the introduction of extraneous difficulties.
As a matter of fact, it will be surprising if the competitor,
after a brief study of the predigested research handed to
him, does not regard himself as a qualified expert on dairies
and newspaper plants.

OWENS-ILLINOIS GLASS COMPANY
In planning strength for your jobs, don't forget this: The crushing strength of a mortar is not the only factor that decides the strength of the finished wall. Of equal importance are (1) plasticity which makes possible the proper bedding of the brick; and (2) the ability of the mortar to form a strong, intimate bond with the brick. ... Brixment mortar is of course tremendously strong. But more important still, it is extremely plastic and has high bonding power. When tested in piers the brick almost invariably shatter before the mortar fails. ... An example of Brixment’s great strength may be found in the 1937 cyclone at Gainesville, Georgia. The one brick building left standing in the stricken area was the only building in that area which had been built with Brixment.

If you are building foundation, load-bearing or parapet walls that require great strength—free-standing stacks or any other severe application—you can make no better choice than the use of Brixment for mortar. For further facts on bond, see page 7.*

*See further details in the Brixment Handbook.
Thousands of owners of old commercial structures fail to see the business-building possibilities of modernization simply because it has never been called to their attention in the right way.

Here's a field of activity for the architect that hardly has been scratched — a huge field full of potential profits — a field where Republic ENDURO* Stainless Steel has demonstrated time and time again its ability to enable owners to overcome the tricks that time plays on once-proud buildings.

Less than a ton of ENDURO was needed to effect the remarkable change in appearance so apparent in the dairy photographs on this page. If any further argument is needed look again at these two buildings, imagine them side by side, and answer this question, "Where would you prefer to buy your dairy products?"
Economy in building is no affair of the moment. It stretches on into the years ahead and takes into consideration such items as repair costs, replacements, even the cost of cleaning—the sum of which spells maintenance.

Maintenance costs on any part of a building in which ENDURO is used can best be expressed by the mathematical expression, “approaching zero as a limit”.

ENDURO is an inert material, unaffected by atmospheric conditions. Most chemicals have no effect on it. It does not rust or discolor. It will retain its beauty and its strength throughout the useful life of any building, and save its cost many times through the ease with which it may be cleaned. Cleaning operations are as simple as those of washing windows.

See Sweets’ Catalog for more detailed information or ask for literature suggesting the many architectural applications where this economical metal will save money for your clients.

REPUBLIC STEEL CORPORATION
GENERAL OFFICES: CLEVELAND, OHIO
Alloy Steel Division: Massillon, Ohio

Look under the names Republic, Berger, Steel and Tubes, and Truscon in Sweets’ Catalog File for the most complete line of steels and steel building materials manufactured by a single producer—or write for Booklet 126.

Excerpt from recent letter—

“This will attest that the Enduro metal used in the tower of the Chrysler Building continues in excellent shape and is giving most satisfactory service. Close inspection of accessible surfaces gives no indication of even discolorization other than that occasioned by dirt, dust and smoke. Certain accessible parts such as copings, we keep clean, and by no other method than the same as would be used to wash windows, and with very little effort keep these surfaces bright and shiny”.

REPUBLIC STEEL BUILDING PRODUCTS

Steel, Copper-Bearing
Steel and rust-resisting
Toncan* Iron Sheets
and Roofing

Concrete Reinforcing
Bars

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Pipe

Republic Taylor Roofing
Tins

Wire Nails and Staples

Steel, Copper-Bearing
Steel and rust-resisting
Toncan Iron Pipe

Steeltubes Electrical
Conduit

Tuscan Iron Enameling
Sheets

Berloy Sheet Metal
Products

Upson Quality Bolts,
Nuts and Rivets

Truscon Windows,
Doors, Joists and Other
Products
50 Houses 50

Forum: Just a note of surprise I should like to sound: were those 50 houses the best you could do? Looks as if when better little houses were going to be published the Forum would have to design them.

I wouldn't have minded so much if there weren't so many architects' names attached. You might have thought that architects, in all those years since you know when, would have gotten over some of those fancy ideas and learned to do decent small houses. Is it so hard? As a small-town banker I probably shouldn't care, but it does seem as if the landscape could be treated a little more gently. One of my clients has just got through a course in architecture which cost as much as the local plays just got through a course and they don't have any love interest. I must now spend thousands of dollars making kicked out of Switzerland pretty soon and will have a perfectly good building for a job doing plans for a builder in town— if he knew how. Seems he simmited his last short story. These books say you must have a love interest or the reader will leave the room to get a glass of water (that's what HE says) and never come back.

Another thing you must have is suspense. With the old type of specifications the reader always knew what was coming next. If he happened to be reading "Preparation of Forms" he knew that right after that would come "Method of Depositing Concrete in Forms," and naturally his interest waned. Now with my type of specifications nobody knows what is coming next, including me.

You see the system is to interweave an exciting love story right in with the specification so that when the contractor starts reading the specification he starts getting interested in the love story and is unable to stop reading until the last page, where the heroine learns that the hero (a young architect who specializes in design) has had so many morgues that he is slub happy) has just won the Irish Sweepsstakes and it comes to her like a flash that she loves him deeply. All this happens just before the contractor learns that at conclusion of work he is to wash all windows, remove all debris, leave all floors broom clean and turn over building ready for occupancy.

If the Guggenheim Foundation had acted in a façon qui convient and subsidized me for a year I could have written an entire specification along these lines that would have marked a new high in attaining contractor interest. But no: they are only interested in novelists and poets and dreamers of that kind. When a man has a scientific, business-like proposition such as I have outlined they pass him by. It's a good thing I didn't apply for a fellowship, although if I had, and they had accepted it, I might even have had time to found my "Specification of the Month Club," which would send all members a complete specification every month to send out with their own plans. One critic tells me that this would not work, because the specifications would bear no relation to the plans. Is this necessary? Is it even usual?

Grand Rapids, Mich.
Roger Allen

One if Bidet, Two if B'night

Forum: The little nugget of knowledge heading your Products & Practice section, namely that a bidet is a small horse used in an army, is the most architecturally useful statement in the entire article. Why the Forum should be so concerned with the hygenics of American posteriors is at first glance hard to fathom. Particularly as almost everyone else believed the problem rather well solved. Are you merely carrying to its logical conclusion the architect's pet theory that physical planning is capable of solving all human ills? Or were you interposing sly humor betwixt pages dully.

Of course, there are obvious advantages to the sitz bath. Think how equipping the Lyle USAH projects with bidets would do for the plumbing industry.

W. C.
Kansas City, Mo.

Metal Ceilings

Forum: In addition to being permanent, steel ceilings will outlast the ordinary life of plaster, do not crack, and no expensive decorations are ruined by remodeling or through cracking from vibration and strains on various type buildings.

They are also fire resistant and in many cases have definitely checked seemingly disastrous fires, and on present statistics can show where thousands of dollars have been saved by ceilings covered with metal.

For remodeling purposes, they offer a decided advantage and can be easily changed from time to time. The cost of steel ceilings, in some instances, figures less than other coverings.

They can be erected in one third the time it takes to apply plaster ceiling...

George J. Kohler, Manager
The Edwards Mfg. Co.
Cincinnati, Ohio

A statement in the April issue concerning metal ceilings inspired Mr. Kohler's comment—Ea.
Your client gets a superior product at an attractive price when you specify one of the units shown above to keep his basement free from seepage water—or the specialties shown below to modernize his hot water heating plant. Thrifty clients particularly appreciate these thrifty products.

Penberthy Products are carried in stock by jobbers everywhere.

Penberthy Automatic Electric Sump Pump
Made in 6 sizes

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(Water or Steam operated)
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Copper and Bronze Throughout

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Penberthy Relief Valve
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Penberthy Hot Water Heating Specialties

Penberthy Injector Company
Manufacturers of Quality Products Since 1886
Detroit, Michigan • Canadian Plant, Windsor, Ont.

May 1939
WHEN you visit the World's Fair, plan to see the Anthracite Exhibit first. Whether you go to the Fair by train or subway, by World's Fair bus or private car, you will find the Anthracite Exhibit, in the Home Building Center, close at hand. The diagram above shows how near this Anthracite Exhibit is to the entrances that will be most used.

See this most unique Anthracite Exhibit—created by Gilbert Rohde, one of America's foremost industrial designers. See the glowing cube of "Anthracite," held in a giant feminine hand that dwarfs people standing beside it. See the sixty-foot wall of "Anthracite" that changes from jet black to a red glow. See the "picturama" of the Anthracite producing region and its many products other than Anthracite. See the three-dimensional action display of automatic Anthracite equipment—and the White Room that contains a talking Anthracite heater.

One of the most interesting and outstanding Exhibits in the World's Fair will be the Anthracite Exhibit. See it first when you visit the Fair. Anthracite Industries, Inc., Chrysler Building, New York, N.Y.

GILBERT ROHDE
who created the unique Anthracite Exhibit, is one of the 5 industrial designers appointed by the World's Fair Corporation to design its own exhibits and buildings.

Save with ANTHRACITE
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Here's Big New Reference Book to Help You . . . It's on Planning

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- Send for a copy of this new colorful book, just published by one of America's foremost kitchen planners. It makes kitchen planning simple. It gives you a fast, economical method of giving your clients the kitchens they want.
- See how Curtis Kitchen Planning starts with spacious, modern durable wood cabinets, which come to the job in dustproof cartons. After installation they are ready to decorate, just the way you and your client wish!
- For 73 years Curtis has made fine woodwork. That experience is your proof of the quality of Curtis sectional kitchen units and other Curtis woodwork. No job-built cabinets compare in endurance, beauty or satisfaction with the Curtis line as thousands of owners know.
- Many architects specify Curtis cabinets in school, hotel, club, church kitchens—everywhere that modern, durable and efficient kitchen units are required.
- Ask your Curtis Dealer for a copy of this brand new book or write us. You'll want information on Curtis Silentite "Insulated" Windows, on Curtis doors and woodwork. Return this coupon today.

CURTIS COMPANIES SERVICE BUREAU
CLINTON, IOWA

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Dept. AF-4K, Clinton, Iowa
Please send me your new book on planning the Curtis Kitchen.
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Address ____________________________
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MAY 1939
WINDOW OF THE YEAR!

The Sealair All-Aluminum (or Bronze) Window is assuming major importance in the window field. Chosen again and again by architects, operative builders, and home owners for all types of residences and buildings, this unit brings advantages you can't afford to overlook.

The outstanding beauty of its strong, slender members and rich, satin finish appeals to everyone. Its dependably easy action and effective weathering are convincing features. And its amazing upkeep economy quickly wins the man who pays the maintenance bills. The Series 120 Sealair Window (illustrated) is furnished in 30 stock sizes, with putty-glazed sash and a wide choice of muntin arrangement to conform with any style of architecture. For openings up to 4'-0" x 8'-0". The Series 220 Window is furnished for openings up to 5'-0" x 9'-0"—with metal glazing. Other types are available, including Sealair Casements.

Consult SWEETS or write for latest details. Specify the Sealair All-Aluminum Window for your next job and you'll join in acclaiming it—window of the year!

Kawneer

THE KAWNEER COMPANY, NILES, MICHIGAN. BRANCHES: NEW YORK, CHICAGO, BERKELEY, CAL. DISTRIBUTORS IN PRINCIPAL CITIES.
BUILDING OF THE MONTH ... for the 9,000-acre lot with mountains (page 322)

PROBLEM OF THE MONTH ... More on rugs than on roads (page 333)

EVENT OF NEXT MONTH ... JUNE FORUM ... both FAIRS in ONE (adv.)
RANCH GROUP FOR E. L. WALBRIDGE, SONOMA CO.
ALIFORNIA. ELDREDGE T. SPENCER, ARCHITECT
Piling up to the north of San Francisco Bay lie tangled rows of brown hills, their hard sides wrinkled with gullies, haphazardly covered with patches of grass, redwood, oak, madrone and Douglas fir. Packed together in impressive confusion these restless shapes form a landscape which, if not as conventionally spectacular as the inland mountains, is much more typical of the State. Occasionally, as here, these hills flatten out into smooth slopes and wide valleys. Into nine thousand acres of such surroundings it was one architect's problem to build a ranch group.

The "problem" of fitting a building to a specific rural setting is undoubtedly an invention of recent generations of architects who, curiously enough, show no such solicitude for their surroundings when building in cities. The fact is that the best examples of harmony between architecture and landscape have been produced by builders concerned with matters of more immediate importance. Some such unromantic approach is suggested here in the magnificent photographs of Ansel Adams. A ranch house and service
COW AND HAY BARNs

RANCH GROUP FOR E. L. WALBRIDGE
SONOMA COUNTY, CALIF.
ELDRIDGE T. SPENCER, ARCHITECT
FIRM OF
SPENCER, BLANCHARD AND MAHER
buildings are strung along the side of a hill, arranged for convenient use and easy access from the road. The architectural treatment is identical for cow barn and main house: all roofs and walls are covered without variation by redwood shakes and by board and batten siding. There is no fake picturesqueness. Isolated from the customary services, the ranch group had to be designed as a self-contained unit. It includes, in addition to the main house, a guest house, cottages for the caretaker and chauffeur, a bunk house, barns and a stable. Independent systems provide water, heat and power on the property; telephone service is brought in over twelve miles of wire. Butane gas, stored in a 3,000-gallon tank, is used for heating, cooking, refrigeration, and for running the power plant. While open and loosely knit, the group plan has been well studied for convenient distribution of these services.

In its general design the ranch combines a strong personal quality of style with the healthy anonymity of good farm architecture. There is the almost classic impersonality of the hay barn above, and there is also the architect's evident fondness for heavily columned porches and loggias, and for rough surfaces. In this vigorous handling of textures, however, there is no superficial deference to an imposing landscape. The setting is acknowledged by a beautifully casual transition from trim geometric building shapes to the hand-split redwood battens, to the straggling fences in the old local manner, and finally to the trees and surrounding hills. These buildings do not "blend" into the landscape: they add a new note to it.
STABLE

RANCH GROUP FOR E. L. WALBRIDGE, SONOMA COUNTY, CALIFORNIA
ELDRIDGE T. SPENCER, ARCHITECT. FIRM OF SPENCER, BLANCHARD & MAHER

CONSTRUCTION OUTLINE


STRUCTURE: Douglas fir wood frame, exposed in service buildings, wall and roof sheathing, Brownskin paper. Exterior walls—1 x 12 in. unsurfaced redwood boards with split redwood poles as battens, Redwood logs.

CHIMNEY: Common and firebrick, pressed buck facing, terra cotta lining; quarry tile hearths.

SHEET METAL WORK: Gutters, flashings and downspouts—No. 26 gauge Armco galvanized American Rolling Mill Co. sheet metal.


FLOORS: Main rooms—plank oak; maple in bunk house. Baths and kitchens—1 x 4 in. T. & G. sub-floors and felt covered with linoleum.

WALL COVERINGS: Main rooms—wood; exposed frame in bunk house, service buildings, etc.


ELECTRICAL INSTALLATION: Three Fairbanks-Morse generating sets. Butane operated, Trenchclay underground distribution, flexible conduit wiring. General Cable Corp.


HEATING: All heating from central supply of Butane gas generated from liquid Butane by heat exchanger and piped to various buildings. Ranch house—hot water, Watrola Co. Convectors—Trane Co. Furnaces—Electroga Co.
The Meyercord Company is a large manufacturer of decalcomanias—transfers for lettering and designs which have a variety of commercial applications. One of the uses of these transfers is in the imitation of marble, rare woods and similar expensive materials on sheets of wallboard. In these new air conditioned offices, insulated from street noises, such synthetic products have been imaginatively incorporated as demonstrations of the company's products. Other applications are suggested in the photomurals shown on the preceding page. All interiors and furnishings were designed by Mr. Faidy, whose preference for strong rhythms and pronounced rectangular patterns is evident in the wall, window and ceiling treatments, the repetition of partition units and the placing of desks and work shelves.
OFFICE BUILDING FOR THE MEYERCORD CO., CHICAGO, ILL. JULIUS FLOTÓ, ARCHITECT

CONSTRUCTION OUTLINE

FOUNDATIONS: Reinforced concrete with Barber Asphalt Corp. membrane waterproofing.

STRUCTURE: Exterior walls—common brick on two sides; mottled yellow face brick in rear; Bedford stone front; furred with metal lath, 3 coats plaster. Interior partitions—4 in. burnt clay and gypsum tile. Floor construction—reinforced concrete joists, tile fillers. Ceilings—plaster, sound deadened in main rooms; suspended ceiling for top floor.

ROOF: Covered with 6 x 9 in. red quarry tile, Ludowici-Celadon Co.

SHEET METAL WORK: Flashing and gutters—Anacorda copper, American Brass Co. Ducts—galvanized iron fabricated by Roy M. Moffitt Co.

INSULATION: Top floor—18 in. air space and 4 in. mineral wool, Ludowici-Celadon Co. Sound insulation—Celotex, Celotex Corp.


STAIRS: Steel, terrazzo treads and platforms.

FLOOR COVERINGS: Marshall Field & Co. linoleum covering throughout.

WALL COVERINGS: Show rooms and offices—Marlite panels, Marsh Wall Products Co., decalcomania product by Meyercord Co.

FURNISHERS: Designed by Abel Faidy.

HARDWARE: By Yale & Towne Mfg. Co.

PAINTING: Walls and ceilings—3 coats white lead and linseed oil.


### PRODUCTS AND PRACTICE

**FATAL ACCIDENTS 1938**

<table>
<thead>
<tr>
<th>Category</th>
<th>Symbol</th>
<th>Fatalities</th>
<th>Change 1937-38</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOTOR VEHICLE</td>
<td><img src="image" alt="Car" /></td>
<td>-</td>
<td>-19%</td>
</tr>
<tr>
<td>OTHER PUBLIC</td>
<td><img src="image" alt="People" /></td>
<td>-</td>
<td>-8%</td>
</tr>
<tr>
<td>HOME (32,500)</td>
<td><img src="image" alt="House" /></td>
<td>+</td>
<td>+2%</td>
</tr>
<tr>
<td>OCCUPATIONAL</td>
<td><img src="image" alt="Worker" /></td>
<td>-</td>
<td>-11%</td>
</tr>
</tbody>
</table>

Each symbol represents 10,000 deaths.

According to current estimates of 1938 fatalities, accidents in the home moved up to first place among causes of accidental death last year, rose 2 per cent to take the place of motor vehicle deaths, which fell off 19 per cent.

## DESIGN FOR SAFETY

Last year, for the first time, home accidents killed more people than automobiles, became the largest single cause of accidental death. To the extent that this reflects the decline of motor vehicle fatalities, which fell off almost 20 per cent, it is, of course, a gratifying fact. But to the extent that it emphasizes our failure to score a proportionate reduction in home accidents it is extremely disquieting. Up 2 per cent over last year, 1938’s estimated 32,500 home fatalities, plus its 140,000 permanent and 4,610,000 temporary disabilities, are black marks against a year otherwise distinguished by the greatest reduction (10 per cent) in general accident fatalities so far achieved. They are also a challenge to the architect and the home-building industry to do everything within their power to bring a reduction in home accidents corresponding to those being made in other fields.

Naturally, not all home accidents are preventable. A great many arise out of personal factors, such as carelessness and the infirmities of old age, which are beyond control. A substantial proportion, however, are traceable to causes which can be wholly or partially eliminated by better house design and construction, often at little or no added cost. Recommended precautions against home accidents are simple and for the most part easily carried out; moreover, an excellent basis for assaying their relative importance is furnished by the statistics kept by insurance companies and government agencies showing the proportion of home accidents according to cause and location. Such figures show, for example, that more than half of all home accidents are caused by falls, and almost a third of these occur on stairs; indicating more than 5,000 annual deaths and 20,000 permanent disabilities which might be drastically reduced by improved stair design, safer surfacing, and better lighting. Others indicate little known sources of accidental injury and serve as a valuable reminder of points usually neglected. Highlighted by all such figures are the need for adequate, safe, and convenient storage facilities throughout the house and provision for segregated, properly supervised children’s play areas, both precautions which should therefore be doubly appreciated.
Falls occur mostly on stairs, are often caused by objects kept there because of lack of adequate storage space, especially for cleaning equipment. Another potent cause is the practice of climbing on chairs and tables to dust, hang pictures, occasioned in part by the architect’s failure to provide convenient storage space for a stepladder.

**LOCATE OF HOSPITALIZED HOME ACCIDENTS**

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Falls</th>
<th>Burns</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YARD</strong></td>
<td>19%</td>
<td>20%</td>
<td>8%</td>
</tr>
<tr>
<td><strong>GARAGE</strong></td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>BASEMENT</strong></td>
<td>6%</td>
<td>2%</td>
<td>6%</td>
</tr>
<tr>
<td><strong>PORCH AND OUTSIDE STAIRS</strong></td>
<td>20%</td>
<td>30%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>HALLS AND INSIDE STAIRS</strong></td>
<td>12%</td>
<td>17%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>LIVING AND DINING ROOMS</strong></td>
<td>12%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td><strong>KITCHENS</strong></td>
<td>18%</td>
<td>19%</td>
<td>56%</td>
</tr>
<tr>
<td><strong>BATHROOMS</strong></td>
<td>3%</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>BEDROOMS</strong></td>
<td>7%</td>
<td>5%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>ELSEWHERE</strong></td>
<td>2%</td>
<td>3%</td>
<td>5%</td>
</tr>
</tbody>
</table>

*Survey of home accidents hospitalized at Cook County Hospital, 1932-34, WPA.*

**TYPES OF HOME ACCIDENTS**

Nearly two-thirds of home accidents are caused by falls and fires. Falls alone account for more than half of the fatalities, for about half of all accidents; confabulations, burns, and explosions result in another 18 per cent of deaths. No other single cause (poisoning, absorption of poisonous gas, suffocation, firearms, etc.) accounts for more than 5 per cent.

**FALLS** result most of all from slippery, badly designed, or poorly lighted stairs, also from objects left on stairways—usually because storage facilities are inadequate or inconvenient. Outside the house, ice on stairs, unexpected steps, and poor lighting account for the largest number of falls occurring at any point. Next to bad stairs, slippery floors and loose rugs result in the largest number of falls. Contrary to general belief, the number of falls which occur in the bathtub and bathroom is small (6.1 per cent), and the number getting in and out of bed tiny (7.1 per cent). Precautions which the designer can take against falls are, in order of importance:

1. Keep the number of outside steps to a minimum, see that they are located so as to be easily visible both day and night (within range of entrance light, color contrasted with walks), protected if possible from snow and ice, and equipped with proper railings.

2. Design inside stairs for straight runs, intermediate landings if possible, keep risers under 7 1/4 in., trends at least 9 1/2 in. excluding nosing, uniform in size for each run, equip stairs with continuous handrail, provide non-slip finish if possible. See that stairs have sufficient natural light and that artificial light can be controlled from both top and bottom of stairway. Avoid placing doorways too close to top or bottom of stairway (50 in. minimum).

3. Provide adequate storage facilities, especially for household cleaning equipment which is otherwise kept on basement and attic stairways, provide 8 in. x 2 ft. x 5 ft. space for storing stepladder, preferably on both floors.

4. Avoid use of flooring materials which require slippery surfacing, urge owner to employ non-slip finishes, adhesive mats under loose rugs (21.9 per cent of falls occur on floors and rugs).

5. Equip all bathtubs and showers with an adequate grab bar, preferably vertical and of sufficient length to be reached either sitting or standing.

By far the largest proportion of falls, especially fatal falls, occur among the aged, (65 and over). A special precaution which should do much to reduce the number of such accidents is the provision of ground-floor bedrooms for the very old. Special effort should also be made to assure that homes to be occupied by old people are free from hazards of all types, especially slippery floors and loose rugs.

**BURNS**, the next largest cause of home accidents, accounted for 6,000 deaths in 1937, caused mostly by fires originating inside and outside the house and explosions, etc., resulting from operation of unsafe cooking, heating, and home cleaning equipment. The National Fire Protection Association lists the eight major causes of fire in the home the following: 1. Rubbish, 2. Defective Chimneys, 3. Combustible Roofs, 4. Defective Heating Apparatus, 5. Matches and Careless Smoking, 6. Gasoline, Kerosene, etc., 7. Electrical Defects, 8. Hot Ashes. Architects and builders are in a position to guard against most of these causes of fire, by taking all ordinary precautions required by good construction practice and by paying special attention to the following:

4. Basements and garages should be adequately lighted and fully paved to encourage cleanliness and equipped with fire resistant ceilings, garages with fire resistant sidewalls where they adjoin the house. Both may be equipped with simplified automatic sprinklers at surprisingly low cost. Fire resistant floors and walls, besides masonry and reinforced concrete, include plaster on metal lath and plaster board, which may be applied in double layers with staggered joints to increase fire resistance.
2. Adequate fire stops in the walls, especially next to basements and attics. In addition to ordinary methods, fireproof insulation such as gypsum and mineral wool does much to retard the spread of fire, may be applied to garage ceilings and sidewalls where they adjoin the house as fireproofing and to reduce heat loss.

3. Stairways should be enclosed wherever possible to avoid chimney effect. Avoid outside stair and porch constructions which are a fire hazard.

4. Open fires must be properly guarded. Attractive built-in firescreens are available which increase the likelihood of proper protection.

5. Provide 4 in. x 4 in. x 18 in. recess for fire extinguisher in kitchen or at head of basement stair and at a convenient point on second floor. Extinguishers are more likely to be purchased and kept in order if a special place is provided for their convenient storage.

Accidental burns and scalds not arising from fires occur mostly in the kitchen (56 per cent), and are commonest among very young children (0 to 4 years). This suggests the imperative need for a safe play space adjacent to the kitchen, as proposed by Fordyce and Hamby in "Small Houses for Civilized Americans," Arch. Forum, Jan. 1936. Small children have a tendency to follow the mother wherever she goes, and since most of her time is spent in the kitchen, most of the child's time is likely to be spent there, too, underfoot. About the only effective precaution against the hazard this presents for both mother and child is an adjoining play space within view of the kitchen but separated from it by a very low partition or guard over or through which the child can see the mother at work (and vice versa). Ideally, this should perhaps be a room intended solely for play, but in most cases it is used for a dining nook as well, to conserve space. Provision of such a room is mostly a matter of careful planning, plus equipment to divide it from the kitchen in the fashion outlined above. Care should be taken to provide convenient storage space for toys, since these are an important cause of falls.

Next most important cause of accidental burns is smoking in bed (often fatal), which falls outside the province of the architect. Burns and scalds may also result from unguarded heating equipment, showers lacking proper regulating equipment,

(Continued from page 336)
defective stoves, etc. Slippery floors in kitchens and dining rooms are a secondary cause of burns and scalds resulting from spilling hot liquids, etc. Defective electrical equipment, especially when likely to be operated with wet hands, as in the kitchen, bathroom, and basement, often causes burns, sometimes electrocution.

OTHER CAUSES of home accidents include poisoning, absorption of poisonous gas, mechanical suffocation, and firearms. Altogether, these account for but 13 per cent of fatalities, assume significant proportions only in the case of accidental poisoning in the 0 to 4 year age group, where two deaths per 100,000 population are traced to this cause (burns account for 11.3 deaths per 100,000 in the same group). That this is due mostly, as commonly supposed, to unauthorized prying in medicine chests and the like is indicated by the fact that the rate for more venturesome and agile boys is 50 per cent higher than for girls. The suggestion of a California mothers’ group that medicine chests be fitted with a special locked compartment for poisons would therefore seem to make sense, and in the absence of such equipment architects and builders might well provide an altogether separate locked compartment for this purpose. The same precaution would also seem desirable for firearms, although these are a much less important cause of fatalities than poison.

Cuts from improperly stored knives, etc., in kitchens are not an important source of hospitalized or fatal accidents, and therefore do not commonly appear in accident statistics. They constitute a real danger, however, which should be guarded against by the provision of proper storage facilities, such as a knife rack or, better still, a series of slots for knife blades in the back of the counter surface.

THE ACCIDENT-PROOF HOME, of course, cannot exist, but the fact that more than half of all home accidents occur in kitchens and on inside and outside stairs should be enough to prove that proper precautions in house design can do much to reduce the total. In addition, the fact that better than half of all home fires start in the basement, and that more than 15 per cent of fatalities are traceable to fire will indicate the importance of proper fire retardants and safeguards. Home-accident prevention is next on the agenda of practically all agencies concerned with safety, and is bound to receive the active attention of home builders and home buyers during the next few years. The General Federation of Women’s Clubs, with two and a half million members, has already set up a Home Safety Division to organize and direct an extensive Home Safety Program. Meanwhile, the architect or builder who becomes safety conscious will do himself and his clients a service which will pay dividends for years to come.

HOME ACCIDENT FATALITIES BY TYPE, SEX, AND AGE GROUPS

Death rate per 100,000 population

<table>
<thead>
<tr>
<th>MEANS OF INJURY</th>
<th>All Ages</th>
<th>0-4 Years</th>
<th>5-14 Years</th>
<th>15-64 Years</th>
<th>65 and Over</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>ALL FATAL HOME ACCIDENTS</td>
<td>14.9</td>
<td>13.7</td>
<td>30.1</td>
<td>25.4</td>
<td>4.5</td>
</tr>
<tr>
<td>POISONING BY FOOD</td>
<td>.2</td>
<td>.1</td>
<td>.4</td>
<td>.4</td>
<td>X</td>
</tr>
<tr>
<td>OTHER ACCIDENTAL POISONING</td>
<td>.7</td>
<td>.6</td>
<td>3.1</td>
<td>1.9</td>
<td>.1</td>
</tr>
<tr>
<td>CONFLAGRATION</td>
<td>.9</td>
<td>.6</td>
<td>1.4</td>
<td>1.3</td>
<td>.6</td>
</tr>
<tr>
<td>ACCIDENTAL BURNS</td>
<td>2.2</td>
<td>3.3</td>
<td>10.5</td>
<td>11.3</td>
<td>.9</td>
</tr>
<tr>
<td>ABSORPTION OF POISONOUS GAS</td>
<td>1.6</td>
<td>.8</td>
<td>.4</td>
<td>.5</td>
<td>.1</td>
</tr>
<tr>
<td>DROWNING</td>
<td>.2</td>
<td>.1</td>
<td>1.2</td>
<td>.5</td>
<td>X</td>
</tr>
<tr>
<td>TRAUMATION BY FIREARMS</td>
<td>1.0</td>
<td>.2</td>
<td>.4</td>
<td>.2</td>
<td>1.0</td>
</tr>
<tr>
<td>TRAUMATION BY CUTTING OR PINCHING INSTRUMENTS</td>
<td>.1</td>
<td>.1</td>
<td>.1</td>
<td>.2</td>
<td>X</td>
</tr>
<tr>
<td>TRAUMATION BY FALL</td>
<td>6.0</td>
<td>7.1</td>
<td>4.4</td>
<td>3.3</td>
<td>1.1</td>
</tr>
<tr>
<td>OTHER ACCIDENTAL FATALITIES</td>
<td>1.8</td>
<td>.9</td>
<td>8.1</td>
<td>5.3</td>
<td>.6</td>
</tr>
</tbody>
</table>

*Metropolitan Life Insurance Co., 1931-35 combined. X = less than .05 per 100,000. M = Male, F = Female.
These two summer cottages are located in a resort area on the Redwood Highway in northern California. Developed around a common garden, the houses have also been planned for the utmost convenience in separate use, each facing its own private terrace, with cross-views entirely eliminated. By a careful orientation of the group as a whole, each room has been assured ample sunlight. Services such as the kitchens, due to the seasonal use of the houses, have been reduced to a comfortable minimum. Materials, as in the Walbridge ranch (p. 323), are limited almost entirely to redwood, exterior walls, for instance, being given a slight variation in texture by the use of shingles and vertical siding. Typical of the architect's skill in designing for a specific environment are these broadly roofed houses, appropriate but not "rustic," and such vigorously handled details as the large bay illustrated on the opposite page. Cost (both houses): $15,200.
NORMAN K. BLANCHARD AND EDWARD J. MAHER, ARCHITECTS, FIRM OF SPENCER, BLANCHARD & MAHER
HOUSES IN GUERNEVILLE, CALIF. NORMAN K. BLANCHARD AND EDWARD J. MAHER, ARCHITECTS

LIVING ROOM

CONSTRUCTION OUTLINE

FOUNDATIONS: Continuous reenforced concrete.


ROOF: Split cedar shakes over Brownskin paper and Brown Co. Douglas fir sheathing.

CHIMNEY: Common brick with pressed brick facing; firebrick fire box and quarry tile hearth, Gladding, McBean & Co.

SHEET METAL WORK: Flashing—Armco galvanized iron, American Rolling Mill Co.


PAINTING: Living room and entry—stain and wax. Bedrooms and baths—3 coats lead and oil, W. P. Fuller Paint Co. Roof—linseed oil.

ELECTRICAL INSTALLATION: Knob and tube, General Electric Co. tumbler switches.

KITCHEN EQUIPMENT: Range, refrigerator and water heater—electric, General Electric Co.


HEATING: Bathroom heater—electric, Wesix Co.
A somewhat extended one-story design, this house contains provision for an additional two bedrooms and bath on the second floor. The necessary dormers are placed at the rear. Unusual in houses of this size is the interest created by a careful articulation of the three main elements: living room, entrance and service wing. A stone wall further emphasizes the entrance, and creates a link between the house and the handsome dry wall in front of it. Cubage: 24,000. Cost: $10,600, at 44 cents per cubic foot.
An interesting feature of this plan is the separation of bedrooms into sleeping and sitting rooms. A desirable arrangement where the budget permits, it has in this case necessitated the addition of two rooms, complicating a plan already somewhat involved. General living space is ample, with porches and terraces adjacent. The design, both interior and exterior, reflects a growing trend in its combination of modern and traditional elements.
CONSTRUCTION OUTLINE


ROOF: Covered with split red cedar shakes. Decks covered with Mastipave, Paraffine Companies. CHIMNEY: Common brick, terra cotta flue lining. Dampers—Richardson & Beynton Co.

SHEET METAL WORK: Flashing, gutters and leaders—Toncan galvanized iron, Republic Steel Corp. INSULATION: Roof—Reynolds Metallation, Reynolds Corp. Weatherstripping—Monarch Metal Weather Strip Co.


FLOOR COVERINGS: Main rooms—oak. Kitchen and bathrooms—linoleum covered.

WALL COVERINGS: Living room, bedrooms, kitchen and bathrooms—Sanitas, Standard Coated Products Co. Halls—grass cloth.


LAUNDRY EQUIPMENT: Sink—Crane Co. Washing machine and drier—General Electric Co.

BATHROOM EQUIPMENT: All fixtures by Crane Co. Shower—Speakman Co.

PLUMBING: Hot and cold water pipes—copper tubing.

HEATING: Atlas gas fired, warm air, blower type.
A compact two-bedroom house, very consistently treated in the Colonial manner. A studio with adjoining bath provides additional bedroom space on the ground floor when required; removed from the main living areas, it might serve as a guest or sickroom. Five dormers on the second floor permit the use of a low roof without undue inconvenience inside, and the horizontality of the design is further emphasized by the low porch which links garage and house. Note the efficient manner in which all plumbing units have been concentrated. Cost: $12,000. Cubage: 31,680, at about 38 cents per cubic foot.
ELMER GYLLECK, ARCHITECT

CONSTRUCTION OUTLINE


ROOF: Wood rafters, sheathing and red cedar shingles.


SHEET METAL WORK: Flashing—Old Style 40 lb. tin, N. & S. Taylor Co. Gutters, leaders and ducts—Toncan metal, Republic Steel Corp.


STAIRS: Treads—oak. Risers and handrails—birch.


WALL COVERINGS: Living room (one wall)—Western pine; remainder plaster.

WOODWORK: Trim, doors and cabinets—Western pine. Garage doors—overhead type.

HARDWARE: By Yale & Towne Mfg. Co.


PLUMBING: Hot and cold water pipes—galvanized iron. Concrete septic tank; Crane Co. shallow well pump with 30 gal. tank.

Constructed on a sloping site, this house has made excellent use of the property by its arrangement of living quarters above a partly exposed basement. While the result is anything but the conventional small house, it seems highly successful. With glass walls on the garden side, living room and bedroom are pleasantly located, and sheltered from the sun by projecting eaves. The plan is definitely workable: the kitchen is properly located, bedrooms are in a separate unit, and the main room is well arranged for its various uses. Cost: $4,815.
ART AND JOHN DOE

By Norwood MacGilvary

A little group of us were going through the International Exhibition the other evening. In this group were a lawyer, a steel man, and three women. The men were college graduates, each successful in his own field, in the prime of activity, awake and aware of the world and its doings, and not indifferent to what is called its "cultural" interests. Two of the women were writers with sharp minds and sensitive natures, and one of them an amateur of music. Most of these people thought of themselves as responsive to the arts in general, including the visual arts of decoration, design and painting.

During our rounds they pelted me with curious and indignant questions because they considered me by virtue of my training and practice to be the expert of the party. Most of these were "why" questions rather than "how" questions. Why does the painter have to beibel nature in his portrayal of it? Why does he put such silly or frightful people into his pictures? Why do these people have to be mouse-faced, rat-faced, sheep-faced, or simply idiot-faced? And why do they have to have the bodies of congenital cripples? I might have replied to these questions, as many a painter and critic has replied, "You poor simpleton, you had better keep quiet before you have uncovered all of your ignorance and lack of taste!" I did not so reply for a very good reason — I am not so sure of this answer myself.

As we were leaving the gallery the lawyer said, "I hadn't made up my mind before whether or not I like painting. Now I have. If this exhibition represents the art of painting, I know I don't like painting." The others did not express themselves quite so positively, yet they did agree with him, as the diplomats say, in principle, though they were willing to make generous exceptions in favor of certain pictures. I myself felt discouraged — discouraged that my beloved art should have so little influence with my friends. To the best of my ability I had argued, explained and apologized, pointing out that the artist is not a camera, and does not want to be, nor is he a mere recorder or copyist, but rather an interpreter and creator. Summoning all the pater of my craft at my command I expatiated on design, pattern, construction, fundamental as distinguished from superficial form, on the space-concept, on the abstract, on mood, vitality, and originality. I tried to stress the pre-occupations peculiar to an art of sight in so far as it differs from an art of hearing or of words.

No use. I was given a polite but incredulous hearing. I felt that I had not been convincing. The worst of it was that I had not wholly convinced myself of the deeper human values—of the human necessity of such an art. If this art of painting is not a necessity to the human spirit; if it is only a luxury, a sort of pick-me-up to a few jaded estheses, or is only a lively but unimportant subject for a debating society, it is a superficiality and an excrescence. Even the argument that the luxury for the few may somehow become the necessity for the many did not quite persuade. Yet I was unable to concede that this art is not a human necessity. All its history, its antiquity denies that concession. These questions then intrude: Is the fault ours—the public's? Is there some vital deficiency in the art itself, some exhaustion of its vitality after all these centuries that now presages an early end? Or is there some failing in its present practitioners, and some loss of faith in its high priests? Have they led us into some desert canyon from which there is no outlet, a canyon haunted by the spooks of bloodless ideas? Or is it only that we, the average people, are not able to follow these peerless trackers of the spirit over a difficult yet possible and even hopeful trail? Whatever the reason, the fact remains that they are not being followed.

What is it that this art lacks in food-value for the common man? It does not seem to be subject matter, for this is varied enough to suit almost any taste. It is not true that the public always demands a sentimental or literary story in his picture, in spite of what the art-for-artists champions say. Nor does it always reject the tragic in favor of the pretty and pleasant. The power of tragedy is still manifest in the drama and in literature. It is not intelligibility either, because the cryptic work of such painters as Dalí has a considerable public appeal — as great almost as that of the sweet and the obvious.

Perhaps too many painters have been concerned too much with the technicalities and the mechanics of their trade—with problems of design, pattern, color, etc., and with those abstract elements which admittedly lie at the very foundation of painting, and should by all means receive the artist's profound attention, but which in themselves and for their own sake, like blood and bones divorced from the body, are not viable and capable of maintaining a separate existence. Men and women have useful skeletons, of which under normal conditions they are fortunately scarcely aware, but in which anatomists and surgeons may well take a lively and understandable professional interest.

It is all very well to take heed of such fundamentals as the skeleton, but while doing so is it also necessary to sacrifice such things as shapely muscles, healthy skin, or even the superficialities of adornment? The dullest woman knows better than that. Unless we happen to be cranks or are flat broke, do we in life discard all our gimcracks and reduce ourselves to the barest necessities? Yet many argue that art, who by rights ought to be a wealthy woman and well able to afford to every device offered by nature to enhance the allurement of her charms, should starve herself to skin and bones, renounce her bathub, and exhibit herself in filthy nakedness, or else clothe herself in a ragged gumnysack.

Art can truly be judged by you, the individual, as far as you yourself are concerned, by only one measure. It is not a static but an energy measure. Do not ask what the art is or ought to be, for this is debatable and will inevitably lead to endless argument. Ask only what it does—not what it does to somebody else, for this again is only hearsay, but what it does to you. No matter how good a painting may be by any and all theoretical esthetic standards, if it does not do something special to you, Mr. John Doe, then it means about as much to you as a rumor of a love affair on Mars heard in a convention of psychologists.
SPECIALIZATION IN ARCHITECTURAL PRACTICE

Excerpts from editorial comment by The Architects' Journal, April 25, 1930, upon a recent debate in the R.I.B.A.

It is generally assumed that as architecture becomes wider in range and technically more complicated, there must be a tendency toward specialization, and that this tendency needs to be encouraged. But at the Junior Members' meeting at the R.I.B.A., general opinion seemed very much against encouraging specialization. In fact, Mr. T. P. Bennett, who opened the discussion, and is himself a famous specialist in apartment planning of a certain type, was the only speaker who had a really good word to say for it.

There are two kinds of architectural specialization: there is specialization of individual activity within an office (once popular but now fortunately denouèd) in which one member of a firm gets the jobs, another does the planning, another puts the architecture on, and yet another makes the working drawings; and there is specialization as practiced by a firm which concentrates on a specific type of building. It was this second kind of specialization with which the R.I.B.A. meeting was mainly concerned.

A man specializes in slaughter-houses not so much because he is interested in the psychology of planning for humane animal slaughter, but because he happened to get a slaughter-house to do for his first big job. The obvious argument for specialization of this kind, however arbitrarily come by, is that only by restricting your field to research and gaining wide experience in some particular type of building, can you hope to become proficient in that type of building. An important argument against is that specialization of this kind leads to architectural constipation: the architect must leave his imagination free to assimilate the requirements of any kind of architectural problem and must get himself to plan anything. Otherwise he grows biased, academic, sterile.

Mr. E. A. A. Rosé, who followed Mr. Bennett, went a step further than this. He said that the specialist, in perfecting his design for a special type of building, might be unconsciously producing something detrimental to the social structure: the vital need for every architect was to see architecture whole, every building an integral part of a planned community, every community an integral part of a planned region. The architect, said Mr. Rowse, must know how to collaborate, how to coordinate the findings of technical experts inside and outside the building industry in order to achieve this end.

Mr. Rowse's admirable architect-town-planner is, as Mr. Bennett pointed out, "the very biggest kind of specialist." Great as the need is for such men, only a very small percentage of architects can hope to cover the long term of training and finally practice the super-specialist. Nevertheless, the inter-relation of architecture and regional planning should guide all architectural activity.

Mr. Maxwell Fry pointed out that a much more flexible alternative to specialization was "group work": round-table discussions with a group of experts and technical specialists who could give information on each special job. He saw no good reason why we should be too rushed to think out a fresh problem whenever a new job came into the office.

None of the really great names of this generation of architects are the names of specialists.

There is no analogy with medicine. In medicine proficiency depends largely on detailed knowledge and specific experience. In architecture proficiency depends largely on imaginative technique. Imagination should be our specialty.

THE DANGERS AND ADVANTAGES OF LUXURY

By Siegfried Giedion

Excerpts from the author's article in Focus (London) for Spring, 1930

In 1892, a reaction from new architecture to a classical revival took place in America. It was not faulty execution or unsatisfactory design which caused this reaction; but richer execution and greater luxury were demanded. In contemporary American journals, it was emphasized that "the eastern man erecting an edifice for American journals, it was emphasized that "the eastern man erecting an edifice for luxury and the wish to impress. These needs occur in every civilization, and our own is no exception. If this is not sufficiently considered, the public averse itself by turning away and taking refuge in a substitute. If this need is met, as in America fifty years ago—by simply making lighter, more temporary and mercifully more transitory, less permanent—then it will be a luxury-forms from earlier periods to our own—the result is bound to be unsatisfactory.

An obvious danger is the suppression of modern architecture in most (and soon, very likely, in all) totalitarian countries. More dangerous still is their subversive influence on neighboring countries. In recent Swiss competitions, for instance, there have been signs of a leaning toward the Victorian, or Classicist. In Holland, too, there is a circle of young architects, some of whom have been taught by le Corbusier, who will soon demonstrate by executed buildings that they think the time has come to explore a revival by introducing stylistic details (cornices, friezes, Greek orders). These young architects stated in a public discussion at Amsterdam that they had enough of the "Frankfurt Kitchen," of the minimum-flat, of "box architecture." They were interested in big flats, bigger private houses, and great monumental public buildings. They asked again for "beauty." Why not the beauty of traditional details?

It is certain that in the future our attitude to the past will be less self-conscious. But today, we are still under the influence of the last century. There have been periods in the past, like the Renaissance, when owing to their own vitality they were able to assimilate the forms of the past, and from them evolve a new and great monumental architecture. Our context today is different. To satisfy our need for luxury, splendor and beauty, we must create for our own "optical vision."

Contemporary architecture can only be fully appreciated by those who have a real understanding of contemporary painting and sculpture. Architects, painting, sculpture are speaking from the same emotional source. That is their strength. Architecture can only satisfy emotional needs by means of collaboration with painting and sculpture. So it is necessary for the architect himself to have a personal understanding of the arts. Architects who work without knowing contemporary architecture is called on to erect impressive public buildings have already come up against this problem in practice. . . . The public authorities often ask for the use of sculpture and painting which is quite contrary to the architectural expression. In the course of the fight for functionalism, many have touched with painting and sculpture. There is a real danger that the unity of a building is destroyed if the architect treats painting and sculpture as secondary in importance, or as a subject for flippancy.

In these days of specialization it is exceptional to find a painter who has a real grasp of architectural problems or an architect with a talent for painting. It generally results in the worst form of dilettantism if an architect tries to be a painter as well. It is of vital importance to both art and architecture that means of cooperation between the two should be found in the future. Imagination is the most valuable ingredient of architecture. By imagination we mean, nowadays, a new relation and integration of the elements of architecture, as well as new discoveries of spatial planning. The danger is in the tendency for archi-
leisure. It makes no difference whether this happens by the introduction of single stylistic elements as in Holland, or, as in recent English work, by whimsically degrading Greek statues for the sake of a tasty sensation. It is certainly difficult to regain luxury in architecture in a legitimate and vital way.

CIVILIZATION, 1939

From "The Mathematics of Air Raid Protection" in Nature (London), by Professor J. B. S. Haldane, P.R.S.

Consider a given type of bomb, say a 250 kilo. bomb, and a man in a given situation, whether in the street or in a shelter. Let \( A \) be the expected number of bombs falling in his neighborhood (say, one square kilometer) the distribution of bombs over this area being supposed even, since aim is poor when cities are bombed. Let \( p \) be the probability that a single bomb falling at the point \((x, y)\) will kill him. Then the probability that he will be killed in the course of the war is

\[
P = \frac{1}{A} \int_{A} p(x, y) \text{integration being taken over the whole neighborhood or area } A.
\]

Values of \( n \) and \( p \) will be different for each type of bomb.

THEY SAY—

"Of new building in Milwaukee County, Wis., 83 per cent is done without benefit of architect."—LEON HUNT.

"The most beautiful architecture wrought by man is a bridge, especially a suspension bridge."—ROBERT MOSES.

"Today, beyond all doubt, bad architecture is a greater evil in England than drink and drugs put together."—H. G. STRAUSS, M.P.

"One can use the current of eleven 100-watt lamps during the time it takes a cigarette to burn, and at the same cost."—H. FREEMAN BARNES.

"The linking of any branch or movement of architecture with any particular type of political faith leads to a hardening of the mental arteries."—JOHN GLOG, HON., A.I.A.

"The visitor on his arrival at my own city of Boston enters a shapeless space which, with extreme convention, is termed a square and named after Admiral Dewey with a distorted disposition to do him honor. . . . Sweeping across the facade of the station is an elevated railroad, a diabolic institution which proclaims that Boston is attending to its own interior business and doesn't mind what the stranger thinks about it. I know of no uglier vestige to a great city in America."—CHARLES D. MAGNIN.

"For most of us the word 'modernistic' has come to bear a meaning from which, at this date, it cannot be rescued . . . even if one would wish to rescue such a tortured addition to the English language. We are all looking forward to the time when 'modernistic' will have found its last refuge in the bargain basement on the way to join its late-lamented predecessors, 'art nouveau,' which was lost in the Great War, and 'modern,' that pretty child of the 1924 Paris Exhibition which has languished to an elegant decline in decorators' salons."—HEMPhrey CARVER.

ON THE CARPET

By Lee Simonson

The constant complaint I hear on the part of both decorators and architects is that neither the traditional nor the modern designs are good or in good taste. The complaint of carpet salesmen and manufacturers that people are no longer interested in carpets and don't like a patterned floor, is largely due to the fact that, unlike the designs in wall paper and fabrics, the patterns in carpets are not good enough to arouse much interest. As a rule, both traditional and modern designers resort to a single tone carpet faute de mieux. Neither they nor their clients ever get very excited about their choice, so that both concentrate their interest and spend the money available on other features of the interior. Even the single tone carpets are not subtle or varied enough in color or texture: the fountain pen ink blues, the cranberry sauce reds and the dead browns predominating.

Carpets manufacturers seem very exercised at present over the problem of their merchandising outlets: should they encourage dealers to sell from samples, at wholesale showrooms, or limit their distribution to retail stores? They might do better to consider first, not how they are going to sell their product but what they have to sell. Compared to the standards of design, both traditional and modern, that can be seen at any of the leading upholsterers or wallpaper distributors, the designing of carpets is at a chronically low ebb, dating back, with rare exceptions, if not to the Garfield-Hayes period, at least to early Statler. Where so-called modern is attempted, chiefly for low movie houses, its bluntness is a kick in the eye.

There is no reason why there should be capable, talented and even brilliant designers of textiles and wall coverings in this country, and no carpet designers in the same class. The overwhelming chances are that the carpet industry has failed to find them and organize them.

At a recent dinner of a trade association representing the carpet industry (where I spoke and where my remarks were not any too well received), I pointed out several obvious ways of stimulating better designs in carpets and encouraging public appreciation of them.

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First among these was the organization of public competitions, with either scholarships or prizes, for students in the textile schools of the country, as the Beaux-Arts Institute of Design has done for years in the architectural field; and for professional designers, exactly as is done in leading architectural competitions, by making certain designers invited competitors, thus setting a standard for the competition, offering substantial cash prizes and having the event judged by a top-notch jury both on the technical and the artistic side.

The industry might also very well select a few really qualified men to visit textile schools and architectural schools and societies to explain the technical problems of design in relation to the problems of manufacturing costs and present day merchandizing.

The industry as a whole needs greatly to improve its methods of presentation. The average showroom, wholesale or retail, is a dismal affair. The carpets are laid out in monotonous layers that remind me always of Diego Rivera's mural paintings of a New York flophouse where the out-of-works sleep in receding rows. Carpets are part of an ensemble: an extremely difficult thing for anyone but a professional to anticipate with his mind's eye. The incentive to buy them—and they often represent a very substantial first cost—is a realization of what they can do in a room to make it more agreeable or charming or more livable. It is precisely this relation that is completely ignored.

What is needed here is modern technique of display, both in wholesale and retail showrooms. There should be recesses or counters of space occupying no great space but within sight of the customer looking at the sample line, where he or she could see certain typical and effective combinations of carpet with wall coverings, with window draperies, and a few typical pieces of furniture, whether modern or of any of the historic periods still commonly used.

Probably no single manufacturer could undertake the cost of this kind of propaganda. An organization of the leading manufacturers who would contribute the necessary funds for a four or five year program is what is required.
THE DIARY

Detroit, Friday, March 17.—The Michigan Society of Architects, holding its Silver Anniversary Convention today, expressed its intention to create, if practicable, the office of an executive director. This man, not in active practice, should give his whole time to the work of the Society's diverse interests. Naturally, the major problem is one of finance. Dues now three dollars yearly for the membership of about 500 would surely have to be raised to provide a budget of $7,000 or $8,000.

In this connection, the annual report of President Weston, Southern California Chapter, A.I.A., indicates that this desire for more intensive work in the profession's interests is not confined to Michigan. Weston's report points out that there are many things of inestimable value to the profession as a whole, crying to be done, and someone should be paid for the time and responsibility needed in doing these things. Instead of twenty dollars a year dues which the Southern California Chapter members now pay, their president thinks it would be well worth while for them to pay something like ten dollars a month, and achieve correspondingly greater benefits.

Detroit, Saturday, March 18.—Kenneth C. Black, president of the Michigan Society of Architects, introduced the inimitable Roger Allen as toastmaster for the Third Annual Michigan Building Industry banquet. About 900 men filled two banquet rooms of The Statler—a measure of cooperation between architects, builders, real estate and material men that comes near setting a new high record.

Foregathered with Robert Franz and James A. Spence of Saginaw, and Arthur K. Hyde, president of the Detroit Chapter, talking of competitions, clients, and other puzzling elements of architectural practice until I boarded the 2:35 a.m. train for New York.

Tuesday, March 21.—The New York Chapter, A.I.A., was all set, after a dinner tonight, for a debate on "Full-time vs. Part-time Services." Robert O'Connor, Henry Waterbury, and Wesley Bessell were upholding the right of the architect to see his work through from the first sketches to the turning over of the keys. Ralph Walker, William Lescaze, and Lorimer Rich contended that possibly half a loaf is better than no vacation, Ralph Walker stressing the point that partial service, such as was indicated in the Smithsonian Art Gallery Competition program, was the first instance in his experience when the client was willing to take over the gamble on the cost of making drawings. However, the whole debate became something resembling a love feast when I read a news release from the Treasury Department indicating that the regional competition scheme for the selection of architects for public works was about to be tried, and that Secretary Morgenthau apparently was by no means convinced that the working drawings for the Smithsonian Art Gallery must be made in the Supervising Architect's Office rather than on the winner's own drawing boards.

Friday, March 24.—The tradition is that an architect has to shoot somebody in order to make the front page. Harry Francis Cunningham of Washington made it without resorting to homicide. He merely told the German Embassy, for whose new home in Washington he was associate architect, that they had better get someone else to do the job. The design, selected in competition, is that of Professor E. A. Breuhaus. Cunningham resigned for two reasons: in the first place he could get no cooperation or information from the Reich's architects; and in the second place, "The astounding events of the past few days . . . are so offensive to my solidly founded American ideals that it is impossible for me to be of any further service to your government." A major of infantry with the A.E.F. in France, Harry Cunningham apparently doesn't like the Germans any more now than he did then.

Washington, Thursday, March 30.—Lunched with Louis Simon who mentioned, incidentally, in connection with the Social Security Building that the 150 sets of blueprints just sent out for bids would cover eighteen acres.

Friday, March 31.—Aymar Embury has a theory that a perspective drawing of a small building looks much more realistic if the viewpoint is taken at grade rather than at the height of a standing man's eye.

Monday, April 3.—While in Detroit recently, I heard the good news that Clair Ditchey, regional director, A.I.A. for Michigan, Indiana, Kentucky, and Ohio—aided and abetted by Leigh Hunt, regional director representing the State associations—has brought all four of his States into A.I.A. membership. Hats off to Clair Ditchey for bringing the first of the five regional districts within the A.I.A. on our march toward the unification of the architectural profession in America.

Rochester, Wednesday, April 12.—Following the lead of Buffalo architects in their efforts to provide an adequate and convenient means of acquiring a modest home, a Rochester group launched today its Certified Homes program. Conway Todd, president of the architects' group, presided at a luncheon for 600, including men from the lending institutions and real estate offices, general contractors, subcontractors, and material men who have joined forces with this single objective. J. E. McNamara, who has been managing the Buffalo enterprise, is also to manage this one. Buffalo, he tells me, already has 700 houses under contract, designed, financed, supervised and guaranteed under the Certified Homes plan.

Back to New York in company with Edward B. Green of Buffalo, and William G. Kaelber of Rochester, who were coming down for a meeting of the Registration Board, Mr. Green, who finds time from what is perhaps the largest practice in Buffalo to preside over the State's Architectural Registration Board—and has done so since its organization—is an irrepressible youth of 84 years.

Washington, Thursday, April 13.—Breakfasted with Henry R. Shepley, Aymar Embury and Philip Maher on their weekly way to their job as Advisory Board of design to the Supervising Architect. Shepley told us of meeting George Howe the other day, who promptly came out with, "Henry, your Cornell Medical Group is the most beautiful pile in New York." "But George," replied Shepley, "I was under the impression that you did not care particularly for anything so unfunctional as beauty." "Quite right," said Howe, "I don't."

Saturday, April 15.—Burnham Hoyt and Richard Neutra came on from the far West to help judge today the second stage of the Productive Homes Competition. Frederick Ackerman being the third architectural member of the Jury. The winners for the five regional districts were announced at luncheon. Here was no typical suburban residence to be designed, but a house which should itself contribute in plan to a form of American life that has been almost lost since the days of the early pioneers. (See page 14.)

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James L. Taylor
SECONDARY SCHOOLS

Secondary school curricula have changed more profoundly in the past three years than in the preceding thirty. Throughout the country, new methods are now being worked out and applied which strike at the very basis of formalized education. Learning by doing is replacing learning by rote. Orientation of the new program is everyday life, its prime object to graduate students better fitted to the conditions and problems of our present day democracy. Already more than one in every ten U. S. communities has made or is making basic alterations in its school curriculum. In ten years time, it is hoped that this transformation will be universal.

Most affected by these new methods is the school's basic unit, the classroom. Conventionally a rigidly organized lecture and recitation room, the classroom in the modern school might more properly be called a workroom, is devoted to a general type of subject matter rather than a specialized division of formal knowledge. Instead of moving about from class to class and teacher to teacher every half hour, students may remain in this one room the better part of the school day, while several teachers may use it simultaneously. Instead of working from a single textbook, students are encouraged to make use of library and periodical sources. Facilities for motion- and still-picture projection, radio, informal dramatics, private conferences between teacher and pupil, and plenty of storage space for books, paraphernalia, and equipment, are but a few of its new needs. Naturally, such a classroom is a vastly different thing from its progenitor. In the first place, it is considerably larger. Secondly, regular rows of individual desks are replaced by generous work tables at which several students may be accommodated, and a more compact grouping of tablet-arm chairs for demonstration periods. Finally, it should be surrounded with sufficient space for auxiliary equipment. Classrooms for Liberal Arts study, for instance, are ideally provided with a small stage, with a work table and space for storing costumes, storage cabinets, two or more typewriter tables, and bookshelves in addition to more cork and less black boards. Model unit plans on the following page illustrate this tendency as applied to Liberal Arts, Science, and Homemaking class areas.

In addition to classroom changes, the new school curriculum has had considerable effect on secondary planning as a whole. Most general of these is the shift in the dividing line between elementary and secondary schools. Formerly this line was placed between the eighth and ninth years, dividing the twelve year total into eight and four year periods. Today the line is drawn between the sixth and seventh years, making two equal periods of six years.
This means that the small high school may need to be enlarged to accommodate the two added grades, or some other type of adjustment be made. Coupled with the recommendation that no high school should house less than 100 pupils, and preferably should accommodate from 300 to 1200, it has in some cases resulted in the coupling of two smaller schools into a double unit consisting of Junior and Senior High in order to effect operating economies and provide better facilities. Preferably located on the same campus, such double units are nevertheless an improvement over two separate schools even when several miles apart. Another new factor affecting the general plan is increased use of high school facilities by the adult community, a practice which reacts to the benefit of both. Invoking public use of gymnasium, auditorium, and library facilities, it dictates separate access and separate control of the heating equipment for these units in order that they may be used independently. Multiple use of certain shops, class, and work rooms for adult education may also demand separate control of heating.

Demand for increased flexibility is still another result of changing educational methods. Most schools are not undertaking drastic changes all at once, are rather altering their curriculum in gradual stages. This calls for construction permitting maximum flexibility and plenty of variety in classroom size. Partitions between classrooms should be soundproof and readily removable, and free from electric wiring and plumbing, which should be located in exterior and corridor walls so as not to interfere with alterations. In addition classrooms should be located next to classrooms, laboratories next to laboratories, so that they may be combined if necessary, and floor and ceiling finishes should run through under and around partitions to eliminate need for patching if partitions are removed.

Planning the present day school calls for a more intimate understanding of the educational process than was formerly required, when all that was necessary in most instances was to provide a sufficient number of uniform classrooms with free circulation between, without regard for the specific use to which the rooms would be put. Today, carefully designed units are needed not only for vocation courses, homemaking, and the sciences, but for liberal arts as well.

Design of each of these units, of which the examples in the margin are merely representative, should be based upon close cooperation between the architect and the school authorities directly involved, especially during the present evolutionary stage of the development of new teaching methods. The examples on the pages which follow illustrate many of these new trends in various formative and more or less complete stages of development. In addition to forward steps in education and school planning, they represent heartening progress away from the hidebound tradition-
GAMALIEL BRADFORD SENIOR HIGH SCHOOL, WELLESLEY, MASS.

PERRY, SHAW AND HEPBURN, ARCHITECTS

AUDITORIUM

MAY 1939
This handsome building, the work of a firm of architects hitherto known for their sensitive handling of the Georgian style, demonstrates—among other things—that the strict school in proportion and detail which the traditional affords serves an excellent basis for modern design. The plan, a simple L, is noteworthy for its placement of the gymnasium, music room, and auditorium at the extremities, thus providing proper segregation and independent access for these units without complicating the form of the building as a whole. Reversing the conventional arrangement, the auditorium is attached to main building at the stage end, a device which permits the occasional use of adjoining schoolrooms for dressing and further divides classroom and auditorium circulation. Other features of the plan include the attractive location of the lunch room atop the auditorium, and direct and generous exit facilities at three points on the main corridor.

**CONSTRUCTION OUTLINE**

**STRUCTURE:** Exterior walls—red brick, Westfield Brick Co., backed with Winchester sand lime brick. 7/8 in. steel channels, painted metal lath and gypsum plaster. Interior partitions—(basement) clay tile; above gypsum tile. Floor construction—concrete, Celotex Corp. Acousti-Celotex directly on underside of slab.

**ROOF:** Main building—concrete, 5-ply roofing, Barrett Co.; remainder—3/4 in. boarding and 5-ply roofing.

**SHEET METAL WORK:** Flashing—(concealed) Wasco No. 5 fabric, Wasco Flashing Co.; (exposed) lead coated 16 oz. copper. Tower—lead coated copper applied over felt on boarding on steel frame.

**WINDOWS:** Steel, Hope's Windows, Inc., Glass—quality A. Glass blocks—Owens-Illinois Glass Co.


**HARDWARE:** Bronze by Yale & Towne Mfg. Co.; Von Duprin panic bolts, Vannevat Hardware Co.


**SPECIAL EQUIPMENT:** Incinerator—Kernerator, Kern Incinerator Co. Dumbwaiter—Beckwith Elevator Co.

**GENERAL CONTRACTOR:** N. Spinelli & Sons, Co., Inc.
Somewhat surprisingly, the wholly conventional exterior shown on the opposite page houses a school in which group study and other modern educational devices are emphasized, and an interior which makes few concessions to tradition. Typical classrooms are equipped with conference tables and movable chairs in place of the usual fixed desks. The Homemaking Department is complete even to a free standing “model house” for demonstrations and experimentation. Classrooms are large, and in most cases designed for specific purposes, in line with the modern trend. Generous facilities for vocational courses, gymnastics, library, and cafeteria, plus a large and well equipped auditorium complete the picture of an up-to-date secondary school plant.
FOODS LABORATORY

CONSTRUCTION OUTLINE

FOUNDATIONS: Reenforced concrete.
ROOF: Main building—gypsum plank, slated. Auditorium and gymnasium—gypsum plank, Barrett Co. built-up asphalt smooth surface.
SHEET METAL WORK: Flashing and gutters—lead-coated copper, American Cyanamid & Chemical Corp. Ducts—galvanized Toncan metal, Republic Steel Corp.
INSULATION: Roofs—Celotex, Celotex Corp. Sound insulation—Acousti-Celotex, Celotex Corp.
WINDOWS: Sash—double hung, steel, Campbell Metal Window Co. Glass—double strength.
STAIRS: Reenforced concrete, Feralum nosings, American Abrasive Metals Co.
FLOOR COVERINGS: Asphalt tile throughout, David E. Kennedy, Inc.
WALL COVERINGS: Gymnasium and passages—glazed tile brick; elsewhere plaster.
WOOD AND METAL TRIM: Trim—combination steel buck, jamb and trim. Doors—in general birch veneer; hollow metal fire doors.
HARDWARE: Bronze, Sargent & Co.
GENERAL CONTRACTOR: The Industrial Construction Co.
HIGH SCHOOL FOR LIBERAL & HOUSEHOLD ARTS, HOLLYWOOD, CALIF.

MARSH, SMITH & POWELL, ARCHITECTS
One of several specialized units comprising a ten-acre, 2,500 student high school, the building illustrated on this and the preceding pages illustrates another trend in secondary school design: towards the college style campus and away from the single, monumental building. (For the Science unit—No. 6 in the plot plan above—see Arch. Forum, March 1938, p. 231.) The unusual degree of separation between the two lugs of the L-shaped plan is explained by the necessities of earthquake-resistant construction, which requires a joint at this point in the structure, but has other advantages as well, admitting additional light and air and adding interest to what is otherwise so often a dreary corridor. Folding partitions between the Social Art classrooms provide a high degree of flexibility, and the enlarged room thus created is used for entertaining in conjunction with the reception room and private dining room adjoining the Foods Room, where students demonstrate their culinary art to school visitors.
The clean horizontal lines of this brick and concrete structure are reminiscent of Frank Lloyd Wright's Prairie Architecture, nonetheless attractive and appropriate against the background of Colorado hills. Designed to supplement an existing building consisting mostly of classrooms and dating back to 1885 (to which it is connected by a tunnel running beneath a separating street) the building is intended for community as well as school use. Classrooms may be shut-off from the Gymnasium and Auditorium Lobby by folding gates which disappear entirely in the corridor walls—shown part way out in the picture at the bottom of the opposite page—and are equipped with separately controlled heating.
CONSTRUCTION OUTLINE

FOUNDATIONS: Concrete. Waterproofing—membrane on walls below grade.


HARDWARE: By P. & F. Corbin Co.


GENERAL CONTRACTOR: The F. J. Kirchhof Construction Co.
This imposing building contains, in a single well-knit unit, all of the facilities of the modern secondary school, with swimming pool, gymnasium, vocational shop and auditorium properly located at its extremities. As in plan on page 355, the latter is attached to the main building at its stage end, but in this instance the circulation which this entails has been worked out for a greater degree of separation between student and public access. Utmost flexibility in this respect is provided by the unusual treatment of the balcony, which is connected to the second-floor corridor of the main building by the galleries shown above. Another unique feature of the scheme is the huge window providing side lighting for the gymnasium, an arrangement probably much appreciated in a climate where the hot sun is so nearly overhead for the greater part of the school year.
CONSTRUCTION OUTLINE

FOUNDATIONS: Spot footings and grade beam. Waterproothing—2 coats Ironite, Bowles Co.


SHEET METAL WORK: Flashing—copper. Ducts—galvanized iron.


WALL COVERINGS: Auditorium lobby and library walls—linoleum, Congoleum-Nairn.


WOOD AND METAL TRIM: Doors and trim—cable; hollow metal, Metal Door Trim Co. Shop doors—hollow metal, Overhead Door Co.

HARDWARE: Yale & Towne Mfg. Co.; Von Duprin exit devices, Vennegut Hardware Co.


ARCHITECTS:

JOHN F. STAUB
KENNETH FRANZHEIM, INC.
LAMAR Q. CATO
HARRY D. PAYNE
LOUIS A. GLOVER
ARITHMETIC OF LAND DEVELOPMENT

is flunked by 7 out of 10 U. S. subdividers. THE FORUM probes and solves the equation:
longer blocks plus shorter streets equals lower costs.

Next to actual hammer-and-saw construction, land development is Home Building's biggest assignment. Close to half the houses built last year in urban U. S. were erected in subdivisions. Moreover, under the influence of the Federal Housing Administration's mortgage insurance program this nominal 50-50 ratio is becoming increasingly lopsided in favor of houses in subdivisions.

Subdividing is not only a big assignment; it is a tough one—mastered by comparatively few of those who try it. Evidence is the fact that of the 927 subdivisions submitted last year to FHA for mortgage insurance, more than 800 were not acceptable. To be specific, 65 per cent were glaring examples of what subdivisions should not be; 25 per cent were only fair-to-middling. The balance, a mere 10 per cent, measured up to FHA's yardstick, did not require the otherwise valuable assistance of its Land Planning Division.

If, despite recent prechings of the aesthetic as well as dollar-and-cents value of careful land planning, these sal statistics prevail, it is safe to say that at least 75 per cent of the 9,000-10,000 active subdivisions in the U. S. today are poorly planned. Obviously, the average subdivider has much to learn. And, from the caliber of his existing work, it is apparent that he must be taught in simple language. More advanced attempts have evidently sailed over his head.

Thus, to point up the many advantages of careful land planning, to underline by comparison the many disadvantages of current practices, THE ARCHITECTURAL FORUM herewith explores some of the major aids to economic subdividing—and, for the benefit of the untutored 75 per cent, pursues its explorations with understandable simplicity.

Secondary purpose of the following paragraphs is to give the low cost house a firmer leg to stand on. It is common knowledge that of the well-planned subdivisions now being developed, all but a handful are aimed at the upper income brackets. The little fellow is not only hard pressed to find a house he can afford (ARCH. FORUM, April 1939, p. 238 et. seq.) but, when he does find one, chances are that it is an isolated offering or one of a long row of uninviting dwellings pressed closely together in an uninviting neighborhood. And, the middle income group is not without this difficulty. More important, many a medium-priced house could reach down into the vaster low cost market if subdividers would heed the economies of smart land planning.

Site Selection. Dictionary definitions notwithstanding, good subdividing is much more than the mere “division of a part...into smaller parts.” In the first place, there must be a need for housing in the general area considered and, secondly, the selected site must lend itself readily to housing that will meet that market. Assuming that through industrial expansion or population movements or some other cause such a local need exists, it must be measured by some form of market analysis. Of prime importance is determination of what family income group the
proposed subdivision will serve. Incomes will govern the sales prices to be affixed to house and lot units and, working backwards, sales prices will determine what should be paid for raw land.

Low cost houses cannot be built on high priced land. If the market dictates that house and lot sell for $5,000 or less, authorities hold that the subdivider should not pay more than $1.400 per gross acre for raw land. Division of the acre into ten lots will produce a raw land cost of $40 per lot, but the usual 15 per cent mark-up to cover carrying charges and the loss of land in streets, parks, etc., ups the cost per lot to $550 or 7 per cent of the ultimate $5,000 cost of house and lot. This 7 per cent rule of thumb says that land cost for the $4,000 house should not exceed $1,120 per acre; for the $6,000 house, $1,680; for the $8,000 house, $2,240; for the $10,000 house, $2,800.

Costs also depend upon topography. A mountain range in miniature might make an attractive subdivision but the grading bill would also be mountainous. And, while building upon a rock may be good practice, it is expensive. The site, or at least a sizable portion of it, should be free from steep slopes, impossible ravines, and low-lying, poorly drained areas. However, the opposite course is frequently pursued to an extreme—the average subdivider breaks his back in search of a perfectly flat site. Realizing this, land owners frequently tack a higher price on flat land than on properties which are moderately hilly. Properly developed, the latter will make a more attractive, faster selling subdivision. Moreover, since subdividers have habitually shied away from this type of land, it is frequently located closer to the center of communities than available flat properties.

Other factors entering into site selection concern the proximity of facilities which will be required to service the subdivision. The optimum of subdivisions would be

**POOR PLANNING and what is wrong with it:**
1. Gridiron street pattern without purpose
2. Heavy traffic within subdivision
3. Angular intersections
4. Non-abutting cross streets
5. Numerous subdivision entrance streets
6. Dead-end streets
7. Small, uneconomical blocks
8. Ribbon shopping district
9. No off-street parking space
10. Stores amid residences
11. Lots not perpendicular to streets
12. Angular lots
13. Small corner lots
14. Deep lots
15. Monotonous building line

**GOOD PLANNING and what is good about it:**
1. Curved street pattern adds subdivision appeal
2. Heavy traffic diverted
3. Safe, perpendicular intersections
4. Few subdivision entrance streets
5. Quiet street
6. Local streets for local traffic only
7. Streets fit topography
8. Long economical blocks
9. Cross walks in long blocks
10. Organized shopping center
11. Off-street parking space
12. Wide corner lots
13. Lots perpendicular to streets
14. Staggered building line
15. Provision for interior park

**GRIDIRON PLAN**
- Number of residential lots: 156
- Size of lots (average): 50 x 100 ft.
- Length of major streets: 1,050 ft.
- Length of minor streets: 4,100 ft.
- Length of cul-de-sac: 3,850 ft.
- Total length of streets: 5,850 ft.
- Total street length per lot: 37.5 ft.
- Cost of public improvements: $46,800
- Cost of public improvements plus park value per lot: $300

**LONG-BLOCK PLAN (with park)**
- Number of residential lots: 169
- Size of lots (average): 50 x 100 ft.
- Length of major streets: 200 ft.
- Length of minor streets: 200 ft.
- Length of cul-de-sac: 280 ft.
- Total length of streets: 4,050 ft.
- Total street length per lot: 24.0 ft.
- Cost of public improvements: $32,400
- Cost of public improvements plus park value per lot: $300

**LONG-BLOCK PLAN (without park)**
- Number of residential lots: 144
- Size of lots (average): 50 x 100 ft.
- Length of major streets: 200 ft.
- Length of minor streets: 200 ft.
- Length of cul-de-sac: 280 ft.
- Total length of streets: 3,400 ft.
- Total street length per lot: 23.6 ft.
- Cost of public improvements: $27,200
- Cost of public improvements plus park value per lot: $192

1 Cost of public improvements includes street construction, utilities, sidewalks, grading, lamp posts, etc., and is assumed to be $8 per linear foot of street. Calculations favor the gridiron plan in that cost of public improvements on its major street (diagonal) would exceed $8 per foot, while cost of the cul-de-sac in the long-block plan would be less than $8 per ft.
2 Park covers 3½ acres and is valued at $1,500 per acre, or $5,250. Value of park per lot is thus $35.
situated within a half-mile of schools, churches, recreational facilities, a transportation center and a shopping district.

If situated outside the half-mile radius, the subdivision may itself contain a shopping center—provided of course that the number of families to be housed and their average annual income warrants it. Provision of a shopping center is not, however, the worry of the average U.S. subdivider: FHA records show that its average subdivision is comprised of only 100 to 145 lots—too few to justify the erection of even one store.

**Platting.** But, site selection is less than half the battle. As evidenced by the chart below, cost of raw land represents only about 17 per cent of the total land and development cost per dwelling. By far the largest single part of this cost (40 per cent) covers what are called "public improvements"—parks, walks, sewers, surface water drains, boundary streets, interior streets, turn-arounds, street lighting, etc. Since the cost of all utilities is dependent (in most cases) upon the length of streets, a separate discussion of utilities per se is unnecessary (see table of unit costs, page 370). Thus, actual subdivision planning logically breaks down into three sections: streets, lots, and parks.

First mechanical task of the subdivider is to determine what part of his property is to be allocated to each of these three uses. More important, he must see that a well-balanced relationship results between them. For large sites (200 acres and more), a ratio of 60 per cent buildable land (lots) and 40 per cent open land (streets, parks, etc.) is the accepted ratio. In subdividing smaller areas, the built-up ratio may be increased. Satisfactory land breakdown for a 200-acre, 1,300 lot subdivision (6.5 lots to the gross acre):

<table>
<thead>
<tr>
<th>1. STREETS</th>
<th>2. PARKS AND SCHOOL</th>
<th>3. BUILDING LOTS</th>
<th>4. STORES</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>20%</td>
<td>57%</td>
<td>3%</td>
</tr>
</tbody>
</table>

*Based on a subdivision of 200 acres, of average topography. 1,300 lots of 3,875 sq. ft. each and providing 3,000 ft. of store frontage. Sixty per cent of the land for building purposes.

Street Pattern. Distribution of these use areas is determined by the street pattern, which also governs to a great extent the marketability of the lots and, in turn, the economic soundness of the subdivision. Streets and the pattern they cut may make or break a subdivision; and if they cut the old-fashioned, unimaginative gridiron pattern they will probably break it. Reason: the gridiron merely produces blocks, it does not add interest, beauty and variation to them. Moreover, due to excessive street lengths, the cost of development will be unnecessarily large. Also, if the property is hilly, the gridiron pattern may require a large amount of expensive cutting and filling and many of the lots will not be readily buildable.

Alternative to the gridiron is the freehand, long-block pattern now practiced by all business-minded subdividers. Its curved streets conceal the monotonous regularity of a flat terrain and enhance the natural beauties of an irregular topography by following contours. And, contrary to general belief, it is usually more economical than the gridiron pattern. Its longer blocks reduce the development cost per lot; and, if it does not produce more lots (although it frequently will) it does produce uniformly more desirable and therefore more salable lots (see page 368). Worth noting in this regard is the fact that a subdivider's profit does not begin until he has sold about 75 per cent of his homesites. If the remaining 25 per cent are "sticky," carrying charges on them may produce a net loss instead of a profit.

More a matter of economy than salability is the determination of block lengths. Short blocks are uneconomical, for cross streets and the utilities under them cost money, occupy valuable building land. The accompanying chart shows that costs per lot of side-street improvements dropped from $92 in an 813 ft. block (two lots deep) to $32 in a 2,280 ft. block of the same depth. Short blocks are the product of the pre-automobile days when prime consideration was given, of necessity, to pedestrians. Today, blocks
may be as much as 1,500 ft. long, but if over 750 ft. they should be divided by a cross walk.

The rectangular block is no more necessary than the short block. A U-shaped unit may better fit topography and a semicircular one often will provide desirable park space. Where the latter is not demanded within the semi-circular, interior lots may be platted and serviced by a cul-de-sac or loop. A comparatively new type of street in U. S. subdivisions, the cul-de-sac, is a popular implement of FHA's Land Planning Division, popping up in practically every FHA-improved plan. It solves handily the problem posed by an irregular shaped piece of property and lops many a dollar from public improvement costs. According to professional opinion, however, this dollar-lopping is greatest when the cul-de-sac's length exceeds 240 ft., but falls short of 360-400 ft. (minimum dimension of the turn-around is set at 30 ft.).

Getting back to the gridiron pattern, all streets serve the same purpose and must therefore be of the same width and construction. On the other hand, streets in the informal free-hand pattern vary in purpose, may therefore vary in width and construction. Result: many of the streets, by virtue of their restricted use may be of less expensive dimensions and materials. While the gridiron pattern may require that all streets be capable of carrying two or three lines of traffic and be paved to a width of 18-27 ft., the informal pattern may make profitable use of 14-18 ft. cul-de-sac and one-way streets which cost about half as much.

Bad habit of subdividers is to reduce costs through the use of undeveloped cross streets. Better educated than a few years ago, the average home purchaser realizes that purchase of a lot on an unfinished street probably means a stiff assessment for street improvements in later years.

Laws. While their gravest errors are made in street layout, subdividers have much to learn about the actual platting of lots. The average subdivider usually overestimates his development, because he believes 1) that he can create more salable (lower priced) lots, and 2) that he can make more money via more houses. But he is wrong on both counts—small lots jam-packed together never made an attractive subdivision—never will. Refutation of the run-of-the-mill subdivider's belief is the proof of England's leading house, Sir Raymond Unwin, that by decreasing street lengths it is just as profitable to build twelve houses per acre as twenty (Arch. Forum, Aug. 1936, p. 88). Reduction of density, however, should not stop at twelve houses per acre—FHA preaches a 6-to-1 ratio.

Also considerably different from those of the past, today's lot-size standards require that for detached houses the width be at least 30 ft., that the length be at least 100 ft. Such are the minimum dimensions for interior lots; corner lots should be at least 10 ft. wider. Reason is that if all lots were, say, 50 ft. wide, a side yard requirement of 5 ft. and a side street building setback of 15 ft. would leave only 30 ft. of buildable frontage in the corner lots:

While these dimensions are considered as general minimum standards, no hard and fast rule can be set. Dimensions will vary according to the location of the subdivision. A 50 ft. lot may not be practicable for low cost housing where land values are high, but in no case should the width go below 30-35 ft. The low cost house is smaller than the average, does not require an average-size lot. However, the real low cost house is a one-story house and, as such, usually requires more land than a slightly higher-priced two-story unit.

Parks. In step with today's demand for increased greensward in urban residential districts, land planners hold that

(Continued on page 34)
In its March issue, The Architectural Forum presented two privately financed rental housing projects in Summit, N. J., as noteworthy examples of one of Building's up-and-coming activities. This month the Forum looks at a more ambitious project in Columbus, Ohio, will soon look further west and southward.

If any project embodies the planning preferences of FHA's Rental Housing Division, it should be Olentangy Village. A $15 million development serving Columbus, Ohio, it was designed by FHA's original chief architect—Raymond C. Snow of Washington, D.C. But Olentangy Village represents more than Architect Snow's first-hand FHA experience; during his past two years of private practice he has added to his design roster with thirteen other FHA-approved large scale garden apartment projects, has done a $13 million business from Lansing, Mich., to Birmingham, Ala.

Site. Year and a half ago Project-Sponsor L. L. LeVeque surveyed the demand for rental housing in the Columbus area and the available properties on which to build. He found both—the latter on the banks of the Indian-named Olentangy River three miles from the city's center. There, for an estimated $800,000 he purchased 65.4 acres that for 30 years had been partially occupied by the Olentangy Amusement Park and was thus well known to Columbusites. Setting aside most of the area for future expansion, LeVeque commissioned Architect Snow to develop 28.7 acres with garden apartments.

As seen on the plot plan (page 372), topography of the site lent itself readily to an interesting building layout. Preserving the natural beauties of the property, Snow set the main building along the 40 ft. well-wooded river bank bluff, set the rest to follow land contours. Studied orientation of the buildings gave most of them a southern exposure. Including shopping center and garages, the structures cover only one-third of the site, leave ample room for parks, tennis courts, and a swimming pool—sole reminder of the demolished amusement park. As an extra attraction, LeVeque dammed the river some distance below the project, thus made boating possible.

Buildings. Architectural style of the project is Georgian Colonial—for the reason that, as evidenced by all his other projects, it is the architect's favorite. The central building of the Village is patterned after the court house at Williamsburg, Virginia. Construction is 8 and 12 in. brick with limestone trim; floors are hardwood on concrete slab; pitched roofs are shingle tile; flat roofs, tar and gravel. A builder of no mean repute (Cincinnati's $7 million USHA project, Laurel Homes, was built by his construction company), Sponsor LeVeque handled all of Olentangy's construction except the sub-let plastering contract.
Within the project's nine residential buildings, Architect Snow provided space for 402 dwelling units, breaking down in size into:

- 1-room apartments: 2
- 2-room apartments: 15
- 3-room apartments: 150
- 3½-room apartments: 132
- 4-room apartments: 82
- 5-room apartments: 18

Original plans called for considerably more one-room units, which were to cater to students and faculty of nearby Ohio State University, but FHA vetoed the idea; reason being that although one-room units are easy to rent, they attract transient tenants, are hard to keep rented.

To serve the 402 families, 198 garages were strung along service streets at the project's northern boundary, following the planners' practice of using such elements as protective screens from any nuisances that may develop on uncontrolled nearby property. A plentiful supply of off-street parking space was provided, to compensate for the fact that garages are unhandy to some apartments near the river.

A lucrative and uncommon feature of the project is the sizable shopping center which flanks the main entrance. Providing quarters for eleven stores with a combined total of 38,973 sq. ft. of floor space and four upstairs offices, it also serves to screen the apartments from the busy thoroughfare. Based on no market survey, plans for the shopping center were expanded periodically in step with demand.

To make the shopping center attractive to a wider group than the tenants of the Village, shopper parking space was provided on either side of the entrance to the Village. Any overflow will be handled by a large parking lot at the end of the store section on LeVeque's yet-to-be-built-upon land. Today, the center's tenants include a grocery, drug store, dry cleaner, barber shop, beauty salon, tavern, florist, bakery, service station, a & i offices for three doctors, one architectural firm. The project's rental offices are also in the shopping center.

Cost. Reflecting no noteworthy attempts at construction cost reduction, the total cost of the project was $8,803,000 or, excluding the $815,000 shopping center, about $8,388 per dwelling unit, $1,090 per room. The buildings alone cost $8,163,000, landscaping cost $86,000, and utilities, $870,000. Thanks to an FHA-insured mortgage, Sponsor LeVeque had to ante only $478,000 of the $8,215,000 capitalization. The 7½ per cent balance, $7,735,000, was lent by the New York Life Insurance Co. at 4½ per cent interest. As there are 1,574 rooms in the project, the amount of the mortgage per room—$1,762—is well within the $1,550 limit set by the National Housing Act under which the project was built.

Operation. Monthly rentals for the Village range from $30 to $55 per month, average

**Salient Feature** of Architect Snow's floor plans is segregation of living and sleeping quarters. Thus, in none of the basic units pictured above and right does circulation between living room and bathroom involve the bedroom. Yet in all of them the bath is set apart from the living quarters. However, the resultant sacrifice in space is apparent. Layout of the buildings (below) required six such basic units of which the L-shaped one (right) was used most often—41 times.

**AIR VIEW** shows commendable adaptation of buildings to site.
excluding heat and hot water—which are provided by a boiler room in each of the seven main buildings.

Most other tenant expenses may be lumped under the head "electricity," for all kitchens are completely electrical. If LeVeque's estimate proves accurate, average electric bill for cooking, lighting, and refrigeration will not exceed 82.25 per month. Reason: LeVeque engineered a special metering agreement with the local utility company whereby power will enter the project through a single meter, be metered by the management to each tenant.

Assuming 100 per cent occupancy, Olentangy Village will produce a gross rental income of $330,000 per year from dwelling facilities alone. Store and garage revenue will push the total higher.

Something of a showplace, Olentangy Village has had its full share of local attention. Its grand opening at mid-March was heralded in one paper by an eighteen-page special supplement, was attended by 15,000 sightseers. Fortnight ago, two months after their official opening, the apartments were 65 per cent rented, the stores and offices, 100 per cent. Leases on the former run for one year, on the latter from three to ten years.

Anticipating a full house within a month or so, Sponsor LeVeque already has plans for the expansion of Olentangy Village. First apartment annex will be to the south of the present development (see plot plan), will contain some 350 dwelling units; the next, to the north of the shopping center. Also on the fire and probably the first move is the extension southward of the money-making shopping center. Whatever the next building move may be, Architect Raymond C. Snow will plan it.

**CONSTRUCTION OUTLINE**

**FOUNDATION:** Walls—12 in. brick. Cellar floor—5 in. concrete slab. Waterproofing—integral, Truscon Steel Co.

**STRUCTURE:** Walls—8 and 12 in. brick, limestone trim. Interior partitions—3 in. gypsum block; stair halls—6 in. terra cotta. Floor construction—reinforced 5 in. slab. Ceilings—plastic oil paint on concrete.

**ROOFS:** Wood rafters; pitched roofs covered with Ludowici-Celadon Co. shingle tile; flat roofs covered with 20-yr. Bonded tar and gravel.

**CHIMNEYS:** Brick with fire brick lining.

**SHEET METAL WORK:** Flashing, gutters and leaders—16 oz. copper. Ducts—galvanized iron.

**INSULATION:** Attic floors—Ludowici-Celadon Co.

**WINDOWS:** Sash—wood, double hung, J. E. McNally Lumber Co. Glass—double strength, quality B. Screene—copper mesh.

**STAIRS:** Steel covered with asphalt tile.

**FLOOR COVERINGS:** Main rooms—oak laid in mastic, E. L. Bruce Co. Kitchen and bathroom—linoleum covered. Public halls—asphalt tile.

**WALL COVERINGS:** Bathrooms—Marlite, Marsh Wall Products, Inc.

**HARDWARE:** Interior and exterior—Norwalk Co.


**LIGHTING FIXTURES:** By Chase Brass & Copper Co.

**KITCHEN EQUIPMENT:** Range and refrigerator—Westinghouse Electric & Mfg. Co. Sink and cabinets—Whithead Metal Prod. Co.

**LAUNDRY EQUIPMENT:** Sink—Crane Co. Washing machine and drier—Thor.


**PLUMBING:** Cold and hot water pipes—brass. Valves—Jenkins Bros.


Integration of Olentangy Village's dwelling facilities with its shopping center was accomplished by styling them both Georgian Colonial. Gateway to the Village is the shopping center itself. Although more elaborate in architectural detail than the apartment buildings, the shop fronts reflect commendable sign restriction (below, right). Note the stone fronted private entrance to second floor offices at the left of the store. Kitchens number 402, are serviced entirely by electricity, make the Village the largest all-electric project in the country.
HOME BUILDING GOES INDOORS, uses automobile and furniture construction tricks. A house a week at $2,980 f. o. b. Seattle.

The automobile trailer excepted, most attempts at mobile housing have quietly followed the faltering footsteps of miniature golf and mahjong. But, just as quietly, a recent stab at mobile housing has been amassing to something. Today in Seattle, Wash., the General Housing Corp., is pushing one complete house per week from its 300 ft. conveyor belt, is selling them even faster. Well-designed, well-built and priced at $2,980 f.o.b., these factory-fabricated, FHA-approved houses have earned a prominent place among Home Building's low cost products.

Although too young to be judged an up-and-coming industrial concern (its factory has been in operation only five months, has produced eleven houses), General Housing Corp.'s construction technique, the quality of its product and its warm local reception make it worthy of attention.

Year ago the Corporation was only an idea in the fertile mind of 43-year-old George Wellington Stoddard, one of the Northwest's prominent architects and unsung designer of the "ideal American home" which the Federal Housing Administration chose to grace its first poster. Stoddard's idea was to supply sound housing for the low income group and to do it by paring construction costs through mass production, mass purchasing power and standardization. A more newsworthy aspect of that idea was that the houses be built in comparatively large units (of several rooms each) in a factory, then trucked to the site for assembly.

Before putting his notions on paper, however, Architect Stoddard solicited the woodwork experience of J. Donald Fuller, secretary and manager of a local millwork company, and the backing of a small group of Seattle business men headed by a local lumberman, Frank C. Reed. With the construction advice of Woodworker Fuller, Stoddard drew plans and specifications for his prefabricated, mobile house. With the financial aid of the business men, he formed the General Housing Corp. with Lumberman Reed as the No. 1 stockholder, and leased a vacant plant in south Seattle in which to operate.

Design. Profiting by the experience of mobile housing pioneers (Arch. Forum, July 1937, p. 33), Stoddard decided to build his houses of conventional frame construction (not of revolutionary copper panels as did Baltimore's Copper Houses, Inc.); further decided to build them in small enough parcels to be easily moved, but large enough to be quickly assembled (not in one 32 ft.-wide piece as did Peoria's R. G. LeTourneau, Inc.).

The basic four-room house is divided length-wise into two equal sections each measuring 12 ft. in width, 32 ft. in length. These halves are constructed individually—are not fastened together until they reach the site. A still larger house (five rooms and garage or six rooms) may be obtained by the simple addition of one-room units to either or both ends of the basic plan.

In exterior treatment, the house is equally simple. Variation in appearance from that pictured opposite is obtained by minor changes in fenestration (corner windows, for instance), floor plans and entrance details. Also, shifting the front door to the end of the house, makes the plan readily adaptable to a narrow lot.

Production. More significant than its design, however, is the construction and production of the Stoddard house. The 300 x 110 ft. plant of General Housing Corp. is undoubtedly the closest thing to a factory that the U. S. has seen. And, put together like furniture, the houses are undoubtedly better built than most houses in their price bracket—even better built than many in higher brackets.

Costs are minimized by ordering all stock to specifications, thus doing away with cutting and fitting in the plant. And, of course, factory fabrication itself is a prime cost saver. It permits the widespread use of jigs and power equipment, eliminates much of the craft union inefficiency and interference prevalent in field operations (especially in Seattle).

Construction in General Housing Corp.'s plant follows closely the production-line system of the automobile industry. In this case two steel rails laid 20 ft. apart comprise the conveyor belt. The house sections are started on steel wheels at one end of the track, are pushed through six operation stations and a week later roll off the other end complete in every detail and ready for delivery to the site.

First operation on this production line is formation of the floor section which takes place on a bed formed by two steel angles with electric screw-drivers. The reenforcing properties of these long steel angles are found in low cost houses.)

(*Not to be confused with Howard T. Fisher's General Houses, Inc.—long-established Chicago prefabricator.

"Last month The Architectural Forum briefly described General Housing Corp.'s prefabricated house as one of the existing solutions to the low cost house problem (Arch. Forum, April, 1939, p. 380).
1. Bird's-eye of General Housing Corp.'s seven-house production line. 2. Nearly complete, these houses are ready for insulation. "Addable units" are built in the factory's bays. 3. (Upper picture) a turnbuckle secured to a double joist will pull the house-halves together. (Lower picture) Joists are aligned by and screwed to 32 ft. steel angle piece. Note dadoed frame construction. 4. Pre-assembled electrical and plumbing equipment fits handily into notched structural members. 5. Interior ready for dry wall finish. 6. Abutting walls are finished only on the interior, require no insulation. Note wheel and track of production line in foreground, heating duct connection in attic. 7. A completed house-half moves out at night on two four-wheeled dollies. 8. The halves are pulled together, make a house 24 ft. wide, 32 ft. long. A demonstrator, this house has no foundation.

**COSTS:**

<table>
<thead>
<tr>
<th>BASIC UNIT</th>
<th>ADDABLE UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 32,980</td>
<td>B 425</td>
</tr>
<tr>
<td>C 450</td>
<td>D 705</td>
</tr>
<tr>
<td>E 235</td>
<td></td>
</tr>
</tbody>
</table>

**HOUSE with addable units B and C**

**MAY 1939**
will eventually pull the house together, are bolted to double joists. Final step at the first station is application of the subflooring—panels of ¾ in. five-ply plywood measuring 4 x 8 ft. and coated on the under side with a resin-base paint.

At station No. 2 the house sections are framed. But, unlike conventional construction methods, all exterior walls and partitions are built in a horizontal position using the completed floor sections as level worktables, are then raised into position. Also unlike conventional home construction, all structural members are coated at their joints with casein glue, clamped in place and finally nailed. Even the face of each stud is covered with glue before the 3/16 in. plywood sheathing is applied. Rigidity of the frame is further accomplished by dadoing all studs, joists and rafters into the plates. Claim is that due to these adaptations from furniture manufacture, the resultant house is earthquake resistant.

At the next station along the production line, building paper and cedar drop siding is applied to the exterior, cedar shingles to the roof. Door frames, exterior trim and chimney hangers are also put in place. At the same time the company’s plumbers and electricians install their pre-assembled roughing-in material.

After the latter has been inspected by city officials, the house sections move to station No. 4 where all ceiling and exterior walls are insulated. Partitions and interior walls are surfaced with wallboard, doors and windows are hung, and all interior trim, hardware and finish flooring is provided. Particularly noteworthy are the screens which are also installed at this station. Called “Slide-Way” and patented by Woodworker Fuller, they are located inside the wood casement windows and slide into the wall cavity when not in use.

At station No. 5 the house is completed. The operation includes installation of plumbing and electrical fixtures, laying of floor tile, all sheet metal work and painting. General Housing Corp.’s painters use a specially prepared and reputedly better material that can be used for field application. Reason: General Housing’s painting is done under the controlled “weather conditions” of a factory.

Also at station No. 5, the chimney which has been cast previously in sections (tile flue lining surrounded by 4 in. of re-enforced cinder concrete) is put together. Heat ducts, previously installed in the attic, are insulated and connected with the heating unit. The latter may be either gas or oil fired and is equipped with fans, filters and humidifiers.

After installation of kitchen equipment and application of other finishing touches, the two house sections are finally moved to station No. 6. At this point they are completely finished and ready for immediate purchase and occupancy.

**Delivery.** Transportation of the house sections from factory to site follows much the same procedure as does ordinary house moving; that is, the sections are tailored for moving, the operation is without the usual headaches, House sections are jacked up at the end of the production line, placed on two 12 x 14’s which are in turn supported by two four-wheeled dollies. In trailer-like fashion the section is then hitched to a truck, pulled to the site.

Since width of the “trailer” is 12 ft. (4 ft. over the legal limit for the State of Washington), a special permit must be written for each shipment. However, height of the “trailer” just clears by 1 in. the minimum bridge headroom set by

(Continued on page 36)

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**THE CONCRETE BLOCK**

**takes step toward standardization.**

A **new production method.**

Building’s ugly duckling, the concrete block, has long been struggling to turn into an architectural swan, and has lately shown signs of succeeding. Used for many years in garages and other prosaic structures, it has blossomed out with new surfaces, new shapes and has aroused new interest in its design possibilities. But like so much of Building’s complex structure, the manufacturer of concrete blocks is still in the duckling stage—produced most often by small, local, uncoordinated units.

There are 6,600 manufacturers of concrete blocks throughout the country, a phenomenal number justified by the fact that it is uneconomical to ship blocks long distances. Most of them are located beside sand pits convenient to a highway, and serve only local needs. Results of these handicraft methods are: 1) local variations in shapes and sizes, and 2) lack of uniform quality.

Month ago, however, a newsworthy company was organized for the ambitious purpose of streamlining the industry through block standardization, not by producing blocks itself but by marketing patented manufacturing equipment. Its program would, besides various shaped blocks, be a channel slabs, concrete planks, insulating tile, veneering, curbs, sidewalks, and fence posts. Also, a wide variety of integral finishes can be applied. Technique of “Cemenstone” manufacture is based on three principles—mass production, vibration and heat. Equipment is so organized that the cycles of manufacturing proceed continuously and can produce several shapes in one operation.

The new equipment consists of special molds contained in a heavy steel framework that rests over a steam chamber capable of maintaining the temperature at 160° Fahrenheit. The mix is fed into the molds by a hopper riding the framework. While it is curing, the concrete is agitated by vibrators which produce a dense and uniform texture and speed hardening. They also move along the steel framework.

Behind “Cemenstone” is the newly organized Cemenstone Corporation, which has as its chairman President W. P. Withower of the Blaw-Knox Co., as its president Leslie M. Johnston, former vice president and general manager of A. M. Byers Co. Originator of the method, experienced construction superintendent Albert Henderson, is consulting engineer. Since the first company to manufacture “Cemenstone” has only recently gone into operation, it remains to be seen how the product and production principles will affect the industry. Fact remains, however, that Cemenstone represents a step toward much-needed standardization.
OZENFANT

UPON BEAUTIFUL FORM OR DO YOU LIKE

Mushrooms?  Eggs?  Snails?

Too much incense and too much nonsense have left us almost unable to say what the word “beauty” means.

Besides, the word beauty has been so often misused in unworthy associations, that most intelligent people hesitate to use it at all.

However, if there are forms which appear beautiful to us we must believe that there is such a thing as beauty.

Mr. But: But no two men are alike so beauty must be a relative term.

—Men are not alike, not quite alike, but much more alike than different. Proof: Have you noticed in the country, in the mountains, in the woods, at the seashore, where there are millions of flowers, plants, stones and shells of all kinds, everyone picks the same flowers, fills his pockets with the same stones and the same shells: the beautiful ones.

Mr. But: But why?

—Because everyone feels a need for beautiful forms, a basic human need.

The artist’s role in society: to produce beautiful forms. Beautiful art is made of forms for which we feel an instinctive need.

Mr. But: But we sometimes collect monstrosities; curiously ugly objects.
—Certainly: there is also art in ugliness, very fashionable today. It gets its strength simply from running counter to our normal desires. But all the great expressions in art, the Sumerian, the Egyptian, the architecture of Greece and Rome, certain examples of contemporary architecture and good Negro sculpture are based on the satisfaction of our need for beautiful forms.

Mr. But: But this means that beautiful forms are beautiful if they answer normal, natural desires in us?

—Yes. These desires are the bases of the great art in all periods in all places.

Mr. But: But how do we recognize a beautiful form?

—By looking at it. There are beautiful forms and ugly forms as there are good odors and bad odors. To be sure, certain depraved tastes enjoy ugly sights and nasty smells. To test the quality of a form, you need only ask yourself if you would be tempted to pick up a shape of this sort at the seashore—if you would want to put it in
your pocket. If these facts, simple as they are, were always kept in mind, a real step toward the understanding of art would be made: the most beautiful works of art are a result of the symphonic organization of beautiful forms. And a beautiful form is a beautiful form no matter how it was produced—by nature, or by the artistic or mathematical imagination.

I do not ask the snail, or the genie of the mushroom, the hen, and Mr. Freyssinet if they are artists—they satisfy my need for beauty. The rest is merely a question of title. Forms that express resistance, tension and growth are usually beautiful; they make us feel the functioning of forces, and forces are nature. The form in nature expressing resistance (the egg), or growth (the snail), or the same forms employed in painting or sculpture, no matter what "body" they make a part of, have the power to put us in communion with nature by making us feel and understand its functioning, its life.
THE EGG-THEME IN ART: EXAMPLE

WHY HAVE ARTISTS CHOSEN THIS THEME?

1st. BECAUSE THE EGG-FORM IS A BEAUTIFUL FORM.

2nd. BECAUSE MAN HAS AN INSTINCTIVE LONGING FOR COMPLETENESS, AND THE EGG-FORM SATISFIES THIS NEED; IT GIVES US A FEELING OF THE COSMIC TOTALITY.

LITANY

THERE ARE UGLY IDEAS AND BEAUTIFUL ONES.

THERE ARE UGLY ACTS AND BEAUTIFUL ONES.

THERE ARE PLENTY OF UGLY PICTURES AND SOME BEAUTIFUL ONES.

THERE ARE UGLY WOMEN (TOO MANY) AND BEAUTIFUL ONES.

THERE ARE UGLY MACHINES AND A FEW BEAUTIFUL ONES.

THERE ARE MANY UGLY MACHINE-MADE OBJECTS AND SOME VERY BEAUTIFUL ONES.

THERE ARE MANY MORE THINGS STILL, NEITHER UGLY NOR BEAUTIFUL: NIL.

Chirico 1917.

Brancusi 1922.
WHAT IS ART?

A WORK OF ART OUGHT TO BE DETERMINED BY AN ELEMENTARY FORM-LAW, A SORT OF PRIME GENERATIVE CELL WHICH GIVES A WORK ITS ORGANIC EXISTENCE—GIVES IT CHARACTER. THAT IS WHY WORKS OF NATURE, OR OF OUTSTANDING ENGINEERS APPEAR TO HAVE SOMETHING IN COMMON WITH WORKS OF ART. THEY ARE ORGANIZED BY THE TECHNICAL REQUIREMENTS OF CONSTRUCTION, THAT IS TO SAY THEY ARE DETERMINED IN THE FIRST PLACE BY A MATHEMATICAL FORM WHICH IS EVENTUALLY TRANSLATED INTO A "MATERIAL" FORM.

BUT ONE DUTY OF ART IS TO BRING VARIETY INTO UNITY WITHOUT DESTROYING ANYTHING OF THE UNITY: THEME AND VARIATIONS. TRUE FOR ALL ART IN ALL PERIODS.

IF HUMANITY HAS CHANGED, IT HAS CHANGED VERY LITTLE IN ANYTHING THAT CONCERNS ITS SENSIBILITY AND ARTISTIC PSYCHOLOGY: THE PROOF IS THAT EVEN PREHISTORIC WORK OF ART GIVES US SATISFACTION. THIS CONSTANCY IS VERY FORTUNATE; WITHOUT IT ART WOULD BE MERELY A FASHION—GOOD ONLY FOR ONE SEASON, ART ON THE CONTRARY PLAYS OVER A KEYBOARD OF HUMAN CONSTANTS.

THERE ARE TWO KINDS OF ENGINEERS:
1st THOSE WHO ARE SATISFIED TO EMPLOY A USEFUL FORM.
2nd THOSE WHO ARE ABLE TO INVENT A FORM AS BEAUTIFUL AS USEFUL.

—YOU MEAN THAT A GREAT ENGINEER SHOULD ALSO BE AN ARTIST?
—YES, AND AN ARTIST OUGHT ALSO TO BE AN ENGINEER, THE MORE, THE BETTER.

MURAL PAINTING BY OZENFANT (1926),
OR "FIND THE EGGS."
SUNILA: FACTORY AND COMMUNITY
By Alvar and Aino Aalto
The Suntila pulp mill (1) is on the island of Poyinen, in the south of Finland, at the head of the Kymi river, down which timber is floated from many central waterways. The factory buildings, mostly of reinforced concrete, house the process of cleaning, cutting the wood, pulping and rolling. A power house, a chemical plant and the administration building complete the unit. The entire housing of managers, engineers (5), foremen and workers (4) is on the mainland where a central heating station (2), Finnish baths (3) and a shopping center are provided. The foremen and workers are housed in two-story buildings, located in groups on high, rocky ground, overlooking low land given to individual gardens. Each building contains 24 two- and one-room units.
Five row-houses for the engineers, covering 13,068 sq. ft., are planned to provide a maximum view and privacy. Each house has a small vegetable garden near the entrance and an enclosed lawn at the rear. The construction here is the same as in the workers' houses: bearing party walls and frame exterior walls.
The architect Alvar Aalto
REBBIO A SATELLITE TOWN FOR INDUSTRIAL WORKERS

By A. Sartoris and G. Terragni

Left: General Plan of the section under construction: 1, one-story buildings with two-room units; 2, one-story with three-room units; 3, two-story buildings with two-room units; 4, two-story with three-room units; 5, six-story buildings with two-room units; 6, six-story with three-room units; 7, school; 8, shopping center. Above: Reb- bino and the town of Como.
The plan of Rehhio at its present stage provides 1,429 housing units of two and three rooms. It includes a community hall, theater, church, kindergarten, elementary and vocational school, a stadium, swimming pool, hospital and shopping center which will also serve the neighboring communities. Orientation of houses: East-West. Distance between two rows of low houses: 71 ft.; between six-story buildings: 170 ft. Each housing unit has a private garden facing west, 36 ft. deep.

Future expansion of Rehhio is provided west of its shopping center.
"Painting With Light" is an old chapter of human activity. We have documents about antique illumination for theatrical performances in which colored glasses, prisms, etc., were used. Centuries later the magic lantern appeared—fireworks, the light effects of the baroque opera; and, later still, different projects for a color organ. Today, in light, from photography to television, we have more sources for a new art form than at any other period of human history. But unless we learn to clear our minds of the old, traditional ideas of painting, not even the work of talented painters will reach the level of a genuine artistic creation.

It is the general opinion that manual painting is the peak of optical creation. Its basic significance is that different pigments reflect and absorb certain parts of the spectrum. So far as pigments possessed these qualities they were used for the creation of an optical illusion which was actually similar to the light effects which solid bodies performed. Such a three dimensional object showed, if normally lighted, a plastic shape through its lighter and darker shading, and the painter had only to imitate the different surfaces of the solid object by mixing different pigments. However, this manual effort never could repeat the same radiant effect because the direct reflection of the object had always a more intensive value. We call the procedure of traditional painting "mixture by subtraction."

The term implies that each new mixed color will be darker than the previous color by itself. This can clearly be seen from watercolors. Each layer darkens the previous one; in other words "it subtracts light." However, besides these primary pigments there are three other primaries, the light primaries, and in the new art of painting with light, they are going to play an important part. They are the red, green, and blue of the spectrum. We call the mixture of light primaries "mixture by addition" because, contrary to the case in pigments, the resultant color is lighter than each of the component colors. We can see this when we throw different lights from different filtered projectors on one spot of a screen. A mixture by addition of green and red lights creates yellow. However, the mixture by subtraction of green and red pigments produces not yellow but an olive brown.

As early as the close of the last century the pointillist painters, Seurat and Signac endeavored to create an impression of radiant yellow sunshine by the use of thickly sprinkled red and green pigment particles on the canvas. They adduced in support of their theory evidence of a discovery made in 1869 by Ducos du Hauron that the human eye splits the colors of the spectrum, red and green, into minutest points producing a yellow to the vision. Aristotle, also, knew that colors in juxtaposition will mix in the retina when seen from a distance. We find this principle applied in painting as early as the Florentine and Venetian pictures of the fourteenth and fifteenth centuries. Fra Angelico and Botticelli used a first layer of thin coloring for the figures of their paintings, for instance green, and then covered this green surface with innumerable fine red lines; the result was an infinitely spiritualized whitish-yellow flesh color.

Rubens used the optical energy of the "turbid" medium in order to obtain flesh colorings and transparent blue shadows which could not be produced by mixtures of pigment. Rubens painted on a white ground thickly sown with black lines—making the outlines and deeply shaded portions of his model in brown and going afterwards over the whole with a creamy, translucent, pinkish white. The result was a radiantly transparent orange rose, a perfect flesh color with bluish transparent shadows.

Goethe gave us the physiological explanation for all this in his anti-Newtonism theory of coloring in which he established that black through a "turbid" medium appears as blue and light gives us yellow-orange up to yellow-red.
"Turbid" means layers of transparencies or translucencies. But not only the Old Masters worked in this way, employing subjective results of optical effects; Van Gogh, applied color so thickly that the pigment appeared as a relief; the brush strokes created shadows and the edges of the strokes were touched by light. Thus light and shadow was drawn into the picture as a determinative, qualitative factor and an effect was obtained similar to that aimed at by the Florentine. Cézanne carried this research work one step further. He was less interested in the representation of radiant surfaces than in the subtle qualities of colors to perform movements forwards and backwards, up and down, centrifugal and centripetal, etc. He created with these a new spatial representation as well as a new painting quality.

A psychological experiment made at the University of Wisconsin gives a clear explanation how color is able to change sizes. Black, white, yellow, green and blue cubes of the same sizes have been shown each beside the other. The white cube appeared to be the largest, black to be the smallest. Yellow was larger than green, and blue was smaller than green. The same phenomenon can be expressed otherwise. The white cube, being the largest, appeared to be the nearest to the spectator, the black, being the smallest, appeared to be the furthest away from him. This means that if a painter would use these colors he would be able to change their experimental characteristics with certain manipulations. The constructivists' work often offers the example that black for instance stands in front of white, etc. The after images and the superimposition and mirroring, the innumerable lens effects alone! I believe it is possible, but the purely automatic harmonies which are no longer created by pigments but by light projection will probably have to undergo a process of step by step development of artistic appreciation. We are so accustomed to the old form of manual painting that we are not yet able to see that later painting may become a "machine painting" without lowering its spiritual level. The technique as part of the creative process is only important inssofar as it must be controlled at every stage of production. Besides this, it does not matter at all whether the result itself is achieved by manual or machine operation.

Of course the pedagogic value of the manual pigment painting will not be denied. But this painting will be no more the only art expression. Photography is already a proof. We have to observe its form, its creative process, the superimposition and mirroring, the innumerable lens and prism effects, the mechanical and chemical distortion of the surface, the light flooded planes, the "chiaroscuro"
in the finest gray graduation. Then we know that our wish to express ourselves with optical means can only be satisfied by a thorough knowledge about light. We must become familiar with colorimetry, wave lengths, purity, brightness, excitation of light, and with the manifold possibilities of the artificial light sources. Optical illusions, changes in size, automatic complementaries, surrounding effects of negative shapes, of hue, chroma and value are already in use. In addition we experiment with polished surfaces, with transparencies and translucencies which allow a combination of pigment and direct light effects.

The next step will be the conscious use of reflexes, solid and open shadows, mirroring refraction with prism and grating, polarization and interference of light.

Since the Eighteenth Century many persons were working in this direction: Pater Costel, Hoffman, Rimington, Serjabin, Hirschfeld-Mack, Thomas Wilfred and Alexander Lazzlo. They all have experimented in the color organ. Viking Eggeling has been the pioneer for the abstract film. There should be mentioned also other forerunners of light display: gigantic light parades of battleships, projectors, search-lights, skywriters, changing light-pictures, floodlight, luminescence, phosphorescence, ultra-violet, infrared, cathod, and polarized X-rays.

The work of the future lies with the light engineer who is collecting the elements of a genuine creation. Great technical problems will be solved when the intuition of the artists will direct the research of engineers and technicians.

It is premature to go into details yet. But one thing is clear—that forthcoming experiments, the study of the physiology of the eye, the physical properties of light and the introduction of new technical means with their “automatic” and “mechanical harmony” will play a very important part.

Consequently we must never cease observing the simple or rich phenomena of light and color which are offered by the daily routine at home and on the stage, in the street and in the laboratory—in our physical and chemical apparatus.

Finally—it seems to me that we should direct all our efforts like the Dadaist Raoul Hausmann toward the creation of an optophonetic art which one day will allow us to see music and hear pictures simultaneously.
Have you considered the Beauty of "HM" Types of Fenestra Steel Casements in the Small Colonial House?

In the Colonial house sketched, you see Fenestra Steel Casement Windows of the "Horizontal Muntin" type (designated as "HM" for brevity). In this type, the vertical muntins are omitted. Horizontal lines are stressed. The effect is pleasing, is it not?

Fenestra Bonderized Steel Casements provide many desirable advantages for better living: more daylight, better ventilation, safe cleaning, easy opening, better screening, greater weather-tightness, with lower first cost, and lower upkeep...Write for details.

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BONDERIZED STEEL CASEMENTS...INSIDE INSULATING WINDOWS...INSIDE SCREENS
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MAY 1939 33
GOOD TASTE SELLS HOUSES

Using Armstrong's Linoleum is your assurance of good taste in floors for any room or decoration scheme.

A house or an apartment must be in good taste to rent or sell today. Prospects have been educated by magazines, movies, and newspapers to appreciate fine living and good design.

And they've been educated by Armstrong's advertising to appreciate fine linoleum floors. The mere mention of the name "Armstrong's Linoleum" takes you over the taste-hurdle right away. Prospects know that name. When they see a beautiful floor effect created with this nationally-known linoleum, they're sold.

When considering this modern floor in your plans, remember that its five thicknesses and over 200 patterns provide a wide scope of design. Remember also that with all its richness of appearance and long-lasting quality, Armstrong's Linoleum is reasonable in cost and easy and inexpensive to install. Your prospects will like it because it never needs costly or troublesome refinishing.

Send for Floor Design Book

There are many suggestions for floors in a color-illustrated book which we'd like to send you free. Write Armstrong Cork Company, Building Materials Division, 1203 State Street, Lancaster, Pennsylvania.

LAND DEVELOPMENT (Continued from page 370)

modern subdivision of any size is complete without provision for some park or recreational area. It may be a small "island" dividing a street, or it may be several acres in the center of a super-block.

Frequently, creation of a park is a move toward economy. While it may replace several lots, it will increase the value of other lots, help sell them—especially when inter-subdivision competition is keen.

(Note reduction in costs per lot through introduction of park space in a hypothetical subdivision, page 368. Result will be lower cost houses and lots.) Furthermore, it is often cheaper to set aside rough, wooded low-lying areas than to try to develop them. The banks of a stream, or the corner of a site which does not lend itself to facile platting may best serve as park space.

It is possible that the local government may assume responsibility for maintenance of the park once it is developed. This failing, a community organization must be set up for maintenance of the park.

Professional Advice. From this high-spot hitting analysis of the many factors which subdividers must consider, it is apparent that good subdividing is seldom a matter of chance. It results only from careful consideration of these factors and a resulting site plan which produces the economies necessary to good business and creates an attractive, integrated neighborhood necessary to the protection of real estate values.

Frequently the task is too much for the untutored builder or land owner, and FHA recommends that he retain a competent subdivision designer for the purpose. But, FHA itself offers many a poignant suggestion, is without doubt the most active force behind today's movement toward better land planning.

Aside from the paper analyses last year of 927 subdivisions (comprising 29,000 acres, 96,000 lots), FHA's Land Planning Division held more than 1,000 consultations with the sponsors of developments and personally inspected their sites. Throughout the past three years land planning conferences have been held in 80 cities, have been attended by some 15,000 subdividers, builders, bankers, and city officials. Growth in volume and importance of this FHA unit's work has been such that five months ago it was taken from the "section" rank, made a "division." Thus elevated, the Land Planning Division under the able guidance of Director Seward W. Mott will better serve Home Building by directing its increased activities "toward the decrease of mortgage risk, better business for developers and mortgages and a safe investment for the home buyer in attractive, stable communities."
COMPLETION...DAYS SOONER

When Home Loans Are Approved Promptly!

YOU don't have to put up with the red tape that so often delays home loans! Your local Savings or Building and Loan Association will frequently have an approval for you 48 hours after the application is filed! Construction money moves fast, too. For this business was built on prompt, efficient service!

Years of experience have keyed our procedure to your requirements. Savings, Building and Loan Associations have a background of 10,500,000 American homes financed soundly, conveniently and promptly. For over 100 years our group has been America's most popular home financing system.

Records like these aren't easy to establish. Yet institutions like ours consistently finance more home loans than all other financing institutions put together. Here are the reasons why—

1. Prompt service, without red tape, all the way through.
2. Convenient, easy-to-understand loans paid back like rent on a monthly-repayment, long-term plan.
3. Friendly service where a loan means a good neighbor, not just a number.

In addition, savings, building and loan associations keep local dollars at home. We help make jobs for local people by fostering local saving to encourage local home ownership.

You be the judge. Try this source of home financing money. See for yourself what "time-saving efficiency" means to you and the people you serve. Let a member of the United States Building and Loan League give you facts and details about this prompt, red-tape-less home financing service.

ARCHITECTS—Our services include facilities to handle all types of home loans whether they be for new building, buying, remodeling or refinancing. Call us for information. You'll like our quick, friendly service.

Your Local SAVINGS OR BUILDING AND LOAN ASSOCIATION

When you support Your Local Savings or Building and Loan Association—You help local business!
Kinnear Rolling Grilles

Strategically located in corridors, Kinnear Rolling Grilles prevent crowds at auditorium events from "taking over" the entire building. Where gymnasium and auditorium are combined, they are ideal for closing off the stage during gym activities.

They are excellent for use in stairways, as gateways in athletic stadiums, and for complete, convenient protection in windows and doorways. Their application is almost unlimited!

The Kinnear Rolling Grille is a neat, rugged network of steel bars and pressed steel links. It defies intrusion without obstructing light, air or vision. Coils out of the way above the opening when not in use, but can be lowered and locked in place in a few seconds. Operating vertically in heavy steel end-jambs, it requires no usable space, and when desired, can be mounted with mechanism concealed. Kinnear Rolling Grilles are built in any size, of any metal, for either manual or electrical operation. They're always custom built, assuring easy, economical installation in any opening. Write for complete information.

Agents in All Principal Cities

The KINNEAR Manufacturing Co.
1640-40 Fields Ave. Columbus, Ohio
Factories: Columbus, Ohio, San Francisco, Cal.

INDOOR BUILDING

(Continued from page 376)

the State at 14½ ft. To cover delivery of the basic house, General Housing Corp. adds to its $2,980 f.o.b. price $125 for shipments within Seattle's city limits and an extra $1 per mile for shipments outside the limits. Freight rate within the city limits on "addable units" is $85 each. Orders are accepted for delivery within 100 miles of the factory.

Foundations and utility connections for the house are supplied by the purchaser, but are made according to plans and specifications furnished by the Corporation. In the city of Seattle, utility connections cost about $85, a no-basement foundation costs another $85, a full basement about $845. If the latter is used (or even a partial basement), the heating and laundry equipment may be located in it.

Where such is the case, a removable panel in the floor of the multiple-use room may be lifted to give access to a basement stairway furnished by the Corporation as an accessory.

Assembly of the house sections at the site is a simple operation, the cost of which is included in the Corporation's delivery fee. The two halves of the house are pulled together with turnbuckles on tie rods and are bolted to the foundation. Wiring is connected by use of twist locks, and a sheet metal collar connects abutting heat ducts. Evidence of ahead planning is the fact that all plumbing is concentrated in the rear half of the house, thus obviating plumbing connections during assembly.

Merchandising. To date, selling his houses has given General Housing Corp.'s President Stoddard no worry. They have been selling themselves. Several orders for as many as 40 houses each have been rejected due to the factory's limited production capacity. Mere rumor and word-of-mouth publicity has attracted inquiries from as far east as Long Island, as far west as the Hawaiian Islands. One came from a point 500 miles in the interior of Alaska.

Doubtless these inquiries originated with Stoddard's only publicity stunt: In the latter part of August, 1938 the Corporation's experimental house was displayed for two weeks in the middle of Seattle's much-trafficked University Street. There, by actual count, 25,000-odd people ambled through the house, listened to six hostesses describe its building materials and methods. And, when the house was carted off to a suburban lot and re-opened for inspection, 15,000 to 20,000 additional visitors looked into what had become Seattle's most-talked-about house.

(Proof that Stoddard's house is well built and workable!)

Send for full information to THE MASTER BUILDERS COMPANY
Cleveland, Ohio
In Canada: THE MASTER BUILDERS Co., Ltd.
Toronto, Ontario.
ARCHITECTS and builders today find a growing demand for smooth, sanitary, permanent walls. Satisfy that demand—give your residential construction the extra sales appeal of Nairn Wall Linoleum!

Have you seen all the smart new effects in this most modern of all wall treatments? Rich marbleized designs—delicate pastels—natural wood-grain reproductions.

Even in much more costly materials, you can’t get all the advantages of Nairn Wall Linoleum. A perfectly smooth surface—washable, sanitary, easy-to-clean! Smart rounded effects at openings and corners! And freedom from refinishing expense!

Installed by authorized contractors, Nairn Wall Linoleum is fully guaranteed. An A. I. A. sample file is available to architects and contractors. Write today.

CONGOLEUM-NAIRN INC., KEARNY, N. J.
But, self-sales attributable to this original publicity cannot last forever. When they peter out, Architect Stoddard will consider more seriously the problems of merchandising. Up his sleeve are three possibilities: 1) Real estate companies may handle sales on a 5 per cent commission basis—the Seattle Real Estate Board has already expressed its willingness to cooperate. 2) Retail lumber dealers may be used as an outlet. 3) The Corporation may deem it expedient to develop its own sales organization.

Expansion. While the General Housing Corp. must now be classed as a "little business," it optimistically hopes to move some day into the ranks of "big business." Today it employs only twenty building mechanics—all AFL members selected by the Corporation's officials and paid on an hourly basis. But, after it has had a little more experience with its new production techniques and if demand for its product continues, the Corporation will ultimately establish plants in all sections of the country—thus solve its knotty transportation problem which makes shipments of more than 100 miles uneconomical.

Besides the obvious attraction of its low price, other factors which may build up demand for Stoddard's house, warrant its production on a nation-wide basis are, first, those which are inherent in any mobile house and, secondly, those which pertain particularly to Stoddard's mobile house. In the first category is the fact that the purchaser of a mobile house (like the purchaser of its progenitor—the "diner" or portable lunch wagon) can protect his investment by moving his house from one neighborhood to another. (The house itself is 100 per cent salvagable.) Furthermore, there is the oft-advanced theory that ultimately it may be possible to finance the purchase of a mobile house under a comparatively inexpensive chattel mortgage.

Architect Stoddard, however, uses neither of these sales points in boosting his mobile house. Instead, his promotional literature lists five talking points: 1) the house as priced is ready to live in; 2) fully equipped; 3) constructed with factory precision; 4) architect designed and; 5) expandable through the use of "addable" room units. For this five-fold reason, Stoddard has dubbed his patented creation "The Quintec House," has registered its name with Federal authorities.

Such are the factors which favor the expansion of General Housing Corp. If expansion takes place, it will be due to the undisputable quality of The Quintec House. Also, if expansion takes place, it will be the first time in the history of mobile housing, and the General Housing Corp. will have gone far toward hushing those who continually compare Home Building's production methods with those of the automobile industry.
I'm digging out something everybody needs in paint*

You don't need three guesses to tell what I'm talking about, because my job is mining lead.

And lead is the starting point for making a durable paint.

You see, they make the purest lead into white lead.

And white lead is used in making paint.

When you look at such ancestry, it's not surprising that pure white lead paint is able to stand up under the attack of time and nature.

In case you think I'm grinding my own ax, just ask any painter who knows his stuff. Ask him what he'd paint his own house with. I can tell you what his answer will be—"white lead."

So take it from an old lead miner, you can't beat a paint that's made from lead. And this is one case where the best is really the cheapest.

LEAD INDUSTRIES ASSOCIATION
420 Lexington Avenue
New York, N. Y.

You're money ahead... when you use

White Lead
Note the great difference in appearance between the two sections of pipe illustrated above. The STREAMLINE Copper Pipe (right-hand illustration) is much neater and compact in appearance. It actually appears smaller in diameter but the STREAMLINE Copper Pipe has as great, or greater internal flow capacity than the threaded pipe.

Piping systems connected by threaded fittings are weakest at the joint because the metal is cut away to fabricate the thread. This is a potential point for future breakage and leaks.

In contrast to this copper pipe connected with STREAMLINE Fittings is actually strongest at the joint and is so constructed that its internal diameter is uniform and smooth—much less chance for clogging and pressure loss.

Copper has long been recognized as the most durable of metals for piping purposes. There are authentic cases on record where it has lasted for hundreds of years and, with the exception of a slight tarnish, just as serviceable as when first installed.

Although copper is not a cure-all for all water conditions—and there are certain sections in the country where its use is not recommended—it does fill the requirements for an all-purpose piping in the great majority of cases, and in most instances is a far superior piping to install.

An efficient—and lastingly efficient plumbing or heating piping system is one of the most vitaly important factors in any home, or in any building where a conducting system is required. It is the actual nerve center upon which the very livability of the dwelling depends—and this becomes more and more apparent after some years of service.

STREAMLINE Copper Pipe connected with STREAMLINE Fittings assures a piping installation that incorporates tremendous resistance to rust, clogging and vibration. More than that, its cost is little, if any higher than materials that corrode and leak after a few years of service.

STREAMLINE Copper Pipe conducts hot water quicker with less heat loss than ferrous piping. It requires less room to install, has no threaded joints to leak and is the best possible insurance against plumbing repair bills. Like all good things, STREAMLINE has many imitations but no equals. Specify genuine STREAMLINE. Insist upon its being used.
I find the operating expense a dollar a month; have never had any expense for service or service parts. We are very well pleased and particularly like its silence." Mrs. Simeon Anderson, 5348 N. Christiana, Chicago, Illinois.

My tenants praise Servel Electrolux silence, dependability and constant cold; and find this different refrigerator has an extremely low operating cost." Mr. J. H. Walpin, 210 Republic Bldg., Denver, Colo.

DIFFERENT FROM ALL OTHERS
• No Moving Parts in its freezing system
• Permanent Silence
• Continued Low Operating Cost
• More Years of Dependable Service
• Savings that Pay for It

SPECIFY THE REFRIGERATOR THEY HEAR ABOUT - BUT NEVER HEAR
NO MATTER WHAT LAVATORY YOU'RE LOOKING FOR... KOhLER HAS IT!

Kohler's complete line of new lavatories includes every style for every purpose. Above is the new vitreous Chesapeake with wall-free towel bars and tubular hexagonal legs. Compact Centra fitting allows plenty of space for bathroom articles.

The vitreous-china Jamestown has flat, useful surfaces, cut corners. Here, too, wall-free towel bars eliminate the danger of splitting bathroom walls.

• When it comes to lavatories, see Kohler first. All sizes, all prices... for trailer, home, office building. In black or white or any of eight Kohler colors. Remember, Kohler white is a perfect white—that enameled fixtures harmonize with vitreous. Write today for interesting literature in four colors.

FORUM OF EVENTS

(Continued from page 13)

AWARDS
To the Philadelphia Savings Fund Society Building, the Gold Medal of the Philadelphia Chapter, A.I.A., which has not been awarded since 1939, George Howe and William Lescaze were the architects. Jury of Awards: William G. Perry of Boston and William J. H. Hough of Philadelphia.

To C. Valentine Kirby, director of art education, Department of Education of Pennsylvania, 1939 Gold Medal of the Eastern Arts Association on the occasion of its 39th annual convention, New York.

COMPETITION
Barre Granite Association’s 1939 Competition. A change in closing date has been announced—August 1 instead of September 1 as originally planned. Prizes totaling $1,500 are offered for designs of memorials. Entry cards and further information may be had from Barre Granite Association, Inc., Barre, Vt.

EDUCATIONAL
Art Students' League of New York. Tuition scholarships have been awarded to ten winners in the Annual Scholarship Competition. A jury of the faculty selected the following out of entrants from 29 States. Lawrence W. Beach, Columbus, Ohio; Frances V. Bear, Staunton, Va.; Jacqueline Bowen, St. Paul, Minn.; Caroline P. Coates, Baton Rouge, La.; D. E. Drake, Jr., Lexington, Ky.; Helen M. Haley, Minneapolis, Minn.; Liesl Kahn-Wolz, New Rochelle, N. Y.; Alex Minowski, Detroit; Jane Sannickson, Cincinnati; Melvin Tapley, Peekskill, N.Y.

Princeton University. Award of the Leonard M. Palmer Fellowship has been made to Edward A. Moulthrop, a student of Western Reserve University, Cleveland. The Fellowship carries $700 plus a year’s tuition. Mr. Moulthrop, a fifth year student—incidentally, the son of an architect—held last summer the Schweinfurth Scholarship at Fontainebleau.

University of Illinois. Eighth Annual consideration of candidates for the Kate Neal Kinley Memorial Fellowship, yielding $1,000 toward expenses of a year’s advanced study of the fine arts in America or abroad. Open to graduates of the College of Fine and Applied Arts of the University of Illinois. Applications due not later than May 15, 1939. For application blanks and instructions, address Dean Ruxford Newcomb, Urbana, Ill.

Cranbrook Academy of Art. There is one scholarship open to architects and craftsmen who wish to study advanced architecture and civic design under the direction of Eelk Saarinen. Requests for application forms and details should be sent not later than June 1, 1939, to Richard P. Raseman, Executive Secretary, Cranbrook Academy of Art, Bloomfield Hills, Mich.

American Academy in Rome. Finalists for the 24-hour competition, Rome Prize in Architecture, are: Maurice W. Bacon, Yale; Joseph F. Balis, Pennsylvania State; Fred W. Bucky, Jr., New York University; Edward H. Burgener, (Continued on page 36)
Nothing is more vexing than building delays that bring down complaints from impatient clients.

But now you can speed up every job by using walls and ceilings of Recessed Edge Bestwall, with joints concealed by the Bestwall Reinforcing Joint System. There will be no sacrifice in appearance. You will get the smooth, fire-proof, crack-free surfaces you demand.

Bestwall sheets go up as soon as plumbing and heating are roughed-in. Joints are concealed immediately. Walls and ceilings are ready for trim and finish with any decorative treatment almost as soon as erected.

Bestwall, the Original Gypsum Wallboard, is also available as Insulating Bestwall (with reflective insulation), or as beautiful reproductions of Knotty Pine or American Walnut paneling. Let us send you our new 16-page illustrated book showing just how to get smooth, straight walls with the characteristic Bestwall strength, permanence, fire-safety and resistance to moisture and vermin.

MAY WE SEND THE NEW BESTWALL BOOK?
Illustrated 16-page book, "Fire-proof Bestwall for Better Walls", is now off the press with complete descriptive information and specifications. Your request for a copy will have immediate attention.
1 Gas. Mueller offers gas equipment that delivers low cost heat for homes in every price range. Heat Speeder, Mueller’s exclusive steel Gas Furnace Section transfers heat six to eight times faster than old style units. Saves fuel.

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3 Coal. New stoker furnace simplifies clinker removal and eliminates fly ash accumulation. Mueller manufactures a complete line of coal-fired furnaces.


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The Mueller gas fired line includes Climatrol and Climatrol Jr., air conditioning gas furnaces; Flor-Aire for small homes and Gas Era Boilers for residential use. Above, taking a pyrometer reading, H. P. Mueller, President, (right), E. A. Jones, Chief Engineer, (left) with laboratory assistant.

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EASY CLEANING FROM INSIDE; CONTROLLED VENTILATION WITHOUT DRAFT; MAXIMUM LIGHT AND SOLID WELDED ROLLED STEEL CONSTRUCTION ARE CHARACTERISTICS OF HOPE'S STEEL WINDOWS FOR SCHOOLS. THREE TYPES OF WINDOWS SUITABLE FOR SCHOOLS ARE FEATURED IN OUR CATALOG NO. 66 PUBLISHED RECENTLY. IF YOU HAVE NOT YET RECEIVED YOUR COPY, SEND FOR ONE AND WE WILL GLADLY MAIL IT PROMPTLY.

HOPE'S WINDOWS INC., Jamestown, N.Y.
Spring Rains make Homeowners say, "Let's Do Something About Dampness"

The rainy season brings a crop of leaky basements and rouses the anger of Mrs. Housewife against the rivulets that trickle across the laundry or playroom floor. That's where Bondex Waterproof Cement Paint comes in! Suggest a treatment of this world-famous finish that beautifies as it waterproofs basement walls.

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For painted and integrally-waterproofed surfaces, use one coat of the new Bondex-Primer followed by a finish coat of Bondex. For porous and non-painted surfaces use two coats of Bondex in a choice of 16 colors. Folder giving complete instructions will be gladly sent on request. Mail coupon below.

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THE REARDON COMPANY
2200 N. 2nd St., St. Louis, Mo.

Please send illustrated folder on Bondex Waterproof Cement Paint for basement use.

Name___________________________
Address________________________
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FORUM OF EVENTS

(Continued from page 42)


CALENDAR


MISCELLANEOUS

FIFTEENTH INTERNATIONAL CONGRESS OF ARCHITECTS will be held in Washington, D. C., September 25 to 30 with the U. S. Government and the A. I. A. as hosts to delegates from foreign countries. Invitations have been extended through the State Department to 50 foreign governments and 100 foreign architectural societies. Secretary Hull has appointed the official U. S. delegation: Charles D. Maginnis, chairman; Edwin Bergstrom, Harvey Wiley Corbett, Richmond H. Shreve, Louis A. Simon, George Oakley Totten, Jr., Stephen F. Voorhees, and Clarence C. Zantzinger, who will be secretary general.


A New York Committee, which will direct arrangements for the City's reception to the foreign architects, including a visit to the World's Fair, is headed by Mr. Voorhees. A sub-committee on exhibits is headed by Mr. Levi, with Mr. Shreve vice chairman. Sub-committees on student participation and program are under the chairmanship of Mr. Zantzinger. Sub-committee on publicity, Mr. Simon, chairman.

(Continued on page 50)
WHOLESALE AIR CONDITIONING no longer entails perplexing problems of vibration. The new, sensational compact York "W-Type" machine puts an end to that!

For this machine, which is scarcely larger than a good sized office desk... yet capable of providing the cooling effect necessary to air condition an entire commercial building... requires no special foundation even when installed on upper floors!

Size and weight per ton of air conditioning are reduced to the absolute minimum. The York "W-Type" Machine is statically and dynamically balanced. All cylinders are provided with removable nickel iron liners. Light weight, large free acting valves insure quietness and high efficiency.

To get full particulars about this outstanding development in air conditioning... or for consultation about any mechanical cooling problem... look in the classified section of the phone book for the York Trade Mark.

York Ice Machinery Corporation, York, Pa. Headquarters Branches and Distributors throughout the world.

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885
You can stake your reputation on **Milcor** Expansion Products

Milcor Corner Bead is part of the Milcor fireproof system that insures permanent plaster beauty and an enthusiastic client.

Milcor's interlocking web of expanded metal reinforces corners against unsightly cracks, chipping, or cleavage. The job stays new-looking — a credit to your reputation years from now.

Milcor originated and patented Expansion Corner Bead and provides everything you need, in all types of expansion products, to meet any structural condition — makes it so you can depend on it.

Your interior details can’t name a Corner Bead, Picture Mould, or Base Screed that Milcor doesn’t carry as a stock item. Only Milcor offers the new cove lath. Only Milcor gives you the major savings of Milcor fireproof partition systems — the most important development in years in fireproof construction. Your contractors get prompt service, without delays, from strategically located Milcor plants and warehouses, through local Milcor dealers.

Be far-sighted when you choose interior paint. Make sure that the “flat” you specify is really washable. Walls that can be kept clean do not need to be repainted so often. Therefore, real washability means real economy for your client.

Flat paint made with Dutch Boy White-Lead and Lead Mixing Oil is washable in both senses of the word. (1) The beauty of this paint is not destroyed by hard scrubbings. (2) Those scrubbings actually get you somewhere. The test panel at the right shows how stubborn stains and dirt really do “come out in the wash.”

But there’s more to the story of Dutch Boy money-saving than that. This paint has all the durability for which white-lead has long been famous. It mixes quickly, spreads easily and has high coverage—800 sq. ft. per gal. on smooth plaster. Those three qualities mean low first cost. Then add long wear and real cleanability, and you have long-run economy also.

This test panel is a 2' by 3' piece of wallboard, painted with Dutch Boy White-Lead and Dutch Boy Lead Mixing Oil. For a solid week, this panel lay in a busy corridor. The test panel was walked on by hundreds of people daily. Horizontal streaks show how it was then defaced with grease, ink, pencil, crayon, shoe blacking, lipstick, etc. Stains on this panel were completely removed by washing with soap and water.
Now you can re-create the traditional Colonial styles without sacrificing the convenience and safety of a reliable mortise lock. For Lockwood offers the thumb latch combined with mortise lock for thin interior doors. It is authentic in design, sturdy in construction, practical in application, and economical in price—meeting a long-felt need for period hardware within the reach of the small home builder.

Please send for descriptive bulletin—or ask to have a representative call—with samples.

LOCKWOOD HARDWARE MFG. CO.
Division of INDEPENDENT LOCK CO., FITCHBURG, MASS.

FORUM OF EVENTS
(Continued from page 46)

ARCHITECTS FOR NEW YORK HOUSING. At the request of Alfred Rheinstein, chairman New York City Housing Authority, the names of 33 architects and architectural firms have been listed from whom the designers of future low rent housing projects will be chosen. George McMenemy served as chairman of a committee with Gilmore D. Clarke and Jay Downer. Firms chosen were listed in groups of three as follows: Corbett & MacMurray, Arthur C. Holden and Grosvenor Atterbury; Eliot Cross, William I. Hohauser and Ely Jacques Kahn; Harrison & Fouilhoux, Rosario Candela and Albert Mayer; Daniel P. Higgins, Carl A. Vollmer and Frederick G. Frost; Kohn, Butler & Stein; Matthew Del Gaudio and Henry S. Churchill; Morris & O'Connor, William Lescaze and Archibald M. Brown; Skidmore & Owings, Slee & Bryson and Starrett & Van Vleck; Reinhard & Hofmeister, L. A. Goldstone and Leon N. Gillette; Shreve, Lamb & Harmon, W. F. R. Bahrdt and Sylvan Bien; Voorhees, Walker, Foley & Smith, C. W. Selding and Alfred Easton Poor; York & Sawyer, Howard B. Burton and Aymar Embury II.

NEW YORK STATE SUPERINTENDENT OF PUBLIC WORKS. Following the death of Col. Frederick Stuart Greene on March 25, Governor Lehman nominated as his successor Capt. Arthur W. Brandt, acting head of the Public Works Department during Col. Greene's illness and since his death. Capt. Brandt has been with the Department since he was graduated from Tufts College Engineering School in 1912. In 1940 he was appointed deputy commissioner of highways, and in 1941 was made commissioner of highways.

DEATHS

FREDERICK STUART GREENE, 69, engineer, in Washington, D. C. Col. Greene, New York State's Commissioner of Public Works, was first appointed by Governor Alfred Smith and reappointed continuously by Governors Roosevelt and Lehman. Ill health brought about an announcement of his retirement only shortly before his death. Col. Greene was a redoubtable supporter of the bureau system of design for public works, thereby clashing frequently with the architects of the State. He served with distinction with the 302nd engineers, A.E.F.

HARRY V. K. HENDERSON, 56, architect and painter, in Newfane, Vt. Mr. Henderson was associated with the late Raymond Hood when the latter designed the American Radiator, Daily News, and Mcgraw-Hill Buildings in New York, and the Chicago Tribune Tower. He retired in 1931, three years before Mr. Hood's death, and devoted his time to painting and travel. He was a member of the A.I.A., the Architectural League of New York, American Water Color Society, and the New York Water Color Society.

WILLIAM B. MUNDIE, 76, architect, in Evanston, Ill. Born in 1863 at Hamilton, Ontario, he came to Chicago at 21 to work for Major William Lebaron Jenney, and seven years later became a partner—Jenney & Mundie. In 1935, Mundie & Jensen, 1905; Mundie & Jensen, 1907; Mundie, Jensen, Bourke & Havens, 1936). One of the last members of the group of architects who developed the skyscraper in Chicago, Mr. Mundie was supervising architect for the Board of Education 1898-1903, and designed the Horticultural Building for the Exposition of 1892. He was a charter member of the Cliff Dwellers and a Fellow of the A.I.A.—at one time its vice president.
When you plan

a public building, let us handle all your sound distribution problems

HOTELS, schools, hospitals and other large buildings need sound distribution systems to bring out their full usefulness. But planning a sound system can add tremendously to your worries.

YOU DON’T WANT to tackle the countless technical problems involved. Yet you want to be sure your client will have no cause to complain about the performance of the system when it goes into action.

MANY ARCHITECTS have found a good way to avoid the preliminary worries and to make sure of the final results. They call in Graybar’s experts—who have had years of experience with sound system installations.

YOU CAN COUNT ON Western Electric equipment—engineered by Bell Telephone Laboratories—for highest quality sound-transmission. And new equipment this year provides greater flexibility than ever before. For “Sound” Advice, write to Graybar Electric Co., Graybar Building, New York.

Western Electric
LEADER IN SOUND-TRANSMISSION APPARATUS
Why Nu-Wood Leads the Style Parade

COLOR. The subtle, soft colors of Nu-Wood—available in seven shades—have never been duplicated in other interior finish materials.

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Style—as exclusive and distinctive as in a new model from Paris—that is what makes Nu-Wood appeal to architects and clients alike! For every Nu-Wood interior is different—different from every other Nu-Wood interior—and different from every other interior finish.

Each Nu-Wood "model" is exclusive—designed to fit the wishes of the architect and the needs of the home, church, theatre, restaurant or other building in which it is applied. And many architects today agree that the only material which can duplicate Nu-Wood is Nu-Wood.

Nu-Wood, with its unique texture, its variety of soft, harmonious colors, is always in the best of taste. And today, new Nu-Wood developments such as Sta-Lite—Nu-Wood Wainscot—and Kolor-Trim Moldings—give Nu-Wood an even greater "edge" in providing interesting interiors for the widest variety of requirements at low cost.

As an architect, you'll want to have full information about Nu-Wood—about its insulating and acoustical value—and about the scope it gives you in planning modern and traditional interiors for every type of building. Write today for the complete facts.

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NU-WOOD AND BALSAM-WOOL INSULATIONS
COAL BINS, like fuels, are local problems. Some buildings have plenty of space; in others, space must be rigidly conserved. Coal bins that can be tucked away into unusual places or that perform double duties are helpful in solving designing problems.

YOU WILL FIND details of such bins in our free book, the 1939 Basement Book. You will also find constructional details of other modernly built bins, plans for basements and for basementless houses that illustrate the fundamental principles of designing for the use of modern, low-cost bituminous coal or coke.

MORE AND MORE PEOPLE are turning to scientifically cleaned and prepared bituminous coal or coke. They desire the steady heat it provides. They like the savings which the low-cost universal fuel gives them. Fuel problems, after all, are local problems. Your local coal merchant can give you valuable information on local fuel performance and fuel costs which is important in solving your clients' heating requirements. See your local coal merchants for local costs—write for the 1939 Basement Plan Book for helpful hints in designing.

NATIONAL COAL ASSOCIATION
The Nation-Wide Organization of Bituminous Coal Producers
HEADQUARTERS: 804 SOUTHERN BLDG., WASHINGTON, D.C.
WESTERN OFFICE: 307 N. MICHIGAN AVENUE, CHICAGO, ILLINOIS
Please send me a copy of your Free Booklet “The 1939 Basement Plan Book,” A. I. A. File 30-G.

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City ____________________________________________
State ____________________________________________

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MAY 1939
53
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The architect designed simplicity...informality...practicality into this modern home. And to preserve its beauty the finish is protected with a paint that defies wear and weather...Eagle Pure White Lead in oil. For more than 90 years, architects have specified this long-wearing pigment because it gives lasting beauty to homes. Eagle Pure White Lead in oil creates an elastic paint film that anchors deep into the surface...doesn’t crack or scale...wears only by a slow, gradual chalking.

EAGLE pure WHITE LEAD

THE EAGLE-PICHER LEAD COMPANY
Cincinnati, Ohio

(Continued from page 20)

DESIGN OF STEEL BUILDINGS, by Harold Dana Hauf. John Wiley and Sons, Inc. 232 pp. 6 x 9. $2.75.


Both of these books are revised and enlarged to cover changes and new developments in structural practice. The former, designed specifically for the use of students and young architects and engineers, has the advantage of brevity and simplicity. "Steel Construction" begins with the process of making steel, discusses fabrication, welding, protection of structural members, and devotes a considerable amount of space to specific building types. Both are recommended.


By 1700, Dr. Johnson's well-known statement that the noblest prospect a Scot ever sees is the high road leading into England became particularly true of architects. Before that time, however, Scotland possessed an indigenous architecture which, while based on the styles of Western Europe, was yet separate and distinct from the work on the other side of the border. The five essays in this book trace Scottish building traditions from the cairns and hill forts of prehistoric times to the eighteenth century when native Scottish forms were supplanted by the classic style. The author's analysis is amply documented by excellent photographs.


A very useful handbook outlining the basic compositions and general applications of the commonly used paints. The chief value to the architect of such a book is, of course, in the preparation of specifications, and there is a chapter devoted to this subject, with outline specification forms and descriptions of various formulas. A considerable amount of information is given on checking, alligatoring, blistering, and the other difficulties that arise on paint jobs, with explanation of their causes and recommendations for their correction. There is a section on mixing paints, another on the proper uses of the different types, and a series of questions and answers which deal chiefly with quantities of paint required for various kinds of surfaces.
Modernizing miracle transforms noted Los Angeles Auditorium

The remodeling of this center of business and culture in Los Angeles is a tribute to architects and builders of today—and the modern materials they use.

Stucco is one of these materials. Here, it is factory-prepared stucco made with Atlas White portland cement which wraps this Auditorium in a modern, permanent, fire-and weather-resisting wall.

Consider Atlas White stucco for your next modernizing job and for new buildings. You can specify it in white and a range of colors. Both initial and maintenance costs will be surprisingly low. Let us send you information on the many ways in which stucco is being used today. Write Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), Chrysler Building, N.Y.C.

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To Safeguard the interior beauty of modern buildings, architects, more and more, are specifying Steelcrete Bar-Z-System—the original system of hollow plastered partitions. This rigid construction, consisting of Bar-Z-Studs and Bar-X-Lath (the diamond mesh expanded metal lath with twin reinforcing rods), provides a perfect reinforced base for plaster and assures maximum protection against cracking. It also offers high resistance to the penetration of sound. You can specify the Steelcrete Bar-Z-System for any type of building. Write for the latest catalog containing complete details.

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You can be posted on the newest developments by referring to A. I. A. File 131, Westinghouse Architects' and Engineers' Data Book, Nofuze section. This explains the bimetal principle of circuit protection . . . safe, convenient, making it possible to restore service by a flip of the switch.

If you do not have a copy of this book, be sure to send for one today. Simply write to:

Westinghouse Electric & Mfg. Company
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Here's Structural Glass
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The perfect finish of fine plate glass is obtained by mechanical grinding and polishing. And the brilliant, mirror-like finish of Carrara Structural Glass is obtained the same way. Every piece of Carrara produced is mechanically ground and polished.

What this means to effective design is obvious. When working with large areas of transparent glass, you specify polished plate glass for best results. Similarly, when working with structural glass, where slabs are usually quite large, Carrara with its ground and polished finish will inevitably produce a far superior job.

The permanence, easy cleaning, sanitation and wide choice of colors offered by Carrara Glass assure a long life of beauty and usefulness, and wide design possibilities for architects. Whether you use Carrara for toilet room walls, stiles and partitions, for wainscoting, for decorative purposes in the large building or the home, you will find it an ideal material to work with.

Write today for our free booklet, "Carrara, the Modern Structural Glass," which contains complete information. Address Pittsburgh Corning Corporation, 2128-9 Grant Bldg., Pittsburgh, Pa.

At the New York World’s Fair, see the exhibits of Pittsburgh Glass in the Glass Center Building, the Forward March of America Building, and the All-Glass House; and, at the Golden Gate International Exposition, see them in the Homes and Gardens Building.

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YOU are indeed providing a luxury when you specify the above smartly styled unit for any home. It is, however, certainly not an extravagance to enjoy the clean, healthful, labor-free comfort of a Holland Automatic Furnace Air Conditioner. Matched part for part and size for size, it is lower in price than any other of comparable efficiency. Furthermore, thousands of installations throughout the country have shown remarkable savings in operating costs in comparison with heating systems they replaced.

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To be sure many different kinds of equipment are available to supply these same services. If, however, you will study Holland specifications, we are sure you will agree that none equal it in efficiency and economy. A complete description is yours for mailing the coupon below.

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The theme song of America is improvement and speed, and so Sport joins the long list of activities that turn for both to steel. Your drive is longer, truer because of a steel shaft on your golf clubs; your play more enjoyable due to perfect conditioned, well watered courses made possible through the use of steel pipe sprinkler systems; shoe cleats of steel grip golf fairway and running track; steel horse shoes speed the favorite across the finish lines; and racing automobiles, airplanes, speedboats, yachts would be impossible without fine steels.

Every moment of our lives we depend on steel in not one but many forms. We get up in the morning after a restful night on steel springs, we shave with a steel razor, we eat meals prepared on steel ranges, we ride in steel trains or cars, we work in steel-framed plants or buildings.

The steel for every one of these products must be exactly right for each particular use. At Youngstown every pound of steel sold is developed through research for its special use, no matter how small the order may be.

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Learn how easily you can turn these demands into profitable business; write today for samples and complete information about Insulite building materials. The Insulite Company, Dept. AF59, Minneapolis, Minnesota.

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INeULITE
You needn't sacrifice either beauty or durability in floors for modern retail stores. You can be sure of lasting beauty, with unusually low maintenance costs included, by specifying Terrazzo. And you can use Terrazzo inside or outside with equally lasting and beautiful results.

Terrazzo is a combination of cement and marble. You can see where its durability comes from. The picture above shows a simple design. But you can specify any standard or individually designed pattern—simple or intricate—in practically any color or combination of colors. And you can be sure that the finished job will be exactly as planned. Colors will be rich—and designs will be sharp and clear.

Terrazzo is not a new type of floor. But many architects are rediscovering its many possibilities for both new buildings and those to be modernized. In stores, Terrazzo is today exerting its share of sales appeal on thousands of customers. And it is making a strong appeal to store owners with its very low cost of maintenance. For the latest information on Terrazzo and its many uses, write The National Terrazzo and Mosaic Association, 1420 New York Ave., N.W., Washington, D.C.

At the left is a Terrazzo floor at the entrance to the Wm. H. Block Co. Store in Indianapolis. You can see the individual design but not the rich, varied coloring.

At the right and below is a detail construction drawing showing Terrazzo as usually built up for floor, border, base, wainscot and cap. This is standard construction in many different places—stores, schools, office buildings, railroad stations, apartment house halls and hotel lobbies.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION
ALWAYS FAIR WEATHER

Clients’ chorus next winter
... if you specify “Window Conditioning” now!

This picture illustrates the contentment of all of your clients—if you include “Window Conditioning” in houses planned for spring, summer or fall building.

For “Window Conditioning” brings more comforts, greater fuel savings, than any single improvement of comparable cost. It effectively insulates the coldest spots in the house—the windows. It helps to maintain more even temperatures throughout ... minimizes chilly drafts ... reduces fuel bills—in many cases as much as 30%.

And “Window Conditioning” permits the use of smaller and less costly heating equipment without impairing heating efficiency. It is essential for the complete enjoyment of the benefits of winter air conditioning.

With double glazing, the quality of the glass becomes doubly important—for your client will be looking through two panes instead of one. L·O·F Quality Glass is ideal for “Window Conditioning.” It is clearer, brighter and flatter than any window glass that the industry has ever offered—noted for its greater freedom from waviness and distortion. Libbey-Owens-Ford Glass Company, Toledo.

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QUALITY GLASS

MAY 1939 63
Yes, the present school year will soon end for millions of boys and girls throughout the nation. As usual, summer vacation will be welcomed by every healthy, red-blooded younger.

Yet, most of them—whether they admit it or not—will be happy to return to school next fall. This applies particularly to those children who will attend modern schools, now under construction or recently completed. Most attractive in appearance, these new schools have been designed and constructed with a full understanding of educational and health needs as well as social requirements.

We are proud that Architects and School Authorities have selected the New Herman Nelson Air Conditioner in preference to any other unit for these modern schools.

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This NOFMA Specification Manual greatly simplifies preparation of specifications . . . serves as a Master Work Sheet . . . and includes complete NOFMA grades. Your copy will be mailed free on request.
Probably all of us capable of seeing beyond the ends of our noses have, within recent years, dreamed hopefully of:

1—A nation once more busy, prosperous, reasonably content.

2—Better homes for ourselves and our fellow Americans to live in.

Happily, these two dreams are eminently realizable—**together**. Our business history unquestionably shows that a full-blooded prosperity is definitely linked up with progress in home building.

INTO NEW HOMES GO NEW BATHROOM FIXTURES

Happily, too—throughout America today there rises an encouraging crescendo of the hammer and saw!

A number of factors account for the definite increase in building activity recorded within the past six months. The past two years have witnessed a steady decline in the cost of building materials. At the same time, there has been an inspiring improvement in home design, human comforts, labor-saving conveniences, health-preserving devices. And today, the whole subject of home building is much more clearly and generally understood.

LIFE, from its inception, has seen an opportunity to co-ordinate all the diverse information one must grasp when building a home. So, LIFE has consistently presented, analyzed, and clarified for its *many millions of readers* such hitherto puzzling and disunited matters as—house design, equipping, furnishing, practical landscaping, building and land costs, financing and relating financing to earning power. It is the first time that so complete an educational treatment of this subject has reached so huge an audience.

Fully aware of the "ill-housed third" problem, LIFE regularly reports on this pressing economic question. But, realizing that the driving force behind any considerable building revival is private home building by the millions who can afford it, LIFE has tried to show these millions that they can and should afford the thrilling adventure of home building.

An instance of LIFE's practical encouragement of this cause:

LIFE recently sought out a group of representative, geographically scattered, American families who admitted being unsatisfactorily housed and harboring dreams of better homes for themselves. Their incomes ranged from $2,000 to $10,000 a year. Then LIFE commissioned eight of the country's most distinguished architects to design new homes that would meet the needs of these families. The architects' plans met the challenge brilliantly—the families were delighted—and, simply, vividly, the entire project was reported in LIFE... revealing each step involved in home owning, from the original "dream" to amortization of the occupied home's financing.
The result of this single stimulus?

More than 40,000 people have purchased exact miniature models of the eight original LIFE houses... many more thousands have seen finished LIFE houses on display... and today, dotted over America from Boston to San Diego, from Atlanta to Seattle, LIFE houses are actually up and going up!

Issue after issue, LIFE shows that its attention to the many factors involved in home making is no mere flash-in-the-

pan enthusiasm. We are enthusiastically committed (as witness the recent provocative Yale-LIFE Conference on House Building Techniques) to the long-haul job of dramatizing to all Americans how much they have to gain from an intelligent and active support of the home building movement.

This is a most natural task for LIFE to set itself. For, in every one of its stimulating pages, LIFE is intensely concerned with all things in the world that shape and color you and your life. And of all these things, LIFE believes there is none more vital, more basic in importance than—your home!
In every Bench Show many dogs win ribbons. But the Grand Champion of the Show must win a high rating on all points. Likewise good building insulation such as Kimsul must meet not only one or two requirements, but all of them. It must be Efficient; and Permanent; and able to Repay its Cost in fuel savings.

**Efficient**
With its "K" factor of .27 Kimsul ranks high as a heat stopper, providing year-round insulation. It fits snugly and being flexible is easily worked around pipes or wires so no areas need be left unprotected.

**Permanent**
Kimsul is highly resistant to fire, moisture, vermin, fungi and time! Properly installed (nailed both top and bottom) it remains in place. Even when walls settle "transoms," thru which heat can leak, are not apt to develop.

**Low in Cost**
Kimsul costs so little to buy, and so little to install that its cost is soon repaid thru fuel savings. In new homes the cost of Kimsulating is often paid by savings in the size of the heating plant.

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**OF SPECIAL INTEREST TO ARCHITECTS**
The new Prestitched Kimsul is made in thicknesses of \( \frac{1}{2}, 1, 1\frac{1}{2}, \text{and} 2 \) inches, and in widths to fit snugly between studs of any standard spacing. When Kimsul is selected the thickness and width most applicable to the job may be used. Kimsul is equally efficient for insulating walls, roofs, or top floor ceilings. Left over pieces make ideal caulking.
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For more than 80 years Pittsburgh Paints have brought beauty and protection to homes, business and industrial properties—inside and out. Architects, painting contractors, painters have faith in these field-tested, factory-tested finishes—depend on them. We are proud of our fine reputation throughout the trade—a reputation that has been built only through years of maintaining the very highest standards of uniformity and durability. If you want paint jobs that stand up, specify Pittsburgh.

Rigid factory control assures uniformity and dependability!

Automatic scales and measures control the exact quantities of every ingredient used in Pittsburgh Finishes. These quantities are set up in printed formulas, must be followed to the smallest fractions.

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At Pittsburgh proving grounds, strategically located in different parts of the country, Pittsburgh Paints are tested under every climatic condition. That's one reason you can be SURE they'll stand up in actual service.

See Sweet's Catalogue!
- For further information and addresses of all Pittsburgh Branches, see Sweet's Catalogue.
- Call our Pittsburgh representative and ask him for complete specifications. Pittsburgh Plate Glass Company, Pittsburgh, Pennsylvania.
Why a --- CORRUGATED! CROWN SHEET?

In a Kewanee Type "C" the Corrugated Crown Sheet adds Strength and extra Heating Surface ... permitting the Most Effective Use of the intense heat.

Thus Higher Efficiency and an unhampered output of steam are provided in a compactly built boiler which requires less floor space.

PLUS:
these features

Following are other reasons why Type "C" Kewanee has become the largest selling steel heating boiler:

Furnace big and high enough to promote complete combustion.

Flues with sufficient area to handle the expanded volume of hot gases as they travel back and forth while their heat is transferred to the water.

Large water content to absorb the heat and keep itself in active circulation with unbroken surface for free steaming.

High steam space to prevent priming and insure a continuous flow of plenty of dry steam into the heating system.
Every year sees new advances in scientific methods of rust control. This new book outlines the most recent developments in a modern process for finish betterment. It describes the latest improvements that result in greater finish efficiency on scores of products, including architectural iron and steel equipment.

This book shows how Bonderizing adds a new finish quality to Steel Windows, Screens, Air Conditioning, Unit Heaters, Bath Room Cabinets as well as Galvanized sheet metal. It lists some of the world known corporations that use it as a necessary step in their finishing systems.

Every architect should have a copy in his files. If you have not investigated Bonderizing recently, send for your copy now.

PARKER RUST PROOF COMPANY
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ARCHITECTS SHOULD HAVE THIS NEW INFORMATION ABOUT THIS MODERN PROCESS
Food scientists today recognize the fact that there is a great deal more to the scientific preservation of foods than just keeping them cold. Complete food protection, they agree, demands safeguarding not only against spoilage but also against rapid drying out and against the exchanging of flavors.

The air in a refrigerator should be properly moist and free of food odors if vegetables are to be kept garden-fresh, meats juicy and full-flavored. In other words, the refrigerator should be air-conditioned.

The modern ice refrigerator is the only type which is air-conditioned. The film of water which forms on the surface of melting ice maintains the proper humidity in the circulating air—and at the same time washes food odors out of it. As a consequence, foods stay fresh longer... look better... taste better.

This new air-conditioned ice refrigerator costs only a third to a half as much as other types. There is a size and style to suit every home and meet every commercial requirement. Your local ice company will be glad to give you complete details or write:

**REFRIGERATORS—AS WELL AS BUILDINGS—NEED AIR-CONDITIONING**

Food scientists today recognize the fact that there is a great deal more to the scientific preservation of foods than just keeping them cold. Complete food protection, they agree, demands safeguarding not only against spoilage but also against rapid drying out and against the exchanging of flavors.

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For Real Underground Steam Efficiency

Underground steam conduit must hold its shape, have permanent structural stability, to retain its efficiency. Interlocking construction, lengthwise and sidewise, enables RIC-WIL Systems to do this. Insulation also must hold its shape—not slump away from pipes. Dry-paC does just that, as numerous tests have proved. RIC-WIL Tile or Cast Iron Conduit minimizes leakage and loss, keeps steam lines tight, dry and 90% efficient. Write for complete catalog and test data. Catalog also in Sweet's.

The **RIC-WIL CO.**

- Accept no substitute for Dry-paC—which meets severe sub-soil conditions. Write for proper specifications.
Toilet room environments need not be the barriers they sometimes are to the normal development of students

Toilet room environments are just as important as other environments, often more so... Clean, cheerful and orderly environments make lasting impressions upon sensitive youth. Toilet and shower conveniences should be up to the standards of other educational facilities, and comparable to home standards of orderliness and cleanliness.

The most suitable toilet room environments for an educational building can now be created by utilizing any one of five distinct types of Sanymetal Toilet Partitions, ranging from the ultra-modern to the standard. "The Academy," one of three types available in the ageless material, porcelain enamel, is particularly suitable for educational buildings, because it is built to stand up against the abusive treatment often accorded to such equipment. Furthermore, the flint hard, glistening surface of porcelain enamel finish can be wiped clean as easily as the surface of a kitchen range.

Simplicity of design, combined with sound mechanical construction, insures rigidity and promotes ease of installation. "The Embassy," one of five types, is offered by Sanymetal as the result of twenty-three years of experience in making over 45,000 toilet partition installations. "The Embassy" is certain to survive obsolescence and rough usage years longer than conventional type installations. The Sanymetal representative in your vicinity can be helpful in planning suitable toilet room environments for educational buildings. Consult him or write for Catalog 76.

For a full description of each of these five types, refer to Sanymetal section of Sweet's for 1939, catalog 20/21.

Sanymetal
THE SANYMETAL PRODUCTS CO., INC.
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Perilune)it Year-Round Sun Protection

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At Low Cost

Conditioned shade becomes an integral part of the building with Rusco Venetian All-Metal Awnings. And, by eliminating the annual service and maintenance factors—offer the owner an opportunity to save money over a short period of time.

By blending harmoniously into the surroundings, Rusco Venetian Awnings become an inobtrusive contributor to the outward appearance of any building and coincide with the trend in modern design.

To include Rusco Venetian All-Metal Awnings in your specifications is to assure long-lasting comfort and satisfaction to the client.

Made exclusively of Armco 20-gauge rust resisting Paint Grip Ingot Iron. To assure long, satisfactory service.

Simple finger-tip control inside adjusts vanes for the desired light, shades, and ventilation.

Send for illustrated folder showing actual installation and containing complete information.

THE F. C. RUSSELL COMPANY
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Consider these Distinctive features:

- Slats removable without disturbing operating parts
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The First is The Last!

"GREAT GEORGIAN HOUSES of AMERICA"

Drawn and compiled for ARCHITECTS EMERGENCY COMMITTEE

The first thorough compilation of American architecture as it made history before 1830. A comprehensive review of all the important examples of Georgian Houses, these two volumes provide a historically authentic reference for architects, draughtsmen, builders, decorators and those interested in the Arts and Professions.

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Included in Volumes I and II will be found such valuable examples as Mount Vernon, Monticello, The White House, The Hermitage, Doughoregan Manor, Hyde Hall, The Shadows at Bayou Teche, Stanwick Manor and many others, historically preserved for the future.

No description can do these "museum" editions justice. The original printing is literally the first and last edition all in one. Only a few copies remain. No more will be printed. The price is only $20.00 each volume.

Become one of those fortunate few who own one or both volumes of Great Georgian Houses of America. You may examine a copy in any fine book shop or you may order direct.

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GREAT GEORGIAN HOUSES OF AMERICA

115 EAST 40th STREET, NEW YORK CITY
You can't fool a BASKETBALL COACH

Over 5000 have chosen Seal-O-San as a tougher, less slippery gym floor finish

WHEN you specify Seal-O-San for that gymnasium floor, you know you are using a tried and tested product. For Seal-O-San is being used today in more than 5000 schools in all parts of the country. Most of these installations have been ordered by basketball coaches — men who know how a gym floor finish should perform. These men respect the tough, slip-proof Seal-O-San surface and the way it withstands the punishing action of basketball and other gymnasium activities. Seal-O-San is a combined seal and finish. It penetrates deeply into the wood, then forms a tough, elastic surface finish that quickly dries. It cannot crack, chip, or peel. Applied with a mop, Seal-O-San offers definite savings in labor over ordinary hand-brushed finishes.

A detailed folder and complete specifications will gladly be sent to architects. Write for your copy — today.

SEAL-O-SAN
PERFECT SEAL AND FINISH FOR WOOD FLOORS

WHEN IT'S A Contemporary DESIGN

Match IT WITH SAGER

Sager has captured the true spirit of modern architecture. Its clean, functional design is as modern as this moment . . . an inspired interpretation of the prevailing movement toward simplicity of style for greater utility. Give full expression to your modern building ideas with Sager.

SAGER LOCK WORKS
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Look
At Their Feet — It Tells The Story of Slenderized Radiator Design

The same care and attention given to make a pleasing design to the feet of our Slenderized Radiators, is reflected in the entire radiator.

Simplicity is the key note, with just enough modeling to lend attractiveness. Castings particularly smooth. Their good looks have led many an architect to recess them, without fronts, the radiators themselves acting as a grille. See Sweets.

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THE ARCHITECTURAL FORUM
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REPLACING duct work is a costly job in any building. We had to be certain that the steel selected for air-conditioning ducts would give the longest possible service—at moderate cost. U·S·S Copper Steel was the logical choice. It lasts longer. Costs just a little more. And our clients recognize the label. They have confidence in the name 'United States Steel'. That's why I don't hesitate to recommend it for the important jobs."

U·S·S Copper Steel is proving to architects everywhere that it is the ideal material for countless uses in heating and air-conditioning ducts, it stands up against high humidity conditions and wet-air condensation. For roofing, siding, downspouts, gutters—wherever atmospheric corrosion must be encountered—actual tests have shown that Copper Steel is more serviceable. The copper addition gives it a double defense against most of its natural enemies.

Look at the chart on this page—here's proof of extra life that may be expected from U·S·S Copper Steel. Further information may be obtained by writing to one of the companies listed below. U·S·S Copper Steel Sheets are quickly available—plain or galvanized—in principal cities.

COPPER STEEL SHEETS
CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh and Chicago
COLUMBIA STEEL COMPANY, San Francisco
TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham

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2. Long life in order to reduce maintenance expense.
3. Beauty which will add to the property it encloses.

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