Six Small Houses by Roger H. Bullard

PHOTOGRAPHS AND PLANS

THE NEW HOME OF THE R. I. B. A. IN LONDON

Rental Differentials in Low-cost Housing

BY ALBERT MAYER

LUMINOUS TUBES FOR LIGHTING

Portfolio: Tile Roofs

CHARLES SCRIBNER'S SONS, NEW YORK

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Being SURE Costs So Little

The difference between the cost of the Genuine Drop-Forged Von Duprin Self-Releasing Exit devices and that of any less sure means of exit is only a few dollars.

Yet the difference in satisfaction, in freedom from upkeep costs, in length of life is almost beyond comparison.

And, in case of emergency, the peace of mind that comes from the knowledge that safe exit is SURE, has a value far beyond any price in dollars. On that day you will be grateful indeed for the surplus strength that was built into the Von Duprins in anticipation of just such an emergency.

Then you will believe, with us, that the difference in cost between Von Duprins and any other means of exit is a ridiculously small price to pay for being sure.

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LISTED AS STANDARD BY UNDERWRITERS' LABORATORIES
ARE you specifying amoebic dysentery or are you specifying Siphon-Proof?

Such might well be a question put to you if doctors were consulted when specifications for toilet bowls are being written.

Doctors know the health hazards of a polluted water supply. They have treated cases of amoebic dysentery. Their associations report amoebic dysentery to have spread to two hundred and six (206) American cities affecting an estimated 8%-10% of the population.

Doctors have been called upon to cure the human ills resulting from contaminated drinking water . . . safe water polluted by the back-siphonage of wastes from plumbing fixtures.

It isn't the architects' job to correct bodily ills. But isn't it their duty to prevent the result by eliminating the cause . . . by eliminating cross-connections in plumbing fixtures which make back-siphonage possible?

You have eliminated the cross-connection hazard in bathtubs, lavatories and sinks by specifying "over the rim supply" with a "safe air space between fresh water inlets and waste water overflow." But the worst offender of all, the ordinary toilet bowl, still remains the greatest menace.

But now in toilet bowls, too, you can specify that "safe air space between." And it's open specification . . . it is Siphon-Proof.

Siphon-Proof is the one and only toilet bowl which always has a safe air space between fresh water supply inlets and waste water overflow. The result is a natural, ever-present, non-mechanical guarantee against back-siphonage.

Siphon-Proof is the only toilet bowl which is everything its name implies . . . positively siphon-proof, no less.

NOTE: The Special Committee on Vacuum Breakers of the Plumbing Contractors' Association of Chicago would not recommend any vacuum breaker with movable parts. Siphon-Proof has no moving parts. Siphon-Proof is non-mechanical. Siphon-Proof is safe specification.

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The JOHN DOUGLAS Company
Manufacturers of Plumbing Fixtures
CINCINNATI, OHIO

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Cincinnati, Ohio, Dept. A3-2
Please forward at once copy of "Civilization's Greatest Menace," explaining in detail how the Siphon-Proof Bowl Design eliminates cross connections.

Name:__________________________
Address:________________________
City:__________________________State:________________________

ARCHITECTS: Siphon-Proof is open specification . . available under license from any manufacturer of toilet bowls
A continuation of its program of encouraging improvement in the aesthetics of steel-bridge design, the American Institute of Steel Construction announces its Seventh Annual Bridge Design Competition, open to bona fide registered students of structural engineering and architecture in recognized technical schools of the United States and its possessions, and offers two cash prizes of $100 and $50 respectively for the designs placed first and second. Certificates, signed by the Jury of Award and the officers of the Institute, will be awarded to those whose designs are given honorable mention.

Details of the program may be had from the American Institute of Steel Construction, 200 Madison Avenue, New York City.

As in previous competitions, there are two stages. Drawings in the preliminary stage of the competition are due not later than March 16; final drawings, not later than April 27.

ARCHITECTURAL LEAGUE OF WESTERN RESERVE

In accordance with its charter, the primary objectives of the Architectural League of the Western Reserve are:

"To advance the science and art of architecture and the allied arts and crafts; to encourage education and to afford its members an opportunity for fair and friendly competition and ever improving leadership in these arts and crafts."

Three hundred have signed up for membership, and temporary headquarters have been established in the office of the president, Carl Wendelin Kuehny, Cleveland, Ohio.

CHICAGO'S LOW-COST HOUSING PROJECTS

The Public Works Administrator has appointed a group of architects to supervise one of Chicago's low-cost housing and slum-clearance projects. The work will be in charge of a regional group consisting of Mundie & Jensen; Armstrong, Fife, & Grider; John Holabird; Ernest A. Grunfeld, Jr.; and Philip Maher.

DECEMBER BUILDING FIGURES

According to the Dun & Bradstreet reports, December building permit totals decreased more than the seasonal expectation. The decrease from November figures was 26.8 per cent; the decrease from December, 1932, was 15.3 per cent. A detailed comparison with December, 1933, reveals increases in six groups, and declines in only two —the Pacific and Middle Atlantic sections, New York City's figures accounting for most of the decrease for the country as a whole.

The aggregate value of building permits for the twelve months of 1934 showed an increase of 11.1 per cent over 1933—the first yearly increase in building permit values since the boom year of 1925.

EVER READY MURAL COMPETITION

A recent competition for the selection of a mural painter to decorate the office walls of the Ever Ready Label Corporation in New York City resulted as follows: first prize of $500, and a commission to carry out the work, to Dunbar Beck of New York; second prize, Kenneth D. Loomis; third prize, Charles S. Dean. Judges for the contest were: Richard F. Bach, Julian Clarence Levi, Arthur Crisp, Hildreth Meière, and Sidney B. Hollander, president of the Ever Ready Label Corporation.

NEW COURSES AT COLUMBIA

A new course will be presented by Mr. Eugene Raskin in the evening classes of the Columbia University School of Architecture in the coming spring session. It will be entitled "Modern Products," and is designed to help the architect in meeting the realities of his profession by means of a survey of building materials and equipment available in this country, with special emphasis on new or recently improved products. The class will meet on Monday evenings.

The University also announces a seminar on the Plan of New York City, beginning in February. It includes an analysis of the Regional Plan of New York which will be given by Dr. Werner Hegemann, former editor of Stadtebau, a recognized authority on town planning and housing.

REGIONAL PLANNING COURSES

In response to a growing public interest in the general field of large-scale planning, the Board of Trustees of Cornell University has authorized the establishment in the near future of a special group of courses on this subject, to be offered to all students of the university. A grant from the Carnegie Corporation of New York will finance the project for a period of three years.

The board also announced the appointment of Gilmore D. Clarke of New York as Professor of Regional Planning to supervise the new enterprise. He is a member of advisory boards at Cornell, Harvard, and the Massachusetts Institute of Technology, a trustee of the American Academy in Rome, and a member of the National Commission of Fine Arts and of various civic and technical societies.

While specialized courses have been established at other institutions, notably at Harvard and Massachusetts Institute of Technology, primarily for the training of city planners, the offering at Cornell will be in the nature of an experiment along new lines. The attempt will be made to develop an understanding of this important subject among students whose main interest lies outside the technical planning field.

(Continued on page 16)
Engineers and designers welcome the addition of Carnegie Light Weight Sections to the well known wide-flange CB Series. These new light beams, stanchions and joists have the same efficient distribution of metal with corresponding high strength factors. Their advantages apply particularly to light-occupancy structures such as schools, hospitals, stores, apartments and residences. The cost of the steel for carrying the relatively light loads in such construction is materially reduced through the use of Carnegie Light Weight Sections. Include them on your next design. Our engineers will be glad to work with you.
THERE is still time to enter the $21,000 G-E Architectural Competition. But the time is growing shorter. Competition closes at midnight on March 12, 1935.

The purpose of this competition is to encourage better designed homes from the standpoint of health, comfort, convenience and home entertainment—utilizing the latest mechanical and electrical advances.

Exterior design will, of course, be a factor in awarding prizes in this competition, but the judges will give greater weight to the skill and ingenuity with which the architect has provided for the maximum health, comfort, convenience and entertainment of the family for which the house is planned. This family is described in detail in the Contest Rules sent to each competitor.

Any architect, engineer, draftsman or designer, except G-E employees, is eligible to compete. Announcement of prize winners will be made on March 23rd. The jury of award consists of eleven members—seven architects representing different sections of the United States, one expert in child training, one home economics expert, one general contractor and one realtor. Names of jurors will be announced on March 19th, the first day of the judging.

Prize winning designs will be published, together with the report of the jury of award.

The Bliss family for which small homes in Classes A and B are to be designed.

Member, Producers Council, Inc.
ELECTRIC" COMPETITION
for the Bliss family

The Bliss family for which the medium size homes in Classes C and D are to be designed.

54 PRIZES IN ALL

GRAND PRIZE for Best Small Home . . . $2500.
(Best Home in Classes A and B)
GRAND PRIZE for Best Medium Size Home 2500.
(Best Home in Classes C and D)
FIRST PRIZE for Best Small Home in Class not receiving Grand Prize . . . 1500.
FIRST PRIZE for Best Medium Size Home in Class not receiving Grand Prize . . 1500.
SECOND PRIZE, in each of the four classifications . . . . . . . . . . $1250. 5000.
THIRD PRIZE, in each of the four classifications . . . . . . . . . . 1000. 4000.
HONORABLE MENTION, ten in each of the four classifications . . . . . 100. 4000.
Total $21,000

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A handy reference file of architectural data on all G-E products used in home construction or equipment. The coupon below will bring you the complete program and the File. Fill it out and mail today.

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GENTLEMEN: I desire to enter the G-E Architectural Competition for more livable homes. Please send me full information and the handy G-E Reference File.

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Leading architects and engineers tell us they always have ample "evidence" to justify wrought iron for any service where they think it should be specified.

In addition to their own experience with wrought iron they also have records covering a wider group of buildings in many cities which represent the experience of other architects and engineers.

Illustrated are examples of how Mauran, Russell & Crowell, St. Louis architects, following their own experience plus service record data, have specified wrought iron pipe for certain corrosive services. We call this method of material selection — "Pipe Prescription."

If you would like to review comparative service record data together with pipe specifications as written by leading architects and engineers, just ask a Byers Engineer or write our Engineering Service Department for complete information on "Pipe Prescription." A special report on Wrought Iron in Refrigeration Systems has just been compiled.


Examples of "Pipe Prescription"

MAURAN, RUSSELL & CROWELL
St. Louis Architects

- TOP—Southwestern Bell Telephone Building, St. Louis. Wrought Iron Pipe specified for cold water lines, waste lines, vents and drains; also for fire and gas lines and low pressure heating supply and return lines. I. E. Timlin, Associate Architect.
- LEFT—Federal Reserve Bank Building, St. Louis. Wrought Iron specified for main plumbing supply, cold and drinking water lines; fire lines, heating supply and return lines and refrigeration lines.
- RIGHT—St. Louis Globe-Democrat Building. Wrought Iron specified for cold and drinking water lines, fire lines to basement; gas piping; heating supply and return lines and refrigeration lines.

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A dry-point by Chester B. Price in which he depicts the terrace in front of the Public Library, looking south on Manhattan Island

Who Is the Owner?
Morgan Farrell points out the far-reaching effects brought out by changes in ownership through foreclosures or rental assignments, particularly in our metropolitan apartments. Here lies an opportunity for the architect

Luminous Tubes for Lighting
A new combination approximating the value of daylight, by using mercury vapor and neon tubes, as described by Eugene Clute

The New Home of the R. I. B. A. in London
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Two pencil sketches by John Wright Armstrong

Favorite Features
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Seattle’s Demonstration Bungalow
An architectural organization in the northwest moves an old shack into the centre of town and shows what can be done with it

Better Practice
Steel and miscellaneous iron form the subject of W. F. Bartels’ practical discussion this month

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House of Arthur L. Willis, Flushing, N. Y.

House of Morris L. Beard, Flushing, N. Y.

House of Paul G. Pennoyer, Locust Valley, N. Y.

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Gerald K. Gehrings shows an economical way of solving a common architectural problem

The Editor’s Diary

Architecture’s Portfolio of Tile Roofs
A collection of sixty photographs
ASK THE ARCHITECTS WHO USED Brunswick SERVICE

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OGDEN GRILL, Chicago, Ill.
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FRAUNCES TAVERN, New York City
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THE SPIRITS CLUB, 1819 Broadway, New York City
KENNETH NORTON, Architect

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"An outstanding line of lighting fixtures applicable to any style of architecture."
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MANHATTAN FORUM
From the drypoint (10 3/4 by 7 3/4 in.) by
CHESTER B. PRICE

By courtesy of Harlow, McDonald & Co., New York

ARCHITECTURE
FEBRUARY, 1935
Who Is the Owner?

By Morgan Farrell

Liquidation and foreclosure have brought about many changes in ownership, with the banks, trust and insurance companies holding vast quantities of commercial buildings. To unload would be fatal; to sit tight, expensive; to assume the rights and duties of landlord and make the buildings pay their way, is the obvious way out—and here the architect comes in.

Some order is beginning to shape itself out of the chaos which was the proprietorship of American real estate. Indeed, the debacle has not been as grievous as it might have been, though it is more than bad enough. That is to say, the number of absolute foreclosures in 1933 has been far less than the number of insolvent properties would warrant.

It is not too idealistic to attribute much of this to creditor forbearance. It is less idealistic to attribute some of it to legislative limitation of foreclosures. But it is also extremely certain, in any event, that the reason most mortgagees have not foreclosed is that building ownership, in these times, is almost invariably a liability. The mortgagees, therefore, would rather have the owner continue to struggle along, trying to get something out of his property, than to take on any more grief themselves. Meanwhile they would take what they could get in the way of interest and amortization.

Probably there would have been fewer surrenders of property to creditors if more owners had made a determined effort to carry on. But many of them had other businesses to save—the profits of which had gone into buildings as safe and sane investments for their latter years. So they lost courage and let their buildings go.

The canny or, perhaps, pluckier owners either bargained for or were offered the retention of both title and management if they would make assignments of rent to the holders of the mortgages. Where this did not work out, the mortgagor sometimes assumed the management, the title remaining with the owner.

A painstaking investigation among savings banks and trust companies which have been compelled to take over buildings offered as security for mortgages or other loans, shows that the number held under rental assignment generally outnumbers those held under foreclosure. The ratio of assignments to foreclosures varies from 1:1 to 4:1. The average of all banks is probably 2:1. It is naturally heavier in the States which have put into effect moratorium laws prohibiting foreclosures on real estate, conditionally or unconditionally. The New York law, which is typical, is limited to one year and prohibits foreclosure as long as the owner pays his interest and taxes.

That, then, is the general situation which has prevailed since 1931, and which has led to the present new ownership or guardianship of an estimated 25 per cent of all real estate in the country, including farms.

Now what interests the architect in the present state of real-estate ownership is: (1) What persons or institutions actually own the buildings which have been transferred? (2) Are they going to hold them or dump them? (3) If they are going to hold, to what extent will they rebuild or remodel?

To arrive at the present ownership status of our buildings, let us recapitulate the principal methods of raising the building money other than the owner’s equity, if any. In 1928 the principal methods of financing either the purchase or construction of buildings were:

(A) A mortgage loan by an individual, partnership, corporation, or institution. This is the oldest form of mortgage. In fact it was the only important form up to a generation ago. One class of lender in this category became so important that its mortgages require separate mention, namely:

(B) The Insurance Company Mortgage. The big insurance companies naturally turned
to real estate as an investment outlet for the huge surpluses they had piled up. By far the greatest part of insurance-company mortgages are on city property. The figures for 1932 were: Farm, $1,701,149,000; city, $5,095,166,000.

(C) The Real Estate First Mortgage Bond Issue. These were often “Gold Bonds,” which sounded quite impressive. Frequently also they were second mortgage bonds, or third or even fourth, which sounded less impressive. It will be recalled that a bond issue covered the mortgage on a single building, though sometimes several were pooled. Interest rates started at 5 per cent but rapidly advanced as competition became keener and the public acceptance became greater. When the crash came the interest rates had reached the impossible figure of 8 per cent. During the heyday of this form of financing building, the public was buying $1,000,000,000 worth of realty bonds a year. Altogether there were sold about $3,700,000,000 worth.

(D) Guaranteed Mortgages. These were sold to the public in the form of certificates of participation in a mortgage, guaranteed as to payment of principal and interest by the house of issue, usually a Title and Mortgage Company, a Guaranteed Mortgage Company, or some similarly styled institution. The certificates were purchasable in any amount, and covered either a mortgage on a single building or a pool of mortgages on a number of buildings. The total amount of guaranteed mortgages in 1932 was $3,900,000,000.

(E) Bank and Trust Company Mortgages. Savings and national banks have long considered mortgages on real estate as reliable and conservative investments for the funds deposited with them. So did the trust companies, though they were not as heavily interested in real estate as were the banks. The total of all real-estate loans by all banks and trust companies in 1932 was $9,941,000,000.

The mortgages under Class A, above, were mostly loans on small buildings: homes, multifamily houses, tenements, tax-payers, garages, and old buildings generally. Numerically, of course, they mounted into millions. When payments of principal and interest were in default for a long enough period, the mortgagee foreclosed and a sale followed, in the course of which the mortgagee usually bought in the property—but not always.

Companies have been organized to take advantage of the flood of small properties being swept into foreclosure and sale. They bid in the property at a few hundred dollars over the amount of the mortgage, and then hold it for a profitable sale.

Often, too, the distressed property owner will sell his deed for anything he can get for it. There is a thriving, if cold-blooded, barter in real-estate deeds in nearly every city. One reputable broker tried to salvage something for a client out of an apartment normally worth $65,000, which was about to be foreclosed to satisfy a mortgage of $26,000. He offered the deed of the property to a well-known barracuda, who, without a blink of the piscatorial eye, said: “I’ll give you $100 for it.” The broker briefly recommended an immediate destination to him and departed. He then went to the head of a small savings bank, told him the sad story, and
asked for a bid on the deed. The kindly-faced president offered him fifty dollars.

The architect is not much interested in the present ownership of these small buildings, because they are invariably held for sale only. If there is any remodelling done it will probably be without benefit of plans.

The foreclosed property owned under Class B by the insurance companies is quite another matter. Following are some significant figures on two classes of investments held by fifty-one insurance companies representing 92 to 98 per cent of all United States legal reserve companies:

### MORTGAGES

<table>
<thead>
<tr>
<th></th>
<th>End of 1930</th>
<th>End of 1933</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss</td>
<td>$7,014,000,000</td>
<td>$6,317,000,000</td>
</tr>
<tr>
<td>Gain</td>
<td>$697,000,000</td>
<td>$702,000,000</td>
</tr>
</tbody>
</table>

### REAL ESTATE OWNED

<table>
<thead>
<tr>
<th></th>
<th>End of 1930</th>
<th>End of 1933</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain</td>
<td>$411,000,000</td>
<td>$1,113,000,000</td>
</tr>
</tbody>
</table>

It is hard to escape the conclusion that the "mortgages lost" became so much "real estate gained" by foreclosure and purchase. It was just a little matter of accounting.

However that may be, the insurance companies, like the Metropolitan Life and the New York Life, have always been able managers of property. They do not hesitate to build when it seems good judgment to do so. (Readers will recall the Metropolitan's housing development in Long Island City.) They also engage outside architects for planning and consultation.

### Class C securities—mortgage bonds

The picture is less rosy for the architect. Most issues were made without any supervision by State banking or other departments. Many of the houses which issued the bonds are defunct. The only redress for the bondholders has been reorganization by their own committees. Generally they have foreclosed and bought in the property with little objection by the owner, whose equity was often too small to be worth a fight. In other cases, as in hotels where it was important to keep the owner-manager in possession, a new financial set-up has been arranged by which the bondholders receive, in exchange for their bonds, part cash and part stock. Under such ownership conditions it is not particularly likely that much construction will be undertaken—the more so as most buildings financed by bonds are comparatively new.

Class D securities, guaranteed mortgages, are loans on all kinds of property, urban and rural, small and large, old and new. Here, the situation is that the companies guaranteeing the payment of certain rates of interest and certain amortization of principal, are unable to do so because the properties do not earn enough. Hence the mortgages are in default and the companies in public or private receivership.

In New York, where the great bulk of the guaranteed mortgage business centred, most of the companies have been taken over, according to law, by the State Superintendent of Insurance. Their guarantees total $2,684,000,000, practically all in New York State. The Superintendent is making considerable progress in disentangling a badly knotted situation. Each...

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property is reorganized to stand upon its own feet, under its original ownership if possible. Otherwise it is foreclosed, bought in, and the reorganization is undertaken by a mortgagee’s committee. Here, again, it is difficult to see where the money is to come from if new construction is to be undertaken.

We now come to the largest as well as the most hopeful class of securities, those bank and trust company mortgages. These institutions—the big ones, at least—were well organized to handle real estate before the present catastrophe. They have always had property thrown on their hands by foreclosure. When wholesale foreclosures became the order of the day they had only to expand to meet the demands of the new amount.

How efficiently they handle their real-estate obligations is best illustrated by outlining the methods of one of them, the Emigrant Industrial Savings Bank of New York City. At the end of 1933 this bank held $291,000,000 worth of miscellaneous mortgages. Mortgages over $1,000,000 totalled $16,000,000. The largest individual mortgage was $2,700,000. All the rest of the mortgages were loans upon tenement and apartment property in Greater New York. The bank was managing at that time $14,000,000 worth of foreclosed property and almost $30,000,000 worth of buildings on rental assignments. As property is taken over the bank’s consulting architect, together with the appraiser and the real-estate department head, make a detailed inspection of the property and a report recommending what should be done with it. This is discussed at the regular Monday meetings of the bank officials and action ordered. Sometimes the remodelling recommended is quite extensive, as may be adduced from the expenditure to date—nearly $2,000,000. This is about 15 per cent of the total value of the property taken over.

Here is another instance of real-estate operation on an even larger scale. The Manufacturers Trust Company is one of the largest in the United States. It operates some fifty-five branches in New York City. Its annual income from rentals alone is $7,000,000, as of the end of 1933, which gives some measure of its holdings. These include: (a) Buildings owned outright; (b) Buildings leased and sublet in part; (c) Buildings operated under rental assignments; (d) Buildings owned by corporations whose stock is controlled as collateral for loans.

These buildings number nearly 200, and include office buildings, high-grade and lesser-grade apartments, tenements, lofts, factories, two- and three-family houses, dwellings, and vacant plots. It requires a full-fledged management department to operate all this property. It is, in fact, one of the most efficient anywhere. Inside, the department has 105 employees; outside, 400, including 40 mechanics.

In the case of this and other trust companies, the maintenance of real estate operated is of a high standard of excellence. Considerable remodelling operations are undertaken if it is calculated that the revenue of the property will be increased thereby. In some cases substantial additions have been made to buildings and in others vacant property has been built upon. Architectural firms are retained for all but minor operations.

This gives a quick, comprehensive review of the present status of building ownership, and the immediate prospect of architectural employment on the different classes of foreclosed property. There is this to be added, however:

Banks, trust and insurance companies, while they do not want to stay in the real-estate business, are prepared to keep their holdings over a period of some years. The president of one of them tells us that they are proceeding on the basis of a liquidation period of seven years. In other words there will be no dumping of real estate. Dumping, indeed, would defeat its own purpose.

So it may confidently be expected that the tenure of responsible ownership will be sufficiently long to lead to a considerable amount of reconditioning and reconstruction. How much new construction there will be is problematical. As the buildings are liquidated, e.g., sold for demolition, the probability that the buyer intends to build approaches a certainty.

The government’s action on the proposed further extension of the public works program, of which a large proportion is to be for all kinds of housing, will be the dominantly decisive factor.

In an article to follow, next month, Mr. Farrell shows in detail what has been done by one bank in rehabilitating three apartments of widely differing types... —EDITOR.
Luminous Tubes for Lighting

By Eugene Clute

It is a long stride from the neon signs, whose orange-red glow has become a feature of every Main Street throughout the land, and from the old Cooper Hewitt mercury lamps, whose ghastly greenish-blue light has had a limited use in industrial plants for more than a generation, to the new light sources that produce synthetic daylight from a combination of improved neon and mercury-vapor units, and decorative colored lighting as well. These new tube lights bring a new aid to interior lighting and are sure to play an important part in the illumination and decorative lighting of the larger interiors. They have passed the experimental stage and are ready for architects to use.

They possess very great advantages over the familiar incandescent bulbs for certain purposes. For one thing, visually white light can be produced by their use at about the same cost for electric current as light from incandescent lamps, which is far from white. There is a growing demand for the approximation of daylight color and for decorative effects in colored light in interiors, which the new tube lighting is especially well able to meet.

Since these gaseous-conductor lamps give colored light, they afford a highly efficient means of using color as an important feature in the decorative lighting of such interiors as theatre auditoriums and other large spaces in which striking schemes of illumination are often desired. The cost of producing colored light from the light of incandescent bulbs for such large-scale installations is practically prohibitive, mainly because from 85 per cent to 98 per cent of the light output of the incandescent bulbs, varying with the colors, is absorbed by the colored glass that must be used to give the light the desired hue through filtration. Gase-
ous-conductor tube lamps, on the other hand, give light that is already of the right color or nearly so, requiring little if any modification by means of tinted glass tubes and avoiding the attendant waste. All or nearly all of the light produced by these tubes, again depending upon the color, is used, and consequently the cost for electric current is only a small fraction of the cost of producing decorative light in colors with incandescent bulbs.

Incidentally, much less heat is given off by these tube lights than by incandescent lamps, and this is an important consideration where the installation is large, such as in the decorative lighting of auditoriums or other places in which a large number of people assemble. It reduces to a minimum the need for ventilating the light sources—often a serious problem where many incandescent bulbs are used. It also tends to make much easier the maintenance of a comfortable room temperature in warm weather.

Tube lighting does away with the task of constant re-lamping—a considerable item of expense in any building where there is a large installation of incandescent lamps, chiefly for the labor involved. The tubes are very long-lived and the maintenance of such units is not difficult.

The neon tube lamps for interior lighting differ very greatly from the neon tube signs, though the light of both is due to the fact that neon gas gives off an orange-red light when a current of electricity is passed through it under suitable conditions. Neon is one of the five rare gases that are present in the earth's atmosphere, the others being helium, argon, krypton, and xenon. The practice of calling gaseous-conductor tube lighting of all kinds "neon" is incorrect. It is neon light only if the tube emitting it contains neon gas. Since this gas never gives light of any other color than red, such terms as "white neon," "blue neon," and "green neon" light are incorrect. These colors in signs are produced by tubes containing some other rare gas or gases, but not neon.

Luminous tubes as used in signs give very little light, though they appear very bright and can be seen for long distances. It was necessary to produce a type of unit much more efficient in light production, and more compact, before light derived from a tube containing a rare gas could qualify as a means of interior lighting in more than a very limited way. Also the sign tubes operate on high voltage, requiring the use of a transformer in conjunction with the tube to step up the current, and this is an obstacle to the employment of this type of unit in interior lighting. For some years scientific experimentation has been carried on intensively with the aim of producing a type of neon-tube lamp suitable for lighting purposes. This effort has resulted in the production of the hot-cathode, low-voltage type of neon lamp. It is highly efficient in lumen output for the wattage of current consumed and operates on the 110-112-volt lighting current commonly furnished. This type of neon lamp is used in conjunction with mercury-vapor lamps to produce the new visually white light; it is also used independently to produce red light efficiently and economically for decorative lighting effects.

The mercury-vapor lamp used in combination with the neon lamp in producing approximately white light and color effects is also of a new and highly developed type that is very efficient in light production. It operates on the usual 110-120-volt lighting current. The light it gives is of the greenish blue characteristic of mercury vapor lamps. Very little modification, by means of an enclosing tube of light
blue glass or of light yellow glass, is needed to convert this light into a fine blue or a good green.

So, with neon light for the red and mercury-vapor light, properly modified, for the blue and green, we have the necessary components of white light. By placing tube lamps giving light of these three colors together in a light source with proper reflectors to blend the colors, we can produce a mixture white in effect. By using them more or less independently we can produce decorative colored lighting.

Some very interesting practical applications of this new tube lighting have been made in a room designed by Hood & Fouilhoux, architects, and only recently completed. It is a conference room in the General Electric Company Building at Lexington Avenue and Fifty-first Street, New York City, used for the demonstration of scientific advances in the application of electricity and for the presentation of electrical experiments that suggest some of the almost unexplored possibilities in the field of electrical research. It is known as the "House of Magic." Several photographs of this room are shown here.

The principal light source is a trough fixture suspended from the ceiling down the length of the room. The gaseous-conductor tube lamps it contains can be seen in one of the photographs taken looking down into the fixture. There are seven of these units: two neon lamps with clear glass tubes giving red light; two mercury-vapor lamps with tubes of pale yellow glass giving green light, and three mercury-vapor lamps with tubes of light blue glass giving blue light. The auxiliary—or accessory—apparatus required by these lamps is seen also in this view of the inside of the trough. It is usually well, when space in the light source is available, to have the auxiliaries closely connected with the lamps, though it is not necessary. This apparatus may be at some distance, concealed in another part of the room, permitting the use of a smaller fixture. But in that case the wiring connecting the auxiliaries with the lamps must be of a special kind. There is no great difficulty about this, however. Usually there is nothing to prevent designing the housing of the light source to accommodate the auxiliaries, as well as the lamps, as in this instance.

The light of these lamps is projected upon the ceiling, which diffuses, blends, and reflects it downward into the room as a flood of soft white light. A very interesting decorative effect in colored light is produced upon the ceiling itself, for there are areas of color corresponding to the colors of the lamps directly below them and areas of other colors between these, caused by the mingling of adjacent colors, all grading out in progressively lighter tints away from the light source until they are lost in white near the edges of the ceiling. Then, too, there are varied enlivening colors in all of the shadows in the room. Blue, red, orange, green, cerise, and other hues. They add to the interest and are not disturb-
thoroughly. This light source is built in and is concealed at the ceiling just in front of the platform, upon which it projects its light.

There are in this room two new forms of incandescent lighting that I believe are sufficiently interesting to justify my digressing to describe them briefly. The Cove lighting around the main ceiling employs the new lumaline tubular incandescent filament lamps, which are so designed that they can be set to form a practically continuous line of light. They can be seen in the photograph that shows the interior of the trough fixture. The other feature is a new type of luminaire mounted on the piers between the main room and the broad, clear floor space that extends all along one side of the seating area. Each of these luminaires consists of an arrangement of three control lenses on a saw-tooth plan, with 100-watt incandescent lamps with reflectors back of them, all mounted in a suitable housing. These units, which are very neat and unobtrusive, project widely distributed light upon the wall opposite to the piers, from which it is reflected. They are especially well adapted to the lighting of the lobbies of motion-picture theatres, office-building lobbies, and corridors, and to other areas in which it is desired to provide well-distributed light, free from glare, by means of simple compact light sources. The lighting of the room is under thyratron control.

The decorative treatment of this room may well be described: Walls are painted a very light tint of French gray, and the border of the ceiling around the white central panel is painted black; upholstery of the chairs is of a plain leather-effect fabric of light Chinese vermilion color, and the draperies at the sides of the platform are of a red velvet of the same hue; sides and back of the platform recess are hung with black velvet in folds; carpet is taupe. With this scheme the trough fixture harmonizes well, for its outer surface is of gun-metal mirror glass, and it hangs from tubular supports in chromium finish.

The lighting installation in this room was conceived by A. L. Powell, the supervising illuminating engineer, and carried out under his direction. The fixture was designed by the architects, Hood & Fouilhoux, in collaboration with the A. Ward Hendrickson Co., Inc., who constructed it.

This new tube lighting lends itself to a very wide variety of treatment. As can be seen readily, the lamps can be arranged in a row in built-in light sources, or in fixtures against the ceiling, quite as well as in this trough fixture. Also, tube lamps of this gaseous-conductor type can be placed side by side and close together in ways other than the arrangement seen in the light source that illuminates the platform in this room. They might very well be concealed back of large, translucent wall panels of glass enriched with sculptural ornament, either carved or cast in the glass. The characteristics of these units, from a design standpoint, are such as to make them very flexible in working out treatments to meet the architect's requirements.

Detail of the built-in light source above and in front of the platform, in the same conference room, showing the mercury vapor and neon tubes for the production of a light closely approximating daylight. There are also three mercury vapor ultra-violet lamps and the upper series of incandescent lamps, making possible many special effects for demonstration purposes.
Photographs by Herbert Fulton

The Royal Institute of British Architects has had four homes in its hundred years of existence. The present one on Portland Place, just finished, was the subject of a competition open to every member and student of the Institute in Great Britain and overseas.

G. Grey Worum, Architect

New Home of the R. I. B. A. in London
The first floor contains the main ceremonial portion of the building, used for receptions, banquets, exhibitions, and also for examinations of the students.

The second floor is given over to committee rooms, which extend as a mezzanine around the upper part of Henry L. Florence Memorial Hall. On the third floor, here shown, an open-access library is housed, together with offices of the R. I. B. A. Journal.

The ground floor houses the office organization of the Institute, grouped about the upper part of the Henry Jarvis Memorial Hall, which starts at the basement level. This latter hall is the general meeting room of the Institute.
The side of the building on Weymouth Street. Exterior walls are of Portland stone, windows of steel painted olive green. The relief sculptures are by Bainbridge Copnall.
Foot of the side staircase, the floor of which is in cream-colored terrazzo. The jambs and soffit are in cream and gold plaster, modelled by Bainbridge Copnall to illustrate the tools used on the building.

Main entrance on Portland Place. The sculptured figures on the columns symbolize the spirit of man and of woman as the creative forces of architecture. James Woodford was the sculptor for these and also for the bronze doors.

In the Henry L. Florence Hall, looking toward one of the entrance doors. The piers are of polished stone carved in low relief to illustrate man and his building through the ages—Bainbridge Copnall, sculptor.
The main staircase hall, as seen from the balcony of the side staircase. The columns are cased in Ashburton marble, mostly black with a faint dull red veining. Treads and landings are of blue Demara marble; risers are of Black Birdseye; balusters and stair railings are of silver bronze, ebonized mahogany and etched glass, lighted from tubular lights in the base.
The library. In the rounded ends of the cases the architect has put his radiators and his indi-
direct lighting units. The steel of these cases is enameled blue outside, yellow on the inside,
with moulding of polished silver-bronze.

The dais end of the Henry Jarvis Memorial Hall. Woodwork is of figured teak, olive ash and black bean. The meeting-room seats 350.
ONDARROA, Spain

From the pencil drawing by
JOHN WRIGHT ARMSTRONG

ARCHITECTURE
FEBRUARY, 1935

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ONDÁRROA, SPAIN
From the pencil drawing by
JOHN WRIGHT ARMSTRONG

ARCHITECTURE
FEBRUARY, 1935
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Many of the architect's creations fail to measure up to his expectations. Here is one of a series, however, that satisfy, in a measure, the designers themselves.

(Large details opposite)

Living-room Bay, House of G. T. Vought, Montclair, N. J.

HARVEY STEVENSON & EASTMAN STUDDS
ARCHITECTS
Living-room Bay, House of G. T. Vought
Montclair, N. J.

Harvey Stevenson & Eastman Studds, architects

ARCHITECTURE
FEBRUARY, 1935
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I GREATLY admire the architectural work and the architectural writings of Mr. H. Van Buren Magonigle, whose point of view in both these fields is illuminating.

I have been reading with considerable zest and not a little excitement the recent exchange of views between Mr. Magonigle and the rest of the architectural profession, and while I cannot wholly agree with the former I am certain that his criticism of the American Institute—a grand old organization founded with an unselfish purpose—is very closely skirting the truth.

The unselfish purpose of the Institute has been accomplished, the architect has been recognized as an artist. The Institute now needs to establish the place of that artist in the national scheme and see that he is not ousted from it.

That is a difficult matter—it needs men of vision to see what and where that place ought to be, and men of diplomacy to see that it is attained and occupied.

The solution is that the Institute needs more admirals at the head of it. It is an axiom that a good administrator makes a poor architect and, conversely, it appears to be true that a good architect makes a mediocre administrator. At any rate, it has been the practice of men who have forsaken in this profession to employ hard-headed persons to manage the administrative side of their offices.

Similarly, the American Institute, which is the business and diplomatic voice for the whole profession, should be run by persons who preferably have not the fine, glorious, inspirational temperament of the top-notch designing architect. You need men with the ability to find facts and fit conclusions to them instead of finding agreeable conclusions first and seeking facts to fit them. You need persons with the talent to understand that there is another side of every debate, and that in every honest controversy the aspirations and needs of the other side must first be understood before the steam roller is started.

The Institute needs ambassadors to fit the organization and its members logically into the social scheme, so that the architects will render the greatest service not only to themselves but to the agency by whom they are employed, whether it be government, state, or private business.
Two recent works coming out of the Supervising Architect's office: at left, Kensington Station of the Brooklyn Post Office—Lorimer Rich, designing architect; rendering by Schell Lewis. On the right, Station M, U. S. Post Office in New York—William Dewey Foster, designing architect; rendering by Rees Weston

Architectural News in Photographs

In the arcade on the east side of the Post Office Department Building in Washington, an element in the Triangle, now almost completed. Delano & Aldrich, architects

The new Men's Bar of the Waldorf-Astoria, New York City. Schultze & Weaver, architects

Carillon Tower for the University of Wisconsin, now under construction. Arthur Peabody, state architect

Another example of the strong tendency towards making the speaking pipes of an organ take the place of a false screen. Designed by The Voiteler Holtkamp Sparling Organ Company

The new Bar in the Benjamin Franklin Hotel, Philadelphia. Lyman W. Cleveland, interior decorator
Additions to the Executive Offices adjoining The White House, part of which are below ground, lighted by a central court. Designed by Eric Gugler in collaboration with the National Park Service.

Entrance front of the Supreme Court Building, Washington, which building is nearing completion. It is in this pediment that Robert Aiken has placed figures strongly reminiscent of Cass Gilbert, Root, Hughes, Taft, and the sculptor himself.

Winning design for the broadcasting auditorium of WGN, adjoining the

The new Post Office and Court House in Pittsburgh, recently dedicated. Towbridge & Lixington, architects, in collaboration with the Supervising Architect's Office.

Hotel Hershey, a recent addition to the model community near Harrisburg, Pa., built by the chocolate manufacturer. D. Paul Wimer, architect.

An aerial photograph of the Mellon Institute, the exterior of which is now finished. The building will be occupied late in 1935. Janssen & Cacken, architects.
Seattle's Demonstration Bungalow

The Washington Chapter, A. I. A., with the aid of the Seattle Trust Co. and the local building industry, has been showing the people of the community what could be done with a house built in 1899. In a competition, George W. Groves, architect, was given the alteration job. Hundreds of visitors troop through the place daily.

Below are shown, at left, the 1899 shack as it was; at right, the living-room of the rehabilitated structure.
Therefore it is essential that as few changes as possible be made. The steel contractor cannot be expected to cut and drill holes for other trades that are not specified or shown on the working drawings. Hence it is necessary for the architect to be fully aware of the requirements of other trades before finally approving all details of the shop drawings. The steel of course must conform to the standards set by the American Society for Testing Materials, but the architect may well hesitate in trying to improve upon what is recognized by well-known authorities as perfectly safe and satisfactory.

Another important point for the architect to decide is which parts of the steel framework are to be riveted and which are not. It should be borne in mind that the work must be so laid out that a riveting gang can be given steady work; otherwise the cost of riveting will run entirely too high. The drawings should specifically point out those sections which are to be riveted and those which are not.

There is what might be termed the small steel work—lintels and anchors—which the steel contractor usually supplies but in most cases does not set. He will deliver these on the job, but the bricklayer or stone mason will set them unless they are of such a size that it will take a gang of men or a derrick to swing them into place. The lintels and anchors should be painted with a shop and a field coat before they are put in place. In specifying lintels care must be taken to see that their over-all width is sufficient to insure a good bearing on the masonry. Too often they are called for about eight inches longer than the window opening, which will give them little or no bearing margin on the masonry when it is considered that they must extend over the window box also (Fig. 1A). The architect will do well, also, if he includes in his description of the lintels their sections as well as their proper lengths. Too often a lintel of smaller section is used to the advantage of the contractor but to the detriment of the building. The number, weight, length and size of the anchors are details in an item that is also well worth setting forth if there are important members to hold.

In the rush to get the steel designed, very often the other trades are overlooked or forgotten. Particularly is this true of the plumbing. Both soil and vent lines should not be expected to be bent around the steel work (Fig. 1B). To provide offsets in plumbing work is rather expensive. Rather than attempt to offset lines, provision should be made in the framing so that lines can be run straight and in separate shafts if need be. Apropos of shafts, it might not be amiss at this point to mention elevator shafts. Obviously these must be plumb. Usually the steel contractor is asked to guarantee the plumbness within a certain measure of tolerance, so that when the elevator guides are set there will be no special material needed to bring the rails out to a true line.

It is customary in most fireproof buildings to establish what is known as a "four-foot mark." This is an arbitrary height established above the beams so that measurements may be run from it. It is absolutely essential that this mark be correct, and to this end the architect should call upon some one of responsibility.

**Better Practice**

*By W. F. Bartels*

**STEEL AND MISCELLANEOUS IRON**

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to establish it. The one designated is usually the general contractor or his superintendent, and if this is the case he should be made solely responsible for its accuracy. I had occasion one time to be supervising a building where there was under the immediate charge of an "old-timer." The superintendent, with his assistant, was conscientiously ticking off the four-foot marks on all exterior columns, not only from the established beam levels but was going to the extra trouble of checking floor-to-floor heights. This was indeed a lot of extra work, and I for a time debated whether or not it was worth while. I was later convinced beyond a doubt that it was, after seeing it done in a lackadaisical manner. On a low building, however, it had settled somewhat, and (3) the engineer had a doubt that it was entirely safe during its construction. By this is meant that it is well braced and bolted, so that it may withstand all strains that are put upon it.

The steel contractor should have it called particularly to his attention that it is entirely his responsibility to see that all his plans are properly set. Then he should be called upon to make sure that no steel work is riveted until such time as the steel has been plumbed up and checked as to its correctness. The architect would also do well to investigate the latest steel-construction methods and include it in his specification. This information will include allowable differences in column lengths, allowances for columns to be out of plumb, type and kind of rivets and their use, together with much other valuable information.

Steel can play an important role in the modern small house—more than is generally supposed. By introducing light beams and other steel sections, the architect is able to give entire, entire responsibility to the builder to see that his plans are properly set. Then he should be called upon to make sure that no steel work is riveted until such time as the steel has been plumbed up and checked as to its correctness. The architect would also do well to investigate the latest steel-construction methods and include it in his specification. This information will include allowable differences in column lengths, allowances for columns to be out of plumb, type and kind of rivets and their use, together with much other valuable information.

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finally, no matter what paints are used, each coat should be of a different color so that the task of the man checking the painting will not be impossible.

4—STAIRS

Stairs should be given especially serious attention by the architect. As a rule the interior stairs are a mere framework, upon which treads are to be placed. Nevertheless, attention should be given to the gauge of the metal. It must be remembered that in being frequently cleaned, there will be dampness remaining all around the edges, which will cause rust. Obviously this is even more true where the stairs are in an exposed position, subject to the weather. The possibility of deterioration causing serious danger is recognized by the Building Department of New York City, which has recently issued a ruling which requires the slats forming the treads of fire-escapes erected under its jurisdiction to be one-quarter inch in thickness, as compared to the three-sixteenths of an inch previously allowed.

Wherever possible, stairs should not be run around an open well-hole, because this is not only a possible danger in itself, but oftentimes a waste of space. The stairs should also be so laid out that when placed against a wall they may be shifted slightly to prevent plaster applied to the wall from covering part of the stringer if the wall is not absolutely true (Fig. 4-A). This overlapping can easily be overcome if there is a small allowance made so that the stair can be moved slightly. When the stairs are completed they should be given a neat appearance by having the construction bolts clipped off close (Fig. 4-A). This cutting will also serve the purpose of keeping the nut from turning. Where iron stairs are to have treads of cement or marble, they should be well protected against the ordinary abuse of stairs in a building under construction (Fig. 4-B). This is especially so where the tread is to be of cement or composition, because if the nosing is damaged here it will continue to be noticeable during the entire life of the stair.

With the drive for the replacement of the old-law vertical fire-escapes in New York City, it may be of interest to examine some of the types legal at the present time. They are indeed a far cry from the vertical ladders people were formerly supposed to descend in case of a conflagration.

Before leaving the subject of stairs, it might not be amiss to check the specification to see that all ladders for tanks, roof scuttles, and other infrequently used places are included.

Window guards and grilles are often overlooked until the bricklayer is ready to build them in, and then they are obtained in such haste that little or no consideration is given to their size or design. Because they are to be used to prevent access through the window they guard, it is always necessary that they be so embedded in the masonry work or made an integral part of the construction that they will not be easily removed.

The setting of iron or steel bucks may well be kept under the specification heading of Miscellaneous Iron. So also may fire doors and other large metal doors, such as
rolling iron doors, heavy garage doors, etc. In the case of the latter the manufacturer generally gives printed instructions in order that there may be no confusion in the setting or hanging of his product. The guides must be properly set and weights balanced in order that his product may work satisfactorily; hence the use of iron workers for this work.

Metal access doors comprise another item that may be furnished as miscellaneous iron work, although in many cases they are set by carpenters. They should be of a gauge which will not buckle. Added to this they should be reinforced so that there will be no danger of their being twisted out of position once they are set in the wall (Fig. 4-C).

Gratings also come under miscellaneous iron. They should be specified as to the depth and width of their members, as well as for the area they are to cover. Too often an architect specifies a grate by a general or trade name, only to be disappointed after he sees it in place. He had thought that a certain size of bar was used to make the grate, whereas the name he specified only represented a general type.

Sidewalk doors are often given but little attention, with the result that they become annoyingly loose when used, as well as dangerous to pedestrians. The frame should be set in a solid framework of concrete, to which the door frames must be securely anchored. Too often they are fastened by lag screws which, when properly used, are satisfactory, but more often are provided with no solid material to hold them (Fig. 4-D).

At first glance one might think that wheel guards went out with the horse, but such is far from the case. All classes of automotive vehicles make them more necessary than ever, if the architect and owner are desirous of keeping the corners of entrances intact (Fig. 4-E). Also, protection for interior reinforced concrete columns is indispensable for the interior of a garage. Even hand trucks may do considerable damage, not only to the decorating but perhaps to the structural work itself if not protected. Such protection is afforded generally by angles being attached to the corners and securely anchored in the concrete work (Fig. 4-E). Where there is heavy hand-truck traffic, such as in freight halls, then it may be desirable to install a metal wainscotting. This metal should be of such gauge that it will not be torn or dented; generally 10 gauge is heavy enough.

Coal chutes should be specified, and not left to the discretion of the iron contractor. Faulty ones may too easily prove a source of continuous annoyance. The frame should be one which can be securely anchored, and the lid should be such that it may be fastened securely and cannot be opened from the outside.

5—RAILS; FENCES

Iron rails are in general attractive but also expensive. The architect can contribute some help by using standard parts in their design, which will keep down the cost. The panels in iron fences should not be too long and, if over four feet, should have a centre support. The main supports or posts should be set in concrete of a good mixture; the depth of the concrete support should be about three feet. There is on the market a very good fence which eliminates the necessity of digging holes for posts. This fence has its posts supported by driving two supporting bars through a patented holder at the ground level, and is very satisfactory (Fig. 4-F). Other concerns have bars and rails of various shapes which give added strength to their fences, and are also highly desirable. When an iron baluster is set into stonework, great care must be taken: the stone should be first warmed and then, after the baluster is inserted, lead is poured around it. If possible the hole should be made in the dove-tail manner, as a dentist drills a cavity, so that the filling will not come out—larger at the bottom than the opening.

A pipe railing is inexpensive, and suitable to many uses, having unusual strength for its size. Where pipe rails are anchored into masonry, it should never be by means of screws in wooden plugs. They will soon rot and the fence will be easily pushed out of position. Lag screws should always be put in the metal shield which comes for this purpose, and if properly installed will last as long as the fence.

The wire mesh that may be used between fence supports is also an important item, because the cost of it will probably be as much as the balance of the fence. The thickness of the wire making up the netting should be specified, and note made whether or not it is to be galvanized. Most of the fencing on the market today is galvanized, as this is a great rust preventive. It might be noted here that wire gauges are different from metal gauges, and must not be confused with the latter.

Flag poles on the top of a building are often among the last items to get any consideration. If made rigid, when the top is not to paint them or the halyards become twisted, it means getting a steeple-jack. It is more sensible to provide poles which can be raised or lowered by any of the building employees (Fig. 5-A), and be kept in good condition without the necessity of employing a specialist.
Fireplace end in the living-room of the house for Harold S. Willis, Great Neck, N. Y., of which the plans and exterior photographs are shown on the following two pages.

Six Small Houses

DESIGNED BY

Roger H. Bullard, Architect

ARCHITECTURE

FEBRUARY, 1935

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The house has a two-story main portion with an attic, to
which is attached a two-story wing without an attic. Here
are ten rooms, including a laundry on the first floor, and an
attached garage with space for two cars. On the walls are
shingles painted gray.

House of Harold S. Willis, Great Neck, N. Y.

Below are the plans of the first and second floors. An attic
stairway provides for two bedrooms and a bath above, when
future expansion is desirable.
The garden side of the Harold S. Willis house, on which Mr. Bullard has utilized the bay windows in the living-room and dining-room as supporting members for the overhang of the second story.

George H. Van Anda

The front door and staircase as seen through the archway between the hall and dining-room.
An example of the story-and-a-half house with central chimney and a gambrel roof. Walls are of narrow siding, painted white.

There is, possibly, considerable saving in the small house work by running the stairway up between plastered walls without the necessity for balusters and the usual expensive woodwork on the stair ends.

There is an unusual feature in the outside shutter door which has on its inside a screen mesh.

The slight sinkage of the fireplace corner in the living-room gives an excellent opportunity for differentiating this wall by panelling.

House of Arthur L. Willis, Flushing, N. Y.
A compact plan giving nine rooms in the full two stories and attic, in addition to a laundry in the cellar. The large living-room is achieved by putting the stairway at the north end, and abandoning the axial entrance.

George H. Van Anda

It will be noticed that the bearing walls carry up through first and second floors. Each of the four bedrooms is given a corner exposure with cross draft.
The living-room as viewed through the archway from the entrance hall. While the living-room is of generous size for a small house, its spaciousness is increased by this wide opening into the hall beyond.

From the living-room, looking across the hallway at the north end of the house. The archway between hall and living-room is repeated at the rear end of the hall, partly screening the coat closet and entrance to the lavatory under the stairs.

ARCHITECTURE
FEBRUARY, 1925
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Considering the advantages often to be gained by having the main entrance at a corner of the building instead of in its centre, it is surprising that this expedient is not more frequently adopted.
An example of the nearly square type of plan, with one story and a half, as carried out in stucco and brick, again with a central chimney. The plan provides a bedroom and bath on the first floor with room for further expansion in the attic.

House of Paul G. Pennoyer, Locust Valley, N. Y.
House of Albert R. Crone, Phillipse Manor, N. Y.

Another example of the central chimney type, with a story and a half, and a simple gable roof. Here again the stairway ascends between the walls as a measure of simplification. Walls are of shingles painted in two shades of gray.
While the house itself is small, it occupies more than the usual amount of land, with its greenhouse off the living-room, an open shed, and a garage, all under a continuous roof, forming an L about the fenced courtyard. Color of walls is the old New England barn red.
Rental Differentials in Low-Cost Housing

A TABLE OF PLAN COMPARISONS ILLUSTRATING A RAPID METHOD OF ASCERTAINING THE EFFECT OF PLAN CHANGES IN TERMS OF RENTAL

By Albert Mayer

THE so-called “Table of Plan Comparisons” now being extensively used by designers and supervising agencies of low-cost housing—among these the New York City Housing Authority and the necessary aid to housing design. It supplies a rapid method of evaluating the difference in various plans, in terms of rental per room per month. Charles Haines and I, of the Housing Study Guild, worked out the method in connection with the organization’s study and report on what is known as the Queensbridge Project, a tract of some thirty-five acres in New York City. The method can be applied anywhere and to any type of building, but the framework for actual cost figures must be worked out for each locality, in accordance with the local wage scale, material prices, and other variables.

To work out the table for the first time for any locality is a sizable job, but thereafter it can be applied to plans indefinitely, with great rapidity and satisfactory accuracy. As the method is new, a detailed explanation seems desirable in this article. But those who have adopted it agree that the method is easy of application.

In any housing project a large number of sketch plans will inevitably be made. Each has certain advantages and certain disadvantages of plan and operation as compared with others. In the project mentioned there were fifteen subjected to comparison by our table. It is important to know the extra rental caused by retaining a certain room arrangement as against some other less convenient one, or the difference caused by varying room sizes, or various plumbing arrangements. One man says, “Let’s have larger rooms, because there is practically no difference in cost—you’re only adding more enclosed air.” Another argues, “In low-cost housing you must use minimum room sizes, because even if diminished sizes don’t lower cost and rent proportionately, you have to make the substantial economies resulting from less walls and partitions, less heating, etc.”

Such arguments go on in every office, and hitherto no one has known how to get the answer quantitatively except by the tedious method of making complete estimates for every different sketch—which no one does. And the quantitative answer is the important thing, because if it costs only 5 cents extra in monthly room rental to retain an advantageous feature, you will probably do it; if it costs 40 cents per room per month, you may have to discard it. By looking at plans you can’t tell whether the difference will be 5 cents or 40 cents; nor will you get complete estimates on each sketch.

The method to be described will permit rapid evaluations in terms of rental. An advantage of finding the differential immediately in terms of rental is that it takes account of both first cost and operation-maintenance. The usual estimate takes in first cost only, though the effect of operation and maintenance costs is sometimes more important.

In the design of the typical floor plan for low-cost housing, there are two chief problems: 1—The adoption of certain standards, which will meet the requirements of the people to be housed. 2—The arrangement of these standards in space.

Our method of plan analysis depends essentially on selecting the factors that vary appreciably as between plans, to find the differences. Some factors are substantially constant no matter what the plan. Such factors are: electric wiring and fixtures, plumbing fixtures, refrigerator, range, sash, glazing, etc. The variables which cause appreciable differences are ten in number, referred to below as “criteria.” All items of first cost and operation-maintenance affecting these variables are allocated. The table covers only building factors; the effects of land cost and coverage are not considered, as there are separate tables available for this.

This article is necessarily a résumé of the complete study as published by The Housing Study Guild (101 Park Avenue, New York City). It is suggested that anyone purposing to use this method for his own problems obtain the complete study, for a good tool may be misapplied unless one is thoroughly aware of its exact sphere of application. Such tables as these are of the greatest value when properly used, but give misleading results when used to cover purposes for which they were not intended.

The room is assumed as the basis in this study, as this is the customary rental basis. The rent differential might just as easily be calculated on the basis of the person housed, or the apartment.

Definitions

1. Room. Includes all living-rooms, sleeping-rooms and kitchens.
2. Kitchen. Any room completely equipped for cooking, that is not less than 4’6” in its lesser dimension and that has its own window and door.

Criteria

The following are plan variables. They are calculated by determining the average number of units of each per room:

1. Gross area (sq. ft.) per room.
2. Exterior wall (lin. ft.) per room.
3. Partition (lin. ft.) per room.
4. Doors, number per room.
5. Closets, number per room.
6. Wardrobes, number per room.
7. Stair (fraction per floor per room).
8. Incinerator (fraction per floor per room).
9. Elevator (fraction per floor per room).
10. Plumbing, per room.

Both first cost and operation-maintenance cost are calculated for each of these criteria. First cost is reduced to rental per room by multiplying first cost by a percentage which is the total of interest rate,
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<th>PLAN NUMBER</th>
<th>1</th>
<th>2</th>
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<th>5B</th>
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<td>116 SQ FT</td>
<td>123 SQ FT</td>
<td>125 SQ FT</td>
<td>111.5 SQ FT</td>
<td>123.3 SQ FT</td>
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<td>12' 6&quot; X 12' 6&quot;</td>
<td>12' 6&quot; X 12' 6&quot;</td>
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<td>5 - 4 - 3 - 4</td>
<td>5 - 4 - 3 - 4</td>
<td>5 - 4 - 3 - 4</td>
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<td>7</td>
<td>12</td>
<td>6</td>
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<table>
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<td></td>
<td>CIRCUITIA</td>
<td>RENT PER RM</td>
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<td>0.10</td>
<td>0.14</td>
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<td>8. INCINERATOR</td>
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<td>0.071</td>
<td>0.10</td>
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<td>$7.17</td>
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</table>

* NO CLOSETS ON THESE PLANS -- WARDROBES ONLY WERE USED
* SEE TEXT OF ARTICLE FOR EXPLANATION OF PLUMBING VARIATIONS
* NO -- AS THESE ARE FOUR-STORY BUILDINGS
* NUMBERS 4, 5, 6, AND 10 NOT INCLUDED, AS THESE COSTS DO NOT APPRECIABLY AFFECT THE MAINTENANCE-OPERATION

Table of Comparison for Seven Plans as to the Rental Effect of Variable First Costs and Maintenance Costs
amortization rate, and tax rate. This percentage is called the Rental Factor. For the rates of taxation and finance used in our project, this figure was 0.71 per cent per month; that is, every $10 of first cost means about 7 cents per room per month in rental. Rental dollars due to first cost appear under “A” of the table on page 98; rental dollars due to operation-maintenance appear under “B.”

**Setting up the Table**

1. Establish the unit first cost of each criterion, and the unit maintenance cost. A specific example of doing this, to establish the effect of varying the amount of exterior wall per room, is as follows:

   To ascertain Criterion 2 under “A” in the table, divide the total lineal feet of exterior wall by the number of rooms.

   Now take the typical wall section. We find the brick area is 80 per cent; the window area, 20 per cent.

   4” face brick .................................. $ .49
   8” common brick .................................. .59
   Plaster .................................. .09
   Decoration .................................. .03
   Damp-proofing .................................. .02
   Total of brick area per sq. ft. $1.21

   Window frame and sash .................................. $12.50
   Glazing .................................. 4.00
   Caulking .................................. 1.50
   Hardware .................................. 1.50
   Weights and cord .................................. 1.00
   Painting .................................. 1.00
   Total per window .................................. $21.50

   Since the average window size in this particular case, as in several projects of the type, is 4 x 5 ft., the window cost per sq. ft. is $1.08.

   Taking the $1.21 times 80 per cent, plus $1.08 times 20 per cent, we get $1.18 per sq. ft. for the exterior walls; or, multiplying by 9 for story height, we get $10.62 as the cost of exterior wall per lineal foot per story. To this we add the cost of our heating plant per lineal foot, $2.78 (1.82 sq. ft x $1.50), to reach a total of $10.62 + $2.78 or $13.40 as the cost of our typical wall section per lineal foot of story height.

   The cost of wall footings and parapet add an increment:

   Parapet, 3’ at $1.13 ......................... $ 3.39
   Coping .................................. 45
   Flashing .................................. 8.00
   Footing—Concrete, 5/27 cu. yd. at $10 1.85
   Reinforcing steel, 7 ft. at 5 cents 35
   Excavation, 2/9 cu. yd. at 25 .45
   Backfill .................................. 15
   Brick to first floor .......................... $3.39
   Forms, 8 sq. ft. at 15 cents .................. 1.20
   Total per lineal foot ...................... $12.03
   Dividing by 4 (four-story building), total per story .............. $3.01

   Parapets and wall footings per lineal ft. .......................... $3.01

   Exterior wall of typical story per lineal ft. .......................... $13.40
   Cost factor per lineal ft. .......................... $16.41

   Now to sum up, the Rental Effect equals the cost factor times the rental factor: $16.41 x 0.715 per cent, or $1.174 per room per month, the figure that appears in the table as the Rental Effect for item 2 under A.

   For operating-maintenance rental effect we proceed similarly:

   Redecoration cost, $0.01 per sq. ft. per mo. .......................... $0.01
   Heating cost, $0.27 per sq. ft. per mo. .......................... .35
   Height of interior wall, 8.5 ft. .......................... 21.75
   Redecoration, per lin. ft. per mo. .......................... 8.5 x .01 = .0845
   Heating, per lin. ft. per mo. .......................... 1.85 x .27 = .4975
   Total .......................... .5820

   Maintenance factor total .......................... .049

   2. By similar calculations, the
unit first costs and operation-maintenance costs for the New York area were arrived at for each of the criteria.

In regard to the plumbing, the problem is not so clearly quantitative. There are five possible plumbing arrangements: isolated bath; isolated kitchen; bath and bath back to back; kitchen and kitchen back to back; and bath and kitchen back to back. The criterion figure and rental effect for any plan are derived from the combination of these arrangements that is employed. In addition, a method is used that avoids fortuitously penalizing the small apartment, which of course has more plumbing per room than the larger apartment. It would be confusing to try to show all this in a table; any one interested as to the precise method of deriving these figures should communicate with The Housing Study Guild.

**METHOD OF APPLYING THE TABLE**

1. Calculate the number of units of each criterion per room, e.g., Plan 1 has an average of 116 sq. ft. net per room (see the table), and 173.8 sq. ft. gross.

2. For rental due to first cost, multiply the number of units by the factor for Plan 1, e.g., on Plan 1, 173.8 sq. ft. X $0.0092 = $1.60.

3. For rental due to operating-maintenance cost, proceed similarly: e.g., 173.8 sq. ft. X $0.0017 = $0.30, which appears on table, section B under Plan 1.

4. Proceeding similarly through the ten criteria, the products are added together; the totals are the rental per room per month due to the criteria. The results are not the total rental, because only the variables have been considered, and because land is excluded. But the differences as between the different plans, due to the characteristics of the different buildings.

**SIGNIFICANT RESULTS FROM THE TABLE**

Seven sets of figures—for seven plan variations—appear in the table; the first two are exactly comparable, as the net room sizes are the same at 116 sq. ft.; the second two are for net room sizes of 122 and 123 sq. ft. The last three sets of figures were made up to show the cost in rental of increasing room sizes while leaving all other characteristics the same. Plan 5A is the same as Plan 5 except that rooms are widened; Plan 8B is the same as Plan 8 except that rooms are deepened. The plans used are not presented as particularly good plans; they are simply average plans adapted to show the uses of the table.

The following points may be noted, among other results:

1. The maximum difference in rental between the most economical back-to-back plumbing arrangement and the least economical is only 3 cents per room per month.

2. Where the number of closets and wardrobes per room is the same in various plans, there is no appreciable rental differential due to differences in arrangement. The cost for each wardrobe added or deducted, however, is seen to make a rental difference of 14 cents per room per month.

3. The items of doors may make an appreciable difference. Plan 1 is economical of doors; the arrangement of Plan 5A requires more. There is a rental saving of 14 cents per room per month difference in rental due to this generally unconsidered item of the number of doors.

4. By glancing at Plans 1 and 2 one might jump to the conclusion that Plan 2 is the more economical. Quantitatively, the table shows that for exactly the same net room size, No. 2 could be rented for 72 cents per room per month less than No. 1 or almost $3.00 per month less for a four-room apartment. Over half of this saving is due to less exterior wall; about one-fourth is due to less exterior wall cost per room, i.e., more rooms per stair.

As between Plans 3 and 4, No. 4 could rent for 60 cents less per room per month than No. 3. Most of this (39 cents) is due to the greater number of rooms per stair. Most of the rest of the saving is accounted for by fewer lineal feet of partition. It is interesting to note that in some individual items the more economical plan is more expensive than the other.

5. Comparison between Plans 2 and 4 is illuminating. Plan 4, for only 64 cents more rental a month, gives rooms 8 sq. ft. larger and gives "privacy" to two-thirds of the apartments, while in No. 4 none of the apartments has privacy. [As here used, "privacy" means access from foyer to chambers without the necessity of passing through living-room, thus giving privacy to any one occupying the living-room as a sleeping-room.] This is traceable to less space required for interior corridors, and the resultant less partitioning.

6. The last three plans, 5, 5A, 8B, show the effect of merely increasing room sizes, leaving everything else the same or as nearly the same as possible. Plan 5 has average net area per room of 111.6 sq. ft.; Plan 5A has rooms 18.4 per cent larger, obtained by lengthening the rooms in a direction parallel to the exterior wall; Plan 8B has rooms 7 per cent larger, obtained by increasing the depth of rooms. Plan 5A must rent for 58 cents per room per month more, and 8B for 35 cents more than No. 5. Thus, to increase your room sizes by about 18 per cent increases rent by some 6 per cent in one case and 3½ per cent in the other. This confirms quantitatively what we all know, that to increase room sizes doesn't increase cost proportionately; and that it costs more to lengthen (widen) a room than to deepen it, because in the former you add 14 lineal ft. of exterior wall for every increase of 1 ft. in room size, while in the latter case exterior walls don't increase at all, except the end wall.

**ACCURACY AND LIMITATIONS OF THE TABLE**

Unit prices and wage levels current in New York City in the spring of 1934 were used. No prices obtained in this way can be entirely accurate; in fact, no preliminary prices are ever entirely accurate. But as we are interested in differentials of rental as between plans, and as any inaccuracy affects all the plans almost equally, the differential is not much affected.

The table, once made up, can readily be changed for new financial set-ups and rates, as it can for changes in the price level.

The method assumes that all variables vary as continuous functions. This is not always true; for instance, in figuring the extra maintenance cost per square foot of exterior wall, it is assumed that heating costs vary directly as the exposed surface. This is not strictly true, as one fireman can probably take care of the extra heating required, so that this item in heating cost doesn't vary except for very large changes in heating requirements. But in spite of this type of limitation, the tables are sufficiently accurate for the purposes intended.
BOOK REVIEWS


The author has undertaken a staggering task; a survey of mankind's efforts to improve his shelter; why his shelter today costs more than it should; and, in a third volume still to come, pointing out specific means of bringing shelter into line with our other more fully developed industries. In the present volume the picture of the architect is not a pretty one. He, of course, has had nothing whatever to do with fully 80 per cent of the dwelling-houses of the United States. According to the author, he is too much concerned with style, and too little with matters meaning more to the owner. This comprehensive survey, showing why we do not get more house for our money, should be read by every architect.


An annual publication with the purpose of bringing before the profession the latest developments in the many phases of a broad subject. A section of the volume is given over to manufacturers' catalogue data uniformly arranged.

THE STORY OF GARDENING. From the Hanging Gardens of Babylon to the Hanging Gardens of New York. By RICHARDSON WRIGHT. 475 pages, 6½ by 8½ inches. Illustrations from old prints, drawings, and photographs, with color frontispiece. New York: 1934: Dodd, Mead & Company. $3.

The editor of House and Garden set himself a stupendous task in tracing the history of gardening from the time when primitive man first stirred the soil with a sharpened stick to encourage the growth of his food, down to our own time when gardeners and the garden clubs flourish throughout the land. Mr. Wright has performed a feat of research to get these closely packed pages many facts of which he has never heard.

HARVARD CITY PLANNING STUDIES.


Here are two additions to the Harvard City Planning Studies. The first, by Thomas Adams, is a masterly presentation of the housing problem—not merely low-cost, but middle-cost and high-cost as well. Here is no mere theorist's dream of Utopia, but a summation of experiences covering an international field and a long period of time.

The seventh volume in the series deals with a very present problem—that of arranging our laws so as to provide a proper utilization of the police power by communities in restricting their building for the greater good of the greater number.

THE CATHEDRALS OF ENGLAND. By HARRY BATSFORD and CHARLES FRY. Foreword by HUGH WALPOLE. 118 pages, 5¾ by 8½ inches. Illustrations from photographs and line drawings, with color frontispiece. Printed in Great Britain. New York: 1934: Charles Scribner's Sons. $2.75.

A comprehensive pictorial review of the cathedrals, for the layman who likes to know something about what he sees in the architectural and art treasures of our heritage. Nor will the deeper student of England's ecclesiastical architecture fail to find in these closely packed pages many facts of which he has never heard.


If, as the author says, to you "saloon" is different from "public bar"; if you know better than to order beer in a wine house; if you can feel the difference between coffee-room and restaurant; if you are the sort of person who does not get shown into the parlor as soon as you enter a village ale house, then this book is intended for you. Mr. Richardson has brought together here practically all the facts and indispensable examples, with some personal discoveries not generally known to the public.

ARCHITECTURE
An Office Lobby in a Loft

LOBBY FOR M. GRUMBACHER IN MASTER PRINTERS BUILDING, NEW YORK CITY

GERALD K. GERLINGS, ARCHITECT

The existing conditions included a general lobby leading from an elevator lobby in an awkward manner, doors scattered without reasonable relationship, and a ceiling marred by structural projections and sprinkler pipes. The problem consisted of providing two show windows, one shallow and the other deep, where the client could display the art materials he manufactures in such a way that retail dealers could get display ideas. It was important to obtain a concentration of interest on the show windows, yet lead the eye naturally to the main office door and information window.

It is evident that by concentrating all light at a height of seven feet, the ceiling (twelve feet high) is so dark that none of the structural excrescences and sprinkler pipes show. This solution, as to the color scheme of which see the captions, is interesting chiefly because it deals with a common condition where walls and ceilings are irregular and must be made to look attractive for a small sum. The reason for selecting blue is that it above all colors has a certain atmospheric quality which makes the wall take a less fixed position in one's consciousness than any other. Obviously it is important that all wall colors be of mat finish, with only the metal polished for accentuating contrast.

Photographs by Richard Averill Smith

Above the cornice, both walls and ceiling were painted a midnight blue, successfully keeping the eye on the points of interest—the sample show windows. Three shades of blue are used, with polished aluminum: base, a dark blue, almost black; dado, a fairly deep blue to the metal band; above this, a pale horizon blue to the cornice. The floor is in the same three shades of blue. Existing doors and trim were sprayed with aluminum paint, then lacquered.
To calculate the space to house a million
books it is now necessary merely to di-
vide the number by one hundred, and the
quotient is the number of single-
faced three-foot standard sections re-
quired.

Saturday, December 1.—C. A. Dyk-
stra, who is City Manager of Cincinnati,
points out a fact that is rather obvious,
yet surprisingly unaccepted by the gen-
eral public. We hear frequent wails that
the cure for technological unemploy-
ment, urban crowding, and even unem-
ployment itself, is a return to the land.
Yet agriculture as a business cannot
absorb any more workers or proprietors
—its production has even now been re-
stricted, just as the over-production of
any branch of industry would be auto-
matically restricted by laying off em-
ployees and shutting down parts of the
factory. On the other hand, agriculture
as a way of life can offer relief only to
those who have a competence or an in-
come from some non-agricultural source.
As Mr. Dykstra points out, we seem to
be merging the advantages of rural and
urban life. The city goes to the country
with light, telephone, gas, electric light,
the radio, bathnxims, and other things, and the
country comes to the city with light,
air, open spaces, health, and fresh mar-
kets. Communication is the link be-
tween them. There can be no economic
or business reason for a back-to-the-land
movement unless we are willing to con-
fess that most of us are to live on an
agricultural subsistence level. Such a
confession is tantamount to an admis-
sion of the failure of inventive and edu-
cational progress.

Monday, December 3.—B. Charnev
Vladeck, a member of the New York
City Housing Authority, whose recent
words in these pages regarding the archi-
tect in the social structure ruffled many
feathers, points out some fundamentals
with regard to housing which apparently
are very much confused in the public
mind.

1. "The difference between public
building and private building is only
that of financing and management. The
effect on employment and the building
industry is exactly the same.

2. "No private builder can provide
homes for the low-income classes of our
population with any expectation of profit."

3. In England, to which we are being
directed as a model of community hous-
ing, it is true that considerable building
is being done by private enterprises.
Nevertheless, vast funds have been in-
vested there in low-cost housing on a
basis of approximately two per cent in-
come spread over about sixty years. It
is also true that the demolition of un-
sanitary dwellings—the condemnation
and removal of slums—is being carried
out by the local and federal governments
at public cost.

4. "The most radical program of
central low-cost housing in New York
City would in no way adversely affect
private building. On the contrary, it
would stimulate it through raising the
general standard of housing throughout
the city."

Wednesday, December 5.—Our friend,
Sris Chandra Chatterjee, who visited us
two or three years ago in the interests of
his native arts and crafts, is at present
organizing, in Calcutta, an institute for
teaching Indian architecture, under the
guidance of Mr. Perry Brown. The
school opened on November 24, Mr.
Syama Prasad Mookerjee, vice-chancel-
or of the University of Calcutta, hav-
ing consented to become its president.

Thursday, December 6.—Frederick
Stuart Greene, Commissioner of Public
Works for the State of New York, faced
an antagonistic group at the League to-
day at lunch, and told the architects
why he preferred to do State work
through a central organization at Albany
rather than through architects in pri-
ivate practice. The Colonel never fails to
say just what he means and what he be-
lieves, and this was no exception. He
was forcibly convincing in his conten-
tion that the State can design its public
buildings more quickly, more efficiently,
and more cheaply that it could do
through independent practitioners. The
Colonel dropped, incidentally, the inter-
esting fact that in 1931, which was the
State's most active year in architectural
endeavor, there were over four hundred
architects employed in the organiza-
tion at Albany. Unfortunately, the
number has dwindled to about half of
that now.

Saturday, December 8.—Harvey Cor-
bett is out again with the opinion that
the prefabricated house of steel is going
to solve our housing problem and many
others. He believes that we are almost
upon the culmination of years of research
in finding a house that can be produced
in quantities for from forty to fifty per-
cent less than the conventional types.
It seems to me that we are farther from
that point than he thinks.

Monday, December 10.—Eliel Saarinen
has a group of his city-planning stu-

The Editor's Diary

February, 1935

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The Bureau of Standards refers the opinion between experts as to whether changes greatly with the years. We restrictions—for laws and land values show us the progress of his Hillside Housing project this morning—Charles Butler, Albert Mayer, Henry S. Churchill, and myself. Even with a familiarity with published drawings, the visitor is startled by the size of this scheme. There are nearly five thousand rooms provided in the group, supplying, chiefly, three- and four-room apartments, with a few of two rooms, and still fewer of one room. The brickwork is nearly completed, using, I believe, something like fifteen million brick—a Hudson River brick somewhat larger than the standard size. The plumbing is being installed, and we were particularly interested in the amount of simplification which has been developed in the pipe lines through special fittings and the like. Nevertheless, the stacks could be very much further simplified if it were not for the insistence of union labor upon continuing the large proportion of field work that is traditional. Each time one of the large projects is put under the union gives way very slightly to the demands for a greater amount of shop work in order to save work on the job, but the progress is rather slow. There seems to be a great need for the development of a system of piping that will provide for expansion and contraction without the necessity for three-way elbow turns—here is a chance for the inventors. We were particularly interested in seeing how Clarence Stein has secured practically all of his restrained architectural embellishment merely through the skillful handling of his brickwork. Turning a brick on end or on its side is, after all, the least expensive way of getting architectural accents in a building of this kind, where cost is a dominant factor.

Saturday, December 15.—These sculptors are great playboys at times. St. Thomas's in New York is full of contemporary humor, such as the dollar sign over the bridal door. I hardly thought, however, that any one would be likely to be playful with the Supreme Court Building in Washington. Nevertheless, Robert Aitken's pediment over the west front shows Cass Gilbert having down the law to Elihu Root, and Chief Justice Hughes conversing with Robert Aitken himself. The late Chief Justice Taft is also present, though somewhat disguised to the casual eye by appearing in his more slender youth. John Marshall is also shown as a boy.

Monday, December 17.—Louis La Beume, who usually says something when he opens his mouth, writes a splendid essay in the Illinois Society of Architects Monthly Bulletin—"Watchman Tell Us of the Night." One cannot condense all of the philosophy in this essay into a few sentences, but the gist of it is that even though things have looked very black for the architect, "it is difficult to imagine any civilization without some sort of architectural ideal. . . . "The following false gods is undeniably true. We have heard far too much of the necessity for the architect to become business man, engineer, promoter, banker, real-estate operator, sociologist, what not ? in order to compete with these several hierarchies. We have been urged to advertise, to fraternize, to contract, to expand, to win the Lion, or the Moose, or a Mason, in even these days when we are warned that the era of masonry has passed, and all we shall have to do will be to cover skeleton structures with synthetic raiment. We have been frightened by the encroachments of the contractor and speculative builder into the sacred grove which is the hallowed abode of our shy Muse.

Saturday, December 22.—Today marks the first mortgage loan to be issued under Title II of the National Housing Act in the regional area comprising New Jersey, Pennsylvania, and Delaware, and possibly the first in the country. A home costing $4,500 bears a mortgage of $4,800 held by the Prospect Park (N. J.) National Bank, and insured by the government. The owner will pay the bank about fifty dollars monthly, to cover interest, amortization, taxes, fire insurance, and mortgage guarantee insurance. In twenty years, or less, these payments will have paid off the mortgage.

Monday, December 24.—DeWitt Clinton Pond gave me an interesting fact the other day in the weight of the Great Pyramid as compared to the weight of the Empire State Building—a comparison that means very little, possibly, excepting that our commercial stone buildings of today are of steel supporting a very thin skin of stonework. As Pond puts it: "The Great Pyramid, 7,000,000 tons, no rentable area; the Empire State Building, 35,000 tons, with a rentable area of 175,000 sq. ft."

Nevertheless, I'd hate to think that "rentable area" is, today, our chief measuring-stick.

Wednesday, December 26.—The Women's Division of the Architects' Emergency Committee, New York City, is at its good work again this year to raise one hundred thousand dollars, half of which is already in sight. Mrs. Joseph Urban, who is chairman of the Women's Division, hopes that this may be the organization's last public appeal for emergency funds.
THE ONE HUNDREDTH IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS

ARCHITECTURE’S PORTFOLIO OF

TILE ROOFS

Subjects of previous portfolios are listed below at left and right of page

1926
- Dormer Windows
- Shutters and Blinds

1927
- English Paneling
- Georgian Stairways
- Stone Masonry Textures
- English Chimneys
- Fanlights and Overdoors
- Textures of Brickwork
- Iron Railings
- Door Hardware
- Palladian Motives
- Gable Ends
- Colonial Top-Railings
- Circular and Oval Windows

1928
- Built-In Bookcases
- Chimney Tops
- Door Hoods
- Bay Windows
- Cupolas
- Garden Gates
- Stair Ends
- Balconies
- Garden Walls
- Arcades
- Plaster Ceilings
- Cornices of Wood

1929
- Doorway Lighting
- English Fireplaces
- Gate-Post Tops
- Garden Steps
- Rain Leader Heads
- Garden Pools
- Quoins
- Interior Paving
- Belt Courses
- Keystone
- Aids to Fenestration
- Balustrades

1930
- Spandrels
- Chancel Furniture
- Business Building Entrances
- Garden Shelters
- Elevator Doors
- Entrance Porches
- Patios
- Treillage
- Flagpole Holders

1930
- Casement Windows
- Fences of Wood
- Gothic Doorways

1931
- Banking-Room Check Desks
- Second-Story Porches
- Tower Clocks
- Altars
- Garage Doors
- Mail-Chute Boxes
- Weather-Vanes
- Bank Entrances
- Urns
- Window Grilles
- China Cupboards
- Parapets

1932
- Radiator Enclosures
- Interior Clocks
- Outside Stairways
- Leaded Glass Medallions
- Exterior Doors of Wood
- Metal Fences
- Hanging Signs
- Wood Ceilings
- Marquees
- Wall-Shrinking
- French Stonework
- Over-Mantel Treatments

1933
- Bank Screens
- Interior Doors
- Metal Stair Railings
- Verandas
- The Eagle in Sculpture
- Eaves Return on Masonry
- Gables
- Exterior Lettering
- Entrance Driveaways
- Corbels
- Pew Ends
- Gothic Niches
- Curtain Treatment At Windows

1934
- Exterior Plasterwork
- Church Doors
- Fountains
- Modern Ornament
- Rustication
- Organ Cases
- Garden Furniture
- Window Heads, Exterior
- Spires
- Business Building Lobbies
- Roof Trusses
- Modern Lighting Fixtures

1935
- Circular Windows
- Gothic and Romanesque

Below are the subjects of forthcoming Portfolios

Molded Brick
- March

Dormer Windows
- April

Entrance Seats
- May

Overdoors, Interior
- June

Brick Cornices
- July

Signs
- August

Photographs showing interesting examples under any of these headings will be welcomed by the Editor, though it should be noted that these respective issues are made up about six weeks in advance of publication date.
Church at Vorke-rode, Germany

Evanston, Ill.
Richard Powers

Jericho, N.Y.
Hopkins & Dentz

Atlanta, Ga.
Hentz, Adler & Shutze
Hackensack, N. J.
Wesley Sherwood Bessell

The Old Castle at Neustadt, Germany

Greenwich, Conn.
Frank J. Forster; R. A. Gallimore

Chattanooga, Tenn.
William H. Sears
Greenwich, Conn.
Gresille Rickard

Saint Neots, Huntingdonshire, England

Greenwich, Conn.
William F. Dominick

An American-made shingle tile patterned after an old European type
Almshouses, Bray, England

An American-made shingle tile patterned after the Yorkshire type

New Canaan, Conn. Frank J. Forster

The former St. George Chapel, Wolgast, Germany
Modern English type near Coombs Bridge, London

Irregular courses at Hushorne Crawley, England

Hewlett Manor, N. Y.
John C. Greenleaf
Greenwich, Conn.
Greville Rickard

Forest Hills, N. Y.
Grosvenor
Atterbury

An unusually flat
U-tilo, Segovia,
Spain

Lenox, Mass.
Howells & Stokes
Mount Desert, Me.
Grosvenor Atterbury

A neat return on hips, Guildford, England

Kings County, N. Y.
LeRoy P. Ward

Beverly Hills, Calif.
Ralph C. Flewelling
Moerkerke near Bruges, Belgium

Van Ameringe Memorial, New York City
McKim, Mead & White

Portland, Ore.
Herman Brookman

Modern S-tile, Allerford Bridge, England
Southern California
Gordon B. Kaufmann

Southampton, N. Y.
Peabody, Wilson & Brown

New York, N. Y.
Springsteen & Goldhammer

Hilversum, Holland
W. M. Dudok
Denver, Colo.
M. H. Hoyt & B. Hoyt

San Antonio, Tex
Harvey P. Smith

Detroit, Mich.
Halpin & Jewell

Garden City, N. Y.
Davis, McGrath & Kiessling
Union City, N. J.
Frederick G. Frost

Miami, Fla.
Wade & Oemler

Wellingborough, England

A tapered Mission tile

S-tile over shingle tile
Memphis, Tenn.
Mahan & Broadwell

Grand Rapids, Mich.
Mills, Rhines, Bellman & Nordhoff, Inc.

Darien, Conn.
Wesley Sherwood Bessell

Santa Monica, Calif.
John Byers
Palm Springs, Calif.
Jonathan Ring

Southern California
Roland E. Coate

Los Angeles, Calif.
Morgan, Walls & Clements

St. Petersburg, Fla.
Kiehnel & Elliott
Building Products' News

USE this prepaid mailing card so ARCHITECTURE can keep you right up to date on new products. Fill in the file numbers of the items desired and we will see that your request is complied with.

REVERSIBLE INSULATION BOARD

F. 421. New beauty, new utility, new ease in application, and new stability are to be found in the use of DU-X, a protected, reversible insulation board made by the DU-X Corporation of Portland, Ore. The dual surfacing, plywood, on one side, insulation on the other, explains its superior utility and, alternating the plywood surface with the insulation side, an attractive decorative effect is obtained. A sample will be sent you on request.

WATERTIGHT CONCRETE

F. 422. The International Concrete Corporation's booklet on "Incor" 24-Hour Curtain contains water content tables, describes the proper method of mixing, placing and curing cement, and shows why "Incor" Curtain produces better concrete at a substantial saving in curing cost. One day's curing with this is equal to three days curing with ordinary cement.

HOT WATER

F. 423. The Gilbarco Model PW-50 Hot Water Unit, says the maker, the Gilbert & Barker Manufacturing Company, supplies the best and most economical hot water for hotels, restaurants, apartment houses, clubs, colleges, hospitals, laundries, and homes. This efficient unit supplies 1650 gallons of hot water per day at a very low cost. In a new folder from the company are specifications, photographs, and a cut-away view showing construction features.

MEMORIALS IN GLASS AND STONE

F. 424. The Tiffany Studios have a most beautiful book of their indoor and outdoor memorials to convey in text and illustration some idea of the scope of their work. It is devoted to Tiffany Favrile Glass windows, mosaics, to stone monuments and bronze tablets. It contains water content tables, describes the proper method of mixing, placing and curing cement, and shows why "Incor" Curtain produces better concrete at a substantial saving in curing cost. One day's curing with this is equal to three days curing with ordinary cement.

SHERADUCT FLOOR BOX

F. 425. The Sheraduct Floor Box, a product of the National Electric Products Corporation of Pittsburgh, is a modernized convenience receiving the other day. It has been prepared to show how masonry and concrete surfaces, whether exterior or interior, damp or dry, can be successfully painted in white or colors, giving a hard, cement-like finish that is permanent, decorative, damp-proof, washable, and free from deleterious chemical action of lime, alkalis, and moisture.

CREO-DIPT STAINED SHINGLES

F. 426. In a sixteen-page booklet, the Creo-Dipt Company, Inc., have presented their Stained Shingles, not only as an economical, durable, and attractive building material, but have gone deeper and shown, in full color plates, the beauty of these as an ornament for the medium. Cut from the finest selected red cedar, a natural insulator, they are made to overlap three times for further insulation, and the use of the extra color pigment and preserving oils forces into them, these shingles keep their lovely color longer than ordinary stained shingles.

FINE LUMBER—FROM FOREST TO CAR

F. 427. This is the title of a new and unusual booklet, released by the Tennessee Eastman Corporation, Kingsport, Tenn., showing pictorially the manufacture of fine quality Appalachian Hardwoods. A large picture, with small explanatory notes, are used to show the entire operation from the woods to the finished product. Tennessee Eastman's production of wood chemicals, which permits the use of low-grade timber in their wood distillation plant and the utilization of only the very finest timber for sawlogs, is interestingly shown.

EXTRA STORAGE SPACE FOR BATHROOMS

F. 428. The patented three-layer construction of the Gleason-Tiebout Glass Company's Celestialite provides "Next-to-Daylight" quality illumination. The layers consist of: 1. Crystal-clear transparency for body and strength; 2. White glass to diffuse the rays and soften the light; 3. Blue glass to whiten and perfect the light. For offices, banks, newspaper plants, and any place where man must work at high efficiency, Celestialite will help you solve your installation problems.

ARG WELDERS

F. 429. The General Electric Company of New York just issued a new catalogue of their various types of Electric Arc Welding Machines. This contains descriptions, photographs, diagrams, and dimension tables and will be a handy reference booklet for your files.

ASBESTOS FLEXWOOD

F. 430. A new building material developed by Johns-Manville, a fire-proof, permanent, asbestos-cement sheet, so flexible that it can be made to conform to surfaces having a considerable curve; so workable that it can be sawed and nailed like wood; and so easy to handle that it can be applied as quickly and easily as any fibre board, is called Flexwood. Because the coloring is an integral part of the material itself, there is nothing on the surface to chip, crack, or craze. Wherever a decorative, decorative, and sanitary finish is desired, this new Johns-Manville product will save you money.

CELESTIALITE

F. 431. An entirely new development in the field of extruded work is announced by the Bohn Aluminum and Brass Corporation. For the first time it is now possible, on a production basis, manufacture in integral shapes, concentric in wall-thickness. It eliminates the necessity of using lock seams, dovetail pieces, or welded seams in the production of hollow shapes, particularly used in ornamental work, for window framing, and door stiles.

NEW YORK, N.Y.

ARCHITECTURE will be paid by

CHARLES SCHICKER & SONS, Publishers

Service Bureau

FIRST CLASS PERMIT NO. 703
BUI.ING PRODUCTS' NEWS
NEW YORK, N.Y.
MAKE WALKWAYS SAFE!
F. 435. Feralan, Bronzalum, Alumalum, and Niculam are the trade names given by the American Abrasive Metals Company to its anti-slip abrasive castings, each trade name indicating respectively the metal used as a matrix. Grains of the hardest known electric furnace abrasive product are incorporated in the wearing surface of these castings to provide maximum wear and anti-slip qualities. By a special process of manufacture, these grains are uniformly and deeply impregnated in the face of the castings so that they become an integral part of them. For stairs, entrances, platforms, or other walkway surfaces. The company's new book describes these castings in great detail, with many diagrams and illustrations.

NEW HOLDING DEVICE
F. 436. The new Rawl-Drive is a one-piece device for holding or attaching anything to masonry, brick, stone, and other solid masonry. It looks like a bolt and drives in like a nail—has tremendous gripping and holding power—and gives the user the highly desirable advantage of a combination anchor and anchoring device in a single unit. The Rawplug Company, Inc., manufacture the Rawl-Drive and have prepared an attractive folder describing it.

THERMADOR PRODUCTS
Water Heaters
F. 437. The new type FW Thermador Electric Water Heaters were designed especially to meet the water-heating requirements of the average-size home at the lowest possible cost, consistent with dependable service, efficient performance, and economy of operation. Specifications and diagrams will be sent you at your request.

Bathroom Heaters
F. 438. Another new product of the Thermador Electrical Manufacturing Company is their bathroom heater. The folder describing this says that it is only 9 inches wide and 48 inches tall, making it easy to install in small bathrooms. The grille is of steel, the reflector of chromium-plated steel, and the wall box of the same metal, black enamelled. Prices and sizes are included.

BRIDGE DESIGN COMPETITION
F. 439. The American Institute of Steel Construction announces its Seventh Annual Bridge Design competition open to bona fide registered students of structural engineering and architecture in recognized technical schools of the United States and its possessions and offers two cash prizes of $100 and $50 respectively for the designs placed first and second. Certificates signed by the Jury of Award and the officers of the Institute will be awarded to those whose designs are given honorable mention. Preliminary drawings must be received at the Executive Offices of the American Institute of Steel Construction not later than March 16, 1935, so write for your sheet of instructions immediately.

THE PERFECT HOME
F. 440. American Houses, Inc., present their new booklet on prefabricated houses, the modern construction method. This is a scientific process of combining raw materials beforehand, therefore its installation in the construction ready for immediate use in building houses with speed and economy. Photographs and descriptions of some of the charming homes which have been built by this method are included in the booklet.

RED TOP WEATHERWOOD
F. 441. In a new book profusely illustrated by Henry Harringer, the eminent artist and designer, the United States Gypsum Company of Chicago presents Weatherwood Insulating Board and Tile as an interior finish. Designs are limited to standardized units and ready adaptations with available cutting tools. Its uses range from theatres and radio studios to grocery stores, churches, and homes.

PLUMBING WARE
F. 442. The Briggs Manufacturing Company of Detroit have perfected the Brigriget sink. This is 6 inches lighter than a cast-iron sink of the same size, the weight of its installation in the home is a simple matter, since it is so easy to handle. And because Brigriget is pressed from crystalline 4.4 Grace Armco Ingot Iron, it possesses amazing strength. Specifications, colors, and descriptions are given in a new piece of promotion just received from the manufacturer.

MAY-DAY HUMIDIFIER AND HEAT SAVER
F. 443. The Minneapolis Air Conditioning Company have sent us their folder on the new May-Day Humidifier and Heat Saver which describes how the unit operates, shows a cross-section, gives prices, and includes letters from owners of installations.

GORTON SUREVENT EQUALIZING SYSTEM
F. 444. This system is designed especially to equalize steam and vapor heating systems where a thermostat is used to operate an oil-burner, automatic stoker, or gas-fired boiler, so that all radiators will heat up evenly and quickly and all rooms will be heated. The Gorton Surevent equalizes the steam pressure coming into the system by releasing the superheat, thus preventing steam from escaping from the system when the pressure becomes excessive. This system is particularly well adapted to use in small or remote locations.

NEW-TYPE WINDOW
F. 445. An advanced type of weight-hung window, made of aluminum and built into one unit, glazed and ready for quick installation in residencies, is proving one of the sensations of the current exhibition of Contemporary American Industrial Art, at the Metropolitan Museum in New York City. Many unique advantages are claimed for the new window by its makers, The Kawneer Company of Niles, Mich., and they will be glad to send you further information accompanied by illustrations.
CARPET COUNSEL by The Bigelow Weavers

A broad, flexible service that’s “made to measure” for architects

Through years of working with leading architects and decorators, we have built up a service which we believe you’ll find helpful. It covers every detail of carpeting problems: estimating and budgeting ... creating designs or interpreting your ideas ... weaving ... supervising installation.

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May we have the pleasure of serving you as Carpet Counsel? Contract Department, Bigelow-Sanford Carpet Co., Inc., 140 Madison Ave., New York, N. Y.

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THE BULLETIN - BOARD

Continued

This idea is based on the belief that actual accomplishment in large scale planning must rest on the cooperation of many diversely trained individuals united through an informed interest. While recognizing the importance of the specially trained city planner as a coordinator, the Cornell plan will attempt to present the idea of collective control of environment to as many students in as many different fields as possible, not as a matter of professional training, but as a supplement to their normal major interests. Such a course, it is felt, will assist in their normal major interests.

A MEDAL TO WILLIS H. CARRIER

The 1934 Gold Medal of the American Society of Mechanical Engineers has been presented to Willis H. Carrier, chairman of the board of the Carrier Corporation, Newark, N. J., "in recognition of his research and development work in air conditioning." The presentation was made at the society's annual dinner to new members at the Hotel Astor.

Mr. Carrier, who was born in 1876 and was graduated from Cornell in 1901, is a pioneer in air conditioning and the author of many scientific papers. The medal he received is a medallion and a distinguished service in engineering and science.

SAN FRANCISCO'S BUILDING EXPOSITION

W. H. GEORGE, president of the San Francisco Builders' Exchange, announces San Francisco's Annual Building Exposition, which will be held May 4 to 12, inclusive. In addition to exhibits covering a wide field in the building trades, there will be conferences and meetings of organizations of architects, engineers, contractors, building management, and other groups.

AMERICAN SOCIETY FOR TESTING MATERIALS MEETING

ANNOUNCEMENT is made by the American Society for Testing Materials of its regional meeting on March 6, in Philadelphia, the technical feature of which will be a symposium on paint. Its thirty-eighth annual meeting is scheduled for June 24 to 28, at the Book-Cadillac Hotel, Detroit.

A MATTER OF CREDIT

THROUGH an oversight in connection with the publication of The Prado, Boston, published in the December number, the names of the collaborating architects were omitted. Mr. Arthur A. Shurcliff asks us to mention the fact that Coolidge, Shepley, Bullfinch & Abbott were associated with him in this work. Mr. Shurcliff writes:

"I called Mr. Shepley in on many occasions to hold my hand in architectural details, and his aid contributed vastly to the charm of the result. I think your readers will wish to know that as a landscape architect I am conscious of the incalculable aid which an architect can lend to a project where on the surface appears to be largely a matter of landscape design."

CHICAGO'S MODERN HOME EXPOSITION

THE Modern Home Exposition will open Saturday, February 16, at the Coliseum, 16th Street and Wabash Avenue, continuing through Sunday of the following week. More than two hundred fifty manufacturers and dealers are expected to be represented by exhibits. Experts in various phases of modernization and home furnishing are scheduled to speak at the various sessions.

HOUSE AND GARDEN CENTER, BOSTON

FOR the benefit of the Cambridge School of Architecture and Landscape Architecture the alumna announces the opening of a House and Garden Center at 127 Newbury Street, Boston. This will be headquarters for such activities related to the house and garden as the following:

- A clinic for consultation about problems connected with planning, remodelling, repairing and furnishing the house and with the planning and maintenance of the garden.
- Lectures by graduates on house and garden subjects.
- Classes in sketching and model-making.
- Books and magazines on house and garden subjects will be on hand for reference and for sale on order, and a shop for the sale of merchandise.

GOTHIC AND MEDIEVAL MANUSCRIPTS

NEW YORK UNIVERSITY GRADUATE SCHOOL, Department of Fine Arts, in cooperation with The Pierpont Morgan Library, announces a course of fifteen lectures on Gothic and Late Medieval Illuminated Manuscripts by visiting professor Erwin Panofsky of New York University. The course will be given on Friday afternoons at 2:30, beginning February 8, at The Pierpont Morgan Library, 29 East 36th Street, New York City. Enrollment for non-credit students may be made by mailing check for $22, payable to New York University, to The Secretary, Department of the History of Art, 29 East 35th Street, New York City.

AMERICAN STANDARDS ASSOCIATION

HOWARD COONLEY, president of the Walworth Company, was re-elected president of the American Standards Association, 1935. Frederick E. Moskovics, representing the Society of Automotive Engineers, was re-elected vice-president. J. C. Irwin, of the Boston and Albany Railroad, and F. M. Farmer, of Electrical Testing Laboratories, were re-elected chairman and vice-chairman of Standards Council.

PERSONAL

S. Whitehill, architect, has closed his office at 654 Madison Avenue, New York City, and until further notice will carry on his practice at 100 Pelham Road, New Rochelle, N. Y.

Timothy Y. Hewlett and Thomas D. Best, architects, announce their association for the practice of architecture, with offices in the Richardson Building, Toledo, Ohio.

It is announced that George F. Bosworth, architect, of 88 Broad Street, succeeds the firm of Chapman & Frazer, architects, 171 Newbury Street, Boston, Mass.

The partnership of Robert S. Arnold and L. Morgan Yost, architects, having been dissolved, Mr. Yost will continue his practice in the First National Bank Building, Wilmot, Ill.

William H. Elliott, architect and engineer, announces the removal of his office to Masonic Building, Washington Street, Easton, Md.
In the latest building in Rockefeller Center, New York, Otis Escalators will be a feature of the strikingly modern lobby.

These escalators combine beauty with mechanical excellence, greatly enhancing the appearance of the lobby and also providing a second ground floor which materially adds to the income of the building.

A new standard for quietness, safety and smoothness of operation will be established by these new escalators. They will be capable of moving, to or from the first floor, 32,000 persons per hour, which is equivalent to the capacity of a grand stairway 80 feet wide.

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That is why so many Masters use the famous A. W. Faber "Castell" Drawing Pencil. It brings out all your skill. It gives full expression to your genius. It improves every sketch, drawing, rendering or elevation. Smooths, free from grit and hard spots, it does not crumble or snap off easily under pressure. The 18 degrees of hardness give you every gradation of tone you desire.

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"The illustrations are particularly excellent. There is no single volume in English that contains so many." — The Architectural Record.

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Business Men's
PROSPERITY SURVEY

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BALLOTS like this one in ARCHITECTURE are being published this month in many business papers affiliated with The Associated Business Papers, Inc.—reaching virtually all key men in every line of industry, trade and profession throughout the nation.

BUSINESS men, nationally, may appreciate an opportunity to express their convictions to a strictly non-partisan and impartial body—with the assurance that by so doing, business views will be presented effectively to the political, banking, industrial, business and labor leaders of the country.

QUESTIONS on the economic ballot below are prefaced with "In your line of business" to make possible an industry by industry study as well as a consensus of business opinion in all fields of industry—so let our industry be well represented in the responses.

---

ECONOMIC BALLOT

Check your convictions, sign, clip and mail this ballot.

1. As regards the possibility of Congress adopting a universal thirty-hour work week, do you favor such legislation? Yes ( ) No ( ), and if so on the basis of ( ) continuation of existing weekly wages, or ( ) continuation of existing hourly rates of pay.

2. In your line of business are you satisfied with enforcement of maximum hours and minimum wage provisions now in effect? Yes ( ) No ( )

3. In your line of business is there obtainable ample working capital—from banks? Yes ( ) No ( ); from government agencies? Yes ( ) No ( )

4. In your line of business is there obtainable ample investment capital—from banks? Yes ( ) No ( ); from government agencies? Yes ( ) No ( )

5. In your line of business do you favor limitation of industrial output—by government control? Yes ( ) No ( ); by industry control? Yes ( ) No ( )

6. In your line of business do you favor a plan for control of prices—by a code provision establishing price fixing? Yes ( ) No ( ); by a code provision establishing an open price plan? Yes ( ) No ( )

7. In your line of business do you think that government measures now in effect are helping small and medium sized enterprises? Yes ( ) No ( ); hurting such enterprises? Yes ( ) No ( )

Signed

Firm

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<th>CAT. NUMBER</th>
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Grille Size 9" x 48" x 1 1/2" Shipping weight (heater) 10 lbs.
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