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ADDRESS
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INTERNATIONAL BUILDING
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MUNICIPAL INCINERATOR
First municipal incinerator designed by an architect. General reference data on incineration with specific construction details for the Shreveport project.

SMALL HOUSES
Portfolio presenting Nos. 102-106 in THE FORUM's series of small houses inaugurated in October. Interior-exterior photographs...critical comment...total cubage...cost data...construction outline.

BUILDING MONEY
Washington chart (518)...The FHA's new low cost housing finance plan—who can build, how to get the money, what can be built (520)...Wilmington presents a model firm specializing in remodeling and new apartment construction (525)...Building finance charts (528)...Why a text-book-perfect Washington subdivision sold slowly, how its owners hope to make it pay (526)...A chart to tell whether air conditioning can be installed profitably (528)...A chart to tell whether air conditioning can be installed profitably (528).

DEPARTMENTS (in front advertising section)
THE MONTH IN BUILDING
A quick summary of front-page building news with significant facts and figures on building's volume, the trend in prices, flow of mortgage money, news from Washington.

LETTERS
Antonin Raymond defines his architectural credo—"I begin with engineering"...A review of the career of Stewart McDonald, new FHA head.

PRODUCTS AND PRACTICE
The X-ray enters the building field as the first rapid and certain method to test accurately the soundness of welded joints.

FORUM OF EVENTS
The late Thomas A. Edison's plans for a poured concrete house complete even to bath tubs...Harvard's School of Architecture adds another fellowship with a $100,000 gift...In Cass Gilbert's $10,000,000 Supreme Court the Justices sit on $35 worth of chairs.

BOOKS
"U. S. Camera," the first American photographic annual.

VOLUME LXIII NUMBER FIVE
While fire-safety ranks first among the advantages of Kalman Steel Joists, they bring additional values that appeal to any client for whom you design a home.

The combination of Kalman Steel Joists with concrete floor slab and plaster ceiling makes a construction that, while forming an impassable barrier to fire, transmits very little sound and vibration, preventing noises overhead from disturbing occupants of rooms below. A floor structure that cannot shrink to cause cracks where walls and floor meet, and that is immune to the dreaded termite, whose ravages are spreading rapidly.

These advantages, which make a difference in the building cost of only a few cents a square foot, provide the owner with a dwelling that is more livable. They make his investment sounder, because his home—which often represents the savings of years—is less subject to swift obsolescence, will need fewer repairs.

The fact that your client may have in mind a relatively small dwelling offers no obstacle to the use of Kalman Steel Joists. They can be applied as economically to a six-room home as to a large, pretentious one. They are, of course, adaptable to any style of architecture.
THE MONTH IN BUILDING

VOLUME. Supplementing the Labor Department's report of an increase in residential building of 160 per cent in September over September a year ago came FHA's justifiable boast that it was writing insurance for mortgages and remodeling work at the rate of $2,000,000 a day. Its remodeling insurance totaled $189,255,380 on October 16; and on the same date the amount of mortgages selected with appraisal fees paid was $197,246,488, with an additional $81,371,574 for four low cost housing projects.

There was nowhere on the horizon any sign that home building's pace would have to slacken. The industry itself is even more bullish than it was in the summer months, with earnings of building companies approaching new 5-year highs:

(Sept. quarter except where otherwise stated; 00's omitted; D = deficit)

1935 1934

American Window Glass (year ended Aug. 30) $821 817D
Celotex (nine mos. ended July 31) 6D 6
Detroit-Michigan Stove (year ended July 31) 31 73D
General Paint (nine mos. ended Aug. 31) 207 132
Johns-Manville 779 551
Libby-Owens-Ford 1,311 287
Masonite (year ended Aug. 31) 1,004 380
Minneapolis - Honeywell Regulator 787 257
Owens-Illinois (year ended Sept. 30) 7,894 6,085
Thatcher Manufacturing (stoves, boilers, furnaces, glass) 295 174
Wood Preserving (year ended Dec. 31) 441* 481D*

*1934 compared with 1933; Report just issued.

TUGWELLTOWN. Those who guessed that Rexford Tugwell's new Re-settlement Administration would lead to naught but the framing of a long range policy of industrial decentralization proved wrong last month when work was started on the first of four satellite towns to be built immediately out of his $246,000,000 appropriation. In Berwin Heights, Md., 3,000 homes are to be built of semi-prefabricated concrete blocks for $2,500,000. To put his first unit over, Tugwell retained as expert help as he could find, among them Henry Wright, Tracy Augur, Frederick Biggers, Catherine Bauer and Jacob Crane.

Protests from a few indignant Marylanders that a "Red" nest was being set down in their midst were short lived in the realization that 3,000 new families, whether pink or not, would not be unwelcome contributors to local prosperity. (Next month the Architectural Forum will tell fully of Tugwelltown.)

LABOR RIFT. As everybody in building knows, there is no telling exactly how far union wage scales determine building costs and volume, let alone exactly what effects are wreaked by frequent rows within the building trades. Obviously, however, the year-and-a-half-old embroilment within the A. F. of L.'s Building Trades Department cannot have had other than a vastly adverse effect upon the industry.

With the demise of the NRA, some hopes were placed upon an early settlement of the trouble. This seemed possible because the row apparently had started over proper representation under the Construction Code. The fracas all began shortly after the Code's completion early last year. The Code provided that the president of the Building Trades Department should sit upon a temporary adjudication board, a firing-line adjunct of the Planning and Adjustment Board. This left three big unions, the bricklayer's, carpenters and electricians, which had dropped out of the Building Trades Department, without representation on this all-important board. The two factions of building workers have been at odds ever since. Each now maintains separate offices and a separate organization, and each claims to be the rightful Building Trades Department.

Last month, long enough after the NRA's demise to make it plain that all the fault, at least, was not the Code's, the feud still boiled. And this despite the widely publicized announcement by the A. F. of L., in convention last month at Atlantic City, that the trouble was slated for quick settlement. Representatives of the two factions, due to meet for arbitration "within 24 hours," had not yet gotten together after 240.

EXPANDING EXAMPLES. Particularly interesting in light of the release of FHA's amended regulations for low cost housing, now to be financed by mortgage bonds (see page 290), is the fact that three prospering low cost housing developments in the East have chosen this as a time to expand.

New units were under construction last month in Pittsburgh for the Buhl Foundation's unique Chatham Village project, and in New York City for both the City and Suburban Homes Co. and Phipps Houses, Inc., two low-rent housing companies which undoubtedly would have been limited dividend companies had New York had its State housing law for chartering such when they were formed. All three of these projects have been phenomenally successful (Arch. Forum, January, 1935, p. 98). Though philanthropic enterprises, they have been excellent profit-producers and stand as examples well worth emulating.

Plans for the additions were interesting when contrasted with older units in the same projects. All were going strong on smaller dwelling units. The Chatham Village addition, which will add 68 new homes to the old unit consisting of 129 attached, single-family dwellings, is 47 per cent of the Village's popular "studio" type. This compares with 24 per cent of such units in the existing development. Seven of the new units, however, are larger than any in the older portion, with four bedrooms and two bathrooms each.

The City and Suburban, and Phipps developments which are being added to are mammoth six-story apartment groups in Long Island's Borough of Queens. One hundred and twenty-seven new apartments in the former's Celtic Park development to 357. Whereas the older units had no two-room apartments, the new will have 24, or 19 per cent, and no five-room apartments as in the old. In the Phipps addition, the percentage of four-room apartments is being cut down from 45 per cent to 25 per cent, and the two's and three's predominate.

DISCOUNTER. Encouraging to those who have believed from the first that there was not too much the matter with the Federal Home Loan Bank System as a discounting agency were the figures of member loans for October 3, showing an all-time high of $891,122,064. This was an increase of $7 per cent in the last six months. Though the Federal Home Loan Bank Board has feared to attempt to collect data from all the banks on the disposition of the loans, there was little doubt in the minds of Board members that the loans were going out to create new construction lending.

NOVEMBER • 1935
LETTERS

Stewart McDonald's Record
Forum:
Your magazine seems to have it in for Stewart McDonald, head of FHA. It has carried two or three stories disparaging his business experience, etc., stressing his civic office as Police Commissioner at St. Louis as his only claim to distinction. Actually, his business record consists of taking a bankrupt carriage factory in 1907 and, with the addition of only $17,000 cash, turning it into an automobile factory as Police Commissioner at St. Louis, carrying two or three stories disparaging some of which are adaptably to home use. Many electrical and medical devices. Makers of the Merchants-Eaclede National bank and the Mississippi Valley Trust Company. The former was one of the largest dealers in mortgages, real estate, etc., in the Middle West. Incidentally, while he isn't an architect, he is a graduate of Cornell, and holds a degree in Mechanical Engineering as well as one of the outstanding businessmen of St. Louis and was requested many times by banks and other financial institutions to help them by serving on the Board of Directors of sick manufacturing institutions, such as Wagner Electric Mfg. Co., Seeler Implement & Plow Co., Standard Steel Car Co., Electro Company, Seagrave Manufacturing Co. In all but one instance he succeeded in putting these back on their feet.

As far as real estate mortgage experience, etc., is concerned, he probably—in the course of twenty-five years' business experience in St. Louis—made more money than all the real estate men there put together. He served on the Board of Directors of the Merchants-Eaclede National Bank and the Missouri Valley Trust Company. The latter was one of the largest dealers in mortgages, real estate, etc., in the Middle West.

Perhaps you will accept my correcting a few minor errors or misunderstandings which occur in your review and adding a few remarks on points which I consider important.

I left Frank Lloyd Wright for private reasons a year or more before his leaving Japan to return to the U. S. In fact, aside from a perspective rendering of the project I had very little to do with the work on the Imperial Hotel. I had worked with Frank Lloyd Wright in 1916 and I am greatly indebted to him. However, I feel, although it is no great importance, that you lay too much stress on the question of the influence of Frank Lloyd Wright and Corbusier on my work at the expense of those vital qualities which make it valuable. Even to speak of the Japanese influence is to see the truth from a superficial angle. There is a strong Japanese influence in my work but it is one of spirit and not of form. The Karusawa structures contain nothing of the traditional Japanese forms, and certainly nothing of Frank Lloyd Wright.

Should we be too afraid of precedent or influence we could do nothing at all. It does not matter from where we take anything but what we do with it.

Would it have been of interest to put the date, that is 1923, under the illustration of the fireplace corner in my house in Tokyo? Please look up your own publication for 1923, look up Corbusier's work of that time and Wright's and Van de Velde's and I think that you will find my house to be a pioneer in more than one respect.

My inspiration comes chiefly and directly from the requirements of the particular project. You will find that the materials used are used because they are the most economical for the project and that their volume is the very minimum required. This volume is determined by painstaking engineering. Engineers and architects work side by side in my office. I pay very strict attention to the local climatic conditions, earthquakes, typhoons, dampness, prevailing winds, etc., determining the orientation of rooms, cross ventilation, waterproofing, insulation, etc., and find a direct solution for these problems, without which no building can be of any lasting worth and value.

I am endeavoring to learn and to follow Japan's great love of nature and of things natural. I have no patience whatsoever with any kind of imitation and use most materials in their natural, unfinished state. My plans make it possible for nature to enter into the structure by inside gardens, large openings, etc., in the true Japanese spirit. I use new, modern materials, without disguise and only because they are more economical and efficient than old materials.

The finding of the very simplest form for everything is the only true solution. By this ascetic elimination of unessentials I arrive at new forms as a matter of process. I do not search for new forms for the sake of finding new forms.

Frank Lloyd Wright sacrifices a great deal to a desired form and a dramatic effect and Corbusier is often a fantastic engineer. I sacrifice a great deal to a practical solution and begin with engineering instead of ending with it.

The important factors offering unlimited possibilities for esthetic expression are the mass, looking from the outside, space from the inside and texture and color of surface both inside and out. Every other esthetic consideration is secondary and either clarifies or more likely mars the architectural expression.

Proportions are part of the mass and space and thin and I practice what I believe. My book proves it to a careful student and my newest work, not contained in the book, will reveal it still more.

Antonin Raymond
Tokyo

Hervey Allenish
Forum:
I am a very hard-working man, and since your most estimable "March of Time" reaches us here on the frontier at the unwieldy hour of 9:30 P.M. it has become my custom to fold myself in the sheets, switch on my bed-side radio and drown until awakened by the elegantly harmonious discord of your program's never-varying initial tautity. No exception was last night, but when the last balloon full of heroin had been recovered, when the November revolution had been thwarted, I lay in a half-conscious, remissent mood, thinking of my 1927-1928 sojourn in Central America. Thus, I missed the name of the 12mo or was it an 8vo of plans, specifications, and photographs of American homes. All I caught was that it was to be a Hervey Allenish opus and that the cost was one dollar. I am a subscriber to Time and to Time's demi-tas, LETTERS. For my six dollars I have received the equivalent of eleven dollars and ninety-seven cents' worth of newspapers and magazines. Therefore, I said to me, "If Time is publishing this hyar book of houses it's probably worth seven dollars of the coin of any realm."

I am very well acquainted with the Oe not able Small House Reference Number. —Ed.

Antonin Raymond
Tokyo

Alexander Credo
Forum:
It was very kind indeed of you to give so much valuable space in your August issue to a review of the book of my work published here in Japan, and gratifying that you should find my work of interest.

To Forum Reader H. M. D. Martin thanks for a factual portrait of Housing Administrator McDonald's career. Tim Forum refers to no one in its admiration of M. McDonald's Washington record to date.—Ed.
GREATER REPUBLIC STEEL CORPORATION accepts the challenge of industry . . . .

With assets increased by more than $40,000,000, with greatly enlarged reserves of northern iron ores, with advantageous terminal facilities on the Great Lakes and strategically located additional plants, a greater Republic Steel Corporation accepts the challenge of every steel-using industry.

The merger of Corrigan-McKinney Steel Company and Newton Steel Company with Republic Steel Corporation is one of far-reaching significance. Corrigan-McKinney Steel Company brings to Republic tremendously increased facilities for the production of high grade pig iron and steel. Newton Steel Company has long been an important source of supply for quality sheets.

Even before the acquisition of these companies, Republic was the world's largest producer of alloy steels, including the famous Agathon line, ENDURO perfected stainless steels and the new Republic Double Strength high tensile steels that are lightening the weight of nearly every type of transportation unit. Republic has been the sole maker of rust-resisting Toncan Iron for more than 27 years—the pioneer in the development of electric resistance welded pipe—the maker of Sil-con low-loss electrical sheets and coiled strip.

In addition to making these trade-marked products, Republic continues to occupy an important place among the producers of high quality plain carbon steels in practically all commercial shapes.

A greater Republic Steel Corporation accepts the challenge of industry—looks optimistically to the future—keeps pace with the increasing demand for ever better steels—steels lighter in weight—steels of greater strength—steels more resistant to corrosion and high temperatures—steels that strike a new note in beauty—steels more dependable, longer lasting and more economical.
Even Better than its Bond—

Age of Roof... 25 YEARS
Condition ... EXCELLENT
Type ... JOHNS-MANVILLE SMOOTH SURFACED ASBESTOS

HOW explain the fact that so many J-M Roofs are still in their prime as they approach the quarter-century mark? These long-lived roofs were built up with felts made of the rot-proof, permanent mineral, asbestos. Because asbestos fibres are non-capil-

Johns-Manville SMOOTH SURFACED BONDED ASBESTOS ROOFS

lary, J-M Asbestos Felts form a positive barrier against evaporation of the waterproof asphalts; they are virtually immune to the intense drying out action of the sun. Hence, a J-M Asbestos Roof remains weatherproof throughout its long life, with minimum expense for upkeep.

For full information on all Johns-Manville Roofs, for detailed data on this whole roofing problem, write for our new book, "Facts About Built-Up Roofs." Free. Mail the coupon below, today!

FREE! This Valuable Book on the Built-up Roof
IT EXPLAINS all about a built-up roof from start to finish ... shows why certain materials, certain methods of construction, afford more complete protection from the elements ... IT ANSWERS the flashing problem and many other troublesome questions on built-up roof construction ... IT TELLS how roof insulation saves money on heating and air-conditioning equipment, how it prevents condensation, how it protects the roof from damage due to expansion or contraction. Send for your FREE copy today; mail the coupon.

JOHNS-MANVILLE, 22 East 40th Street, New York City
Send me a copy of "Facts About Built-Up Roofs."

Name ___________________________ Title ___________________________
Organization ___________________________
Address ___________________________
City ___________________________ State ___________________________

And No Exception Either!
Here is a partial list of other J-M Roofs approaching the quarter-century mark and still in excellent condition...

- 24 Years old at Cincinnati, Ohio (American Valve & Meter Company)
- 22 Years old at Chicago, III. (Reid, Murdock & Company)
- 22 Years old at Chicago, III. (Sears, Roebuck & Co.) (Grocery Building)
- 23 Years old at Louisville, Kentucky (American Medicinal Spirits Co.)
- 23 Years old at Kansas City, Mo. (Kansas City Star)
- 25 Years old at South Bend, Ind. (Oliver Farm Equipment Co.)
- 23 Years old at Detroit, Mich. (Detroit Baseball Co., Navin Park)
- 22 Years old at Bluefield, West Va. (Huff, Andrews & Thomas Company)
- 21 Years old at Seattle, Wash. (Lincoln High School)

THE • ARCHITECTURAL • FORUM
L E T T E R S

(Continued from page 4)

German Housing Today

orum:

Governmental home construction is to-

day the chief activity of German building.

It therefore serves as a good illustration of

the attitude of the Government towards

architecture. The official Nazi policy is a

reversal from modernism to the traditional

ers and methods of the 19th century.

The day of Seimenstadt and Zehlendorf in

Berlin, of Romerstadt in Frankfurt, of

Armbeck in Hamburg, and of the scores

of other well-planned communities is over.

It has been decided that buildings with

road flat surfaces, simple lines, and flat

roofs are non-Aryan. Simple, small cottages

are now being erected, offering no oppor-
nunities for the highly developed skill of

the German designers.

The present housing program has been a

motion since early in 1933, a year before

Hitler came into power. It was then be-

ming more and more evident that even

with her well-planned, large scale devel-

opments, Germany's housing shortage was

still very acute. To relieve the pressure

upon the cities and for reasons of economy,

germany developed her program along the

lines of subsistence homesteads. The best

examples of the new housing which I saw

were on the outskirts of the large cities of

southwestern Germany. Let us look at what

is being done at Stuttgart as a typical ex-

ample.

The houses are built on land adjoining

and belonging to the city of Stuttgart. The

groups or colonies number several hundred

houses each, at various stages of comple-

tion. They are built in monotonous unin-

vers. Each single or semidetached dwelling has a plot of ground measuring

about 50 x 900 ft. The plots are just large

ough to grow some vegetables and to

maintain some small live stock; a question-

able subsistence. The isolation of the

colonies from the cities and their separa-

tion from any possible place of employment

makes one wonder how the inhabitants

would exist even if the garden patches were

large enough to supply the food that they

needed. Two of the Stuttgart groups which

I visited each required about an hour's car

tide and a very long walk to reach them.

The homes are far from spacious. They

usually have three or four small rooms, of

which one is an attic room. There is an out-

tdoor tool closet. The mechanical equip-

ment—heating, lighting, plumbing and

training—is of the simplest. The water

closet is out of doors. Frequently the water

supply is from an outside hand pump.

These houses seem all the more primitive

in comparison with Stuttgart's ultra mod-

ern housing community, the Weissenhof

Siedlung, which was built as a modern home

exposition.

The organization of the workers for the

construction of the houses more closely fol-

ows a pattern which we are accustomed to

associating with Russia than with the

master craftsman method of early Ger-

many. The men selected to build the

houses are the people who will live in them.

Most are clerks and trades people, unem-

ployed or partially employed and of Nazi

preference. Enough skilled building men

are included to see that the work is prop-

erly executed. Workmanship varies mainly

with the ability of these skilled men to

 teach people who have not been accus-

tomed to handling tools, and with the

enthusiasm of the workers. In one group,

the masonry walls looked as though they

could easily be pushed in, while the wood

framing appeared like the work of master

journeymen. Wives, sisters and children

helped with the odd jobs. I was told that when

all the houses are "under roof" lots are

drawn to determine which family will get

which house. This is to prevent the men

from working more diligently on a specific

house, which is somewhat ironical in view

of the super-individualistic ideology of

present day Germany. Just how satisfac-
tory this system of drawing lots works

out is hard to judge.

To finance the housing program, the gov-

dernment grants a loan of two thousand five

hundred marks—about $8,000—to the

home builder. Two thousand marks is for

the house and land and the remainder for

seeds, tools, live stock, etc. The interest

charge on the loan is from three to four

per cent, and the amortization period is

thirty years. Barring failure to pay, the

tenant will then hold his home in absolute

ownership.

Today Germany repudiates the coopera-
tive concept. Not only do her communities

have no cooperative enterprises, but there

are no private or State industries to supple-

ment the portion of subsistence which can

be earned by working the individual garden

plots.

The construction of these German sub-

sistence communities is certainly moving

ahead rapidly. Only time can test the suc-

cess or failure of the scheme, although I

must confess to pessimism. The isolation

of the unemployed can certainly be no solu-

tion for the economic ills of any nation.

Even the building of economically planned

towns such as Rexford Tugwell has de-

scribed or like the often referred to English

"Garden Cities," Letchworth and Welwyn,

which have a diversity of industries suffi-
cient to insure the financial stability of

the city and its inhabitants, cannot be

successful unless there are ample outside

markets to absorb the products which the

town produces. Really self-sufficient com-

munities, entirely independent of outside

products and markets are a denial of the

advantages of modern complex civilization.

The solution of the housing problem can

only be considered in conjunction with a

working socio-economic setup. This fact, I

am afraid, is not being fully appreciated

by the Germans in their present program.

If architecture is the reflection of historic

trends, then Germany's reversion to reac-
tionary styles is the logical complement to

her attempt at general economic and cul-
tural reversion. It is not so much her

architects as her governmental policies

which are at fault. Pre-Nazi German archi-

tects had helped to set the pace for new

forms and ideas in building. Not until the

present policy of cultural strangulation is

dbended can there be renewed health in Ger-

man architecture.

Richard B. Fernbach


MITi7hitations

Forum:

Please let me congratulate you on your

October number for you have performed a

real service for which every architect and

builder should be grateful. Read, in con-

nection with price differentials as given, for

instance, in the Engineering News-Record,

it makes a most interesting contribution to

our knowledge of comparative values. I

hope you will reserve a few copies for a

short time as I have advised our students

to purchase copies for permanent reference.

Ross F. Tucker

Professor in Charge

Department of Civil and Sanitary Engineer-

ing. Course in Building Construction

Massachusetts Institute of Technology

Cambridge, Mass.

Ripleyesque

Forum:

SMALL HOUSE REFERENCE NUM-
BER ARCHITECTURAL FORUM

MAGNIFICENT AND RIPLEYESQUE

ACHIEVEMENT STOP CONGRATU-
LATIONS FROM THE INNER SANCT-
UM ON A PUBLIC SERVICE OF THE

HIGHEST SOCIAL SIGNIFICANCE

AND INDIVIDUAL USEFULNESS.

Lincoln Schuster

New York City

November 1935
The X-ray, after a successful probation period in industrial plants, enters the building field as the first rapid and certain method of accurately testing the soundness of welded joints.

When the Irving Trust Company of New York put up its new building at 1 Wall Street a few years ago, the Board of Directors sent out engraved notes of apology to some five hundred of their neighbors, asking their indulgence “during the unavoidably noisy weeks that lie ahead,” while the steel frame was being erected. It was a gentlemanly gesture to make, but the development of welding indicates that it may soon be an unnecessary one.

A weld is a place where two pieces of metal have been fused together. When properly made, the joint is often stronger than the neighboring metal; a bad weld, however, is extremely dangerous structurally as well as deceptive in appearance. This means of joining the frame of a steel building is frowned upon in many localities, forbidden in some, and not without reason. Welding requires skill; more important, it requires an absolutely certain and rapid method of ascertaining whether the joint is sound or not. This method is now available, and has been already put into use in industrial plants with pronounced success: it is the X-ray.

The modern X-ray apparatus is simple in design, compact, and easily adaptable to the examination of welded structures. An ordinary power line of 220 volts supplies the current to the high-tension transformer which steps it up to 220,000 volts. The tube is mounted in a shockproof case and can be mounted on a stand or clamped to the member to be examined. With this equipment it does not take more than a minute to obtain an exograph through 1½ inches of steel.

An X-ray test of a welded joint will reveal defects on photographic plate down to 1 per cent of a 2-inch member in steel that is thinner it will reveal even finer cracks. Visual examination can be made with a fluorescent screen and it will show up defects ranging from 5 to 10 per cent of the total thickness. The advantages of this method are rapidity and ease of examination; photographic film shows the condition more accurately, and moreover provides a permanent record which should be of considerable importance if anything should go wrong.

An examination made with X-ray apparatus will reveal improper fusion between weld and parent metal, gas inclusions in the weld zone, and shrinkage cracks developed during or after welding. Consistent use of this method will reveal that a certain intensity of the electric arc will produce the best results, and a study of this data will tend to raise the general quality of the work and minimize improper welds.

With a general upturn in building in the offing, and the advent of several steel companies into the small house field, the availability of this method of weld testing indicates greatly increased use of welding in the building field.
In retail stores, colorful custom-designed floors of Armstrong's Linoleum can increase your client's sales by guiding customers to back-of-the-store displays that might otherwise be overlooked. And by being unlike other floors in town, they can serve to "trade-mark" your client's store in his customers' minds. He'll appreciate both these advantages.

He'll also appreciate the low cost, long life, and inexpensive maintenance of Armstrong's Linoleum Floors. Armstrong's Linoleum requires only simple washing and waxing to keep it fresh and beautiful for years. Expensive refinishings are unnecessary.

For complete information on the design possibilities of Armstrong's Linoleum, write now for file-sized "Public Floors of Enduring Beauty." For colors and grades, see Sweet's, Section 15, Catalog 35, Armstrong Cork Products Co., Building Materials Division, 1203 State St., Lancaster, Pa.

Armstrong's Linoleum Floors

Below—Hats and shirts, inset in a field of Armstrong's Pattern 61 Marble Linoleum individualize this shop of Armstrong's Linoleum in the Harry Knox Shirt Shop, Indianapolis,
Decreased breakage hazard and increased speed and safety in globe handling have been made possible by the new Macbeth "Chip-Proof" Globes. Rough, unsealed edges have many minute defects which may expand under the slightest strain and eventually cause breakage. The edges of Macbeth "Chip-Proof" Globes, instead of being ground, are seared by a flame which seals and rounds the fitter rim to a velvet smoothness. This process also reinforces the edge with a strong shoulder of extra glass which gives added strength to the entire globe. A former weak point of all globes has been made a strong point in Macbeth "Chip-Proof" Globes. Macbeth "Chip-Proof" Globes are also more convenient and safe for both installation and cleaning. Their smooth edges cannot possibly injure hands or arms. These advantages of "Chip-Proof" Globes are available without extra cost in Macbeth Globes exclusively. A Macbeth representative will be glad to demonstrate this new globe efficiency at your convenience. Descriptive printed matter will be mailed on request.

MACBETH-EVANS GLASS CO., Charleroi, Pa.
ORUM OF EVENTS

AL WAVE

SONAL in the Philadelphia Evening trim: “PLAN wanted for bungalow, 14 x 22, for Florida Keys, strong enough possible to withstand tidal wave. State if plan is accepted. H-374 Bulletin.”

TO THE COURT

month, “the honorable, the chief judge and the associate justices of the Supreme Court of the United States” moved the $10,000,000 marble structure defining Illinois/SS GILBERT’S COURTHOUSE

or the judges: $35 worth of chairs led for them by the late Cass Gilbert, architectural curiosity: two spiral supporting marble staircases. Washington reporters who had already made architectural news with stories of the restored White House kitchen found little to say about a building which has already become a city landmark and which has been pictured and described in every newspaper in the land. Known to everybody was the sculpture of Robert Aitken which included figures of himself, Cass Gilbert, and Chief Justice William Howard Taft (who was the building’s most activeponent) as a boy. Less known were facts as that the building used 4,500,000 ft. of marble, that it houses a set of offices for the judges and a large dining room on the third floor, a kitchen equipped to serve 200 and a cafeteria on the first. All through the building cost about $10,000.

EMORIALS

U.S. memorials run a wild gamut from restrained dignity of such buildings as the Lincoln Memorial in Washington, D.C., oddities of no architectural parentage and only slight local fame. Last month caught news of a memorial, which if it did not merit extravagant architectural praise, was of general interest because it was un-

usual and of particular interest to the 25,000 spectators who watched its dedication. Conceived by Walter E. Olson, president of Chicago’s Olson Rug Co., as a tribute to the American Indian, and erected at the cost of $20,000 in a plot near his factory, the memorial is believed to be the largest rock garden in the world. It is 150 ft. long, rises to a distance of 25 ft., and has three waterfalls, one of which requires 1,000 gallons of water a minute to operate. Most of the stones came from an old Illinois wall near the Kankakee River. Last month vis-

Nelson Robinson, Jr. ($2,500), the Julia Amory Appleton Traveling Fellowship ($2,500), the Charles Eliot Traveling Fellowship in Landscape Architecture ($1,500), offered by the faculty of architecture. Harvard’s latest and biggest is in memory of Arthur W. Wheelwright, 1887. A gift of $100,000 will provide annual income of approximately $3,500, will provide travel abroad to a graduating student “chosen on his complete record rather than by any one test, examination or competition.”

EDISON CONCRETE

ask any man in the street who Thomas Alva Edison was and he will answer “the electrical wizard.” Not one in a hundred would answer “an important cement man.” Yet it happened that in Mr. Edison’s middle years he sank his fortune into a plant for extracting iron from low-grade ore. And hardly had he been done than when tremendous iron deposits were discovered in Michigan. After a stock-taking of his huge investment in motionless machinery, Mr. Edison decided to devote it to the production of cement.

From that came Mr. Edison’s idea for a molded concrete low cost house. His plan: to pour a concrete house, to cost a mere $500. The catch: the iron molds (which would serve to build an unlimited number of dwellings) would cost the developer $25,000. The patented mold method provided for creating an entire house, complete with sides, roofs, parti-

(Continued on page 28)

THOMAS EDISON’S CONCRETE HOUSE

Michigan made him think of it

HARVARD FELLOWSHIP

Harvard’s School of Architecture is richly and contentedly endowed with scholarships and fellowships. Last month Harvard added one more fellowship to a list which already includes such fellowships as the Nelson Robinson, Jr. ($2,500), the Julia Amory Appleton Traveling Fellowship ($2,500), the Charles Eliot Traveling Fellowship in Landscape Architecture ($1,500), offered by the faculty of architecture. Harvard’s latest and biggest is in memory of Arthur W. Wheelwright, 1887. A gift of $100,000 will provide annual income of approximately $3,500, will provide travel abroad to a graduating student “chosen on his complete record rather than by any one test, examination or competition.”

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Interior of Jewish Synagogue, Council Bluffs, Iowa, painted with Dutch Boy White-Lead and Lead Mixing Oil by painting contractor, H. J. Mosher. The members of the church are reported exceedingly well pleased with the appearance.

Brick exterior of First National Bank, Council Bluffs, also painted with Mr. H. J. Mosher with Dutch Boy White-Lead and Lead Mixing Oil. Bank officials were so well pleased, they had interior finished with the same paint.

Here's a flat finish so sturdy it stands up outside, and at the same time so rich and beautiful you'll be proud to use it for the finest interior decoration.

The fact that it defies the weather on outside jobs (for this flat paint thoroughly seals and waterproofs stucco, concrete, brick and stone) gives you a good idea how it withstands wear and repeated washing on inside jobs. This is a finish that is difficult to soil permanently. Ink stains, pencil marks, finger smudges, grease and dirt can all be completely removed.

All your painter needs to produce this vastly improved flat paint is Dutch Boy White-Lead and its special companion product...Dutch Boy Lead Mixing Oil.

In addition to extraordinary durability and white-lead's characteristic beauty, you also get these other important advantages:

- Easy to mix—just add Lead Mixing Oil to white-lead. Levels out smooth and even. Requires no stippling. Has excellent sealing qualities. Hides fire-cracks. Brushes with the ease and high spreading rate of all white-lead paint. Gives a white-lead "flat" at a reduced cost per gallon.

DUTCH BOY Lead Mixing Oil
IN THIS bathroom, Black Carrara Walls, accented with White Carrara cap and base, create a feeling of richness, beauty and elegance that endows the room with definite individuality. Note how the Carrara is decorated above the bathtub by sand-blasting and painting.

Bathroom Walls of Carrara are:

GOOD LOOKING • PERMANENT • PRACTICAL

Walls of Carrara Structural Glass can make a bathroom. With its smooth, reflective surfaces, its mellow color tones, its versatility and ready adaptability to many kinds of treatment, this modern wall material offers the architect an entirely new range of interesting possibilities in bathroom...or kitchen...design.

Carrara's practical features recommend it no less than its unique beauty. It will not check, craze, stain, absorb odors. It is impervious to grease, grime, moisture. And its good looks, therefore, do not deteriorate with time. It is easily kept clean by merely wiping it periodically with a damp cloth. And its cost is surprisingly low for such an obviously superior material.

Architects like Carrara...because it helps them design bathrooms and kitchens of unusual originality and effectiveness...and because Carrara is as fine a medium for remodeling work as it is for new construction. We believe you will find our booklet "Personality Bathrooms and Character Kitchens" a valuable addition to your files. It contains complete information, and interesting pictures of suggested installations. Send the coupon for your free copy.

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The modern structural glass

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2308A Grant Bldg., Pittsburgh, Pa.

Please send me, without obligation, your booklet entitled "Personality Bathrooms and Character Kitchens."

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City___________________________State___________________

OVEMBER • 1935 13
THE President, during the past few weeks, has approved allotments to finance thousands of PWA projects. A very large percentage of these projects are public school buildings. In order that the President's stipulations regarding construction schedules may be met, school authorities and their architects and engineers will be very busy during the next few months. In spite of the many things to be done during the short time available, these school authorities, architects and engineers will wish to give careful consideration to the air conditioning problems which the construction of these schools presents. The Herman Nelson Corporation offers the cooperation of its entire organization in this work. Its representatives throughout the country are at the service of those responsible for the air conditioning of these schools. Each of these representatives is a specialist in school classroom air conditioning. All but a few of them spend their entire time in this class of work. On these pages we list them with their addresses. Any school authority, architect or engineer who desires the assistance and cooperation of this organization is requested to get in touch with the nearest representative, or with the Home Office at Moline, Illinois.

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W. K. Hornbeak
242 Madison Ave.

 TENNESSEE, Nashville
Paul R. Jarratt
117 Fifth Ave., North

 TEXAS, Dallas
W. E. Lewis & Co.
508 Construction Bldg.

 UTAH, Salt Lake City
Rushby C. Murple
412-13 Dooy Bldg.

 VIRGINIA, Richmond
W. Wallace Neal
302 Carneal Bldg.

 VIRGINIA, Roanoke
Carroll G. Traylor
301 Liberty Trust Bldg.

 WASHINGTON, Spokane
Heating Assurance, Inc.
121 N. Browne St.

 WASHINGTON, Tacoma
H. L. Swindler
41 St. Helens Ave.

 WISCONSIN, Milwaukee
C. W. Miller
338 S. Second St.
HERMAN NELSON System of Air Conditioning for Schools

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Le Corbusier

Marking the first visit to the U. S. of the French architect whose untrammeled thought has done much to clarify and direct the trend of today's architecture, THE ARCHITECTURAL FORUM presents a page of quotations from his now historic book *Vers une Architecture* (Paris 1923). These ideas were first formulated in the magazine *L'Esprit Nouveau*, founded by him in 1919, but no longer published. The statements headed 1935 were given THE ARCHITECTURAL FORUM in an interview in which Le Corbusier discussed his new, and what he considers his major work, *La Ville Radieuse*. 

THE ARCHITECTURAL FORUM
THE HOUSE IS A MACHINE FOR LIVING IN.
The "styles" are a lie. Architecture has nothing to do with the various "styles." The styles of Louis XIV, XV, XVI, or Gothic are to architecture what a feather is on a woman's head; it is something pretty, though not always, and never anything more. Style is a unity of principle animating all the work of an epoch, the result of a state of mind which has its own special character. Our own epoch is determining day by day its own style. Our eyes, unhappily, are unable yet to discern it. The problem of the house has not yet been stated. The house is a machine for living in. The primordial instinct of every human being is to assure himself of a shelter. The various classes of workers in society today no longer have dwellings adapted to their needs; neither the artisan nor the intellectual. It is a question of building which is at the root of the social unrest of today: Architecture or Revolution. Architecture can be found in the telephone and in the Parthenon. How easily could it be at home in our houses! Houses make the street and the street makes the town, and the town is a personality which takes to itself a soul, which can feel, suffer and wonder. How at home architecture could be in street and town! The purpose of construction is to make things hold together; architecture, to move us . . . . We have the American grain elevators and factories, the magnificent First Fruits of the new age. The American engineers overwhelm with their calculations our expiring architecture. There is one profession and one only, namely architecture, in which progress is not considered necessary, where laziness is enthroned, and in which the reference is always to yesterday.

ARCHITECTURE IS THE KNOWING, CORRECT AND MAGNIFICENT PLAY OF FORM UNDER LIGHT.
• It is because we have practiced city planning as if it were a two-dimensional science that cities have been deprived of the means of bringing the "essential pleasures." City planning is a three-dimensional science.
• If we cling to traditional practices of architecture, we will be unable to produce the dwellings that we need, either in quantity or in quality.
• We must reorganize land ownership and make the earth ready for all projects that advance public welfare.
• You can do the most exact planning. But your plans may be unrealizable because the laws of Society, Institutions and Authority oppose them. I believe that planning is putting Authority's back to the wall.
• A new social conscience will bring about, sooner than you imagine, the steps necessary for this most elementary need: the city dwelling; that is, architecture and city planning, indissolubly linked.
• This aim dominates everything: tear Man away from the chaos of the first machine age; bring to him his "essential pleasures."
On May 1, 1935 the Palazzo d'Italia and the International building, seventh and eighth units in the development of Rockefeller Center, were opened to the public, signifying the completion of the Fifth Avenue front and the addition of 827,149 sq. ft. of office space to the fourteen-odd million still available on Manhattan Island. More modest in its predecessor, the 70-story RCA building, the newower rises 38 stories from the street, displays but small quantities of the Art which kicked up such a ruckus during the earlier stages of the development, and makes its one big splash with a marble-lined, copper-ceilinged lobby four stories in height, whose focal point is a pair of the shiniest, rankiest escalators in the city. Structurally the International Building differs but slightly from its predecessors: the same conservative approach which governed their design obtained here as well; mechanically it incorporates several novations, at least one of which—the so-called “Selective Cooling” system—marks what is probably the most important single advance in the technique of large-scale cooling since the first days of the industry.

The form of the building is severe, and rather chunky; theower rises straight to its full height, terminated by a twony open loggia which conceals machinery and storage equipment; the top is unbroken save for some ornament which softens the line but does not alter the shape. The setbacks which flank the main body of the tower were determined not by esthetic considerations but by the banks of elevators: as a bank drops out the sides are set back so as not to increase the depth of the office space unduly; this condition is made clear by the plans which follow. The immense importance of practical requirements in the determination of the forms of such structures as the International Building, frequently lost sight of in criticism, and it is a point which cannot be stressed too much.

The Rockefeller Center development has had one purpose since its inception, and that purpose has been to invest a certain amount of money in a manner that would ensure a reasonable return on that amount. This primary consideration, the creation of rentable space in sufficient quantity to pay taxes, operating costs, and a profit, has never been for in instant lost sight of. Esthetic considerations became important only as they contributed to the rentability of the space available, and the great numbers of sculptors and painters on the project were employed, not because of any philanthropic desire on the part of the owners to play Maecenas, but because of a conviction that “art paid.” In a set-up of this type the men who manipulate costs and possible returns hold the strings: the architect works within the strictest possible limits. Yet in spite of these restrictions it is the architect who in the end is the creator of whatever there may be of beauty and distinction. The dramatic qualities of the
buildings in this project, the exciting contrasts of volumes, architectural qualities, attained within the boundaries imposed by financial considerations. For those who rebel against this “shackling” of art, it might be well to remember the Greeks who designed within a set form for three centuries, or the Italian painters of the Quattrocento.

An examination of the stages through which the International Building passed, from the first sketches to the completed structure will show the nature and the extent of the limits within which the architects worked. In the beginning it was proposed to build a department store where the two wings are now located; this required that the office space be placed in a slender tower at the back of the lot, 45 stories in height. When the department store idea was dropped the building was redesigned as a 30-story tower with two nine-story extensions in front. A later attempt, which retained the wings but reduced the tower to 14 stories, was discarded. The building reached its final form only after the British Empire Building and its twin were completed, at which time it was observed that a repetition of these units along the avenue would have an agreeable effect; this concession to appearances pushed the tower up to 38 stories, which height gave the required rentable space. In all its phases the building took its form from the rental department, not the architects’ office; but once determined it was within the architects’ power to make or ruin it.

The court which leads to the main entrance of the International Building is of splendid and imposing design. Huge piers, without ornament, give the composition solidity and dignity; while in the daytime the plate glass windows reflect the elaborate facade of the Cathedral of St. Patrick across the avenue, furnishing a contrast as exciting as it is unexpected. In the center of the court stands a curious wooden affair shaped like the top of an obelisk, where it is planned to place a statue of some sort at a future date; this element, regardless of its intrinsic merit, is likely to be superfluous in an area where a clean sweep of pavement leaves nothing to be desired. The main hall, directly beyond the entrance, is one of the best things of its kind that has yet been done. Four stories in height, with four thin columns extending from floor to ceiling without bases, caps, or any interruptions save some indirect lighting fixtures, it is a most convincing solution. The columns are covered with a veneer of marble whose contrasting colors give it a lack of solidity which emphasizes the existence of the steel within. This emphasis is further carried out by the shapes of columns, whose H-plan echoes the form of the structural members. The walls are covered with richly veined Greek marbles whose patterns are sufficient decoration in themselves. Similarly, the floors are plain save for the texture of the terrazzo. The copper leaf ceiling is a highly successful innovation which originated in an ash tray whose color and surface so delighted one of the archi-
tects that he adopted it for this hall. The show windows, which extend almost the full height of the room, are still in an experimental stage. It has been planned to use the hall for exhibitions of a character not yet definitely determined, and the show windows will become a part of this display. At present various schemes are being tried to discover what type of thing will be best suited to the space. The escalators in the center of the room lead down to a shopping concourse, and up to an exhibition level. The hard, machined perfection of their forms is in complete harmony with the almost mechanical severity of the room. Lighting is provided by the show windows at the sides of the room, by reflectors inserted in the channels of the columns, and by the large windows which open on the entrance court. Although the room is high, and covered for the most part with a dark material, these lighting sources, aided by the reflecting surface of the ceiling, give adequate illumination.

Passages to the elevators are provided on either side of the escalators. Here, in both side and elevator corridors, long troughs, suspended from the center of the ceilings, furnish the illumination, their long lines giving direction to the plan. An unusual amount of daylight is admitted through the large entrance openings which are situated at the ends of both long
and transverse corridors. Like the main hall, the elevator corridors have a similar quality of precision, and show the same reliance on surface pattern. Elevator doors are simple surfaces of polished metal, and moldings are eliminated for the most part. The cabs, better lighted than those in the RCA building, are of metal, covered with wood veneer interrupted at intervals by horizontal strips of metal. Their most distinguished feature is a patented ventilating device, installed in the center of the ceiling of each cab. Its refined, precise form strikes the keynote for the entire treatment of the first floor, whose consistently maintained quality of sleek mechanical perfection is as appropriate a solution for the commercial building as has yet been seen.
CAVATION AND ENCLOSURE OF BUILDINGS—Entire area rock-cut excavation. Basement walls and sub-base ment floor slabs are stone concrete with 1" doodolitic finish on both.
viding strips. All door and window trim is nickel bronze. The show windows in the main halls extend from the window bulkhead at the ground floor to the ceiling line, under the 5th floor level. The windows are continuous in height and are subdivided with structural glass floor panels which are removable. Interiors of show windows are covered with fabric by J. H. Thorp & Co. Louvered and spot lights are set in the sides of the cases. Show window lighting supplied jointly by the Friek, Holophane, Sunlight, and Century Companies.


TOILET ROOMS—Vitreous ceramic tile floors, glazed tile wainscoting in black finish and black structural glass toilet partitions with plastered walls and suspended metal lath and plaster ceilings. Janitors' closets have vitreous ceramic tile floors, glazed tile base, and cement plaster wainscoting above. Tile by Del Turco Bros., Harrison, N. J. Fixtures by Crane Co. Metal toilet stall doors, Schwindt Bros.

STAIRS—All building stairs are steel construction with iron balusters and steel newels, pipe hand rails and wall rails. Stairs by Albee-Godfrey-Whale Creek Co., Brooklyn, N. Y.

DOORS AND FRAMES—All doors, except those in public areas in shopping basement and ground floor, are hollow metal with combination steel bucks and trim; the doors are generally glazed full length and provided with glazed hollow steel transoms above. All hollow metal work, doors and bucks, by Dahistrom Metal Door Co., Kalamein doors by Herrmann & Grace.

SADDLES—All door saddles in tenant rentable areas are aluminum, by Aluminum Company of America.

ALUMINUM RAILINGS—Sexauer & Lemke.

LIGHTING—Office and corridor fixtures, Westinghouse Electric and Manufacturing Co. Other office fixtures by Graybar Electric Co. Special fixtures by Kantack, Inc.

SPRINKLER EQUIPMENT—By the Grinnell Co.

VENETIAN BLINDS—Mackin Venetian Blind Co.

ELEVATOR CABs—Metal, with veneer of Camaletta wood; a new construction designed to eliminate cab squeaks. Lighting, direct. Flooring, “Royalite” rubber flooring, by Architectural Flooring Products Co. Cabs by W. S. Tyler Co.

ESCALATORS—Four, in main hall, serving the shopping basement and the mezzanine level. Nickel bronze finish. Otis Elevator Co.

MAIL BOXES AND CHUTES—Nickel bronze finish on boxes. Mail chutes have special cigarette ejector at each letter drop to prevent fires from lighted cigarettes which have occurred frequently in the New York area. Cutler Mail Chute Co.

DIRECTORY BOARDS—Nickel bronze frames, Tablet and Ticket Co.

HARDWARE—Natural bronze on typical floors, nickel bronze on ground floor and shopping basement, P. & F. Corbin Co.

ELEVATORS—Equipment by Westinghouse Mfg. Co. A new feature, “quota control” limits the number of calls any cab will answer, ensuring more even service. An immediate signal device is another innovation pressure of the signal button is followed immediately by lighting of the lamp at the door where the next cab is due. It is estimated that this will speed up loading by ten per cent. Speeds vary from 600 to 1200 ft. per minute. Both passenger and service elevators are of self-leveling gearless traction type. Doors equipped with two electric eyes to prevent accidents resulting from doors closing before passengers are on elevator.

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New materials—leather, stainless metals, glass—with qualities of lightness, color and durability adapt themselves so perfectly to the modern bar that they have become as typical of today's drinking place as the mahogany bar and brass rail of yesterday. In the Hotel La Salle Bar, and its two selected Chicago contemporaries which follow, the designer has displayed architectural ingenuity in interpreting these materials with no sacrifice to individuality.


LIGHTING—Solar Light Co., Chicago.

FURNITURE—Wall seats of scarlet imitation leather (U. S. Rubber Co.). Tables painted turquoise blue; tops of Formica. Arm chairs of maple with scarlet imitation leather coverings. Bar stools of maple with white leather seats. (Garland Upholstering Co., Chicago.)
The first and second floor of a 60-year old building of ordinary construction once occupied by the Lipton Tea Co. now house two sleek adjuncts to contemporary living: Harry's New York Bar on the first floor and the Globe Trotters Club on the second. The bar front matches the copper and stainless steel fireplace (right) with the horizontal lines repeating the blue and white bands of the wall. Aquaria behind the bar are indirectly lighted. Mural in the club dining room represents the club's seven private rooms each of which is decorated in a style typical of London, Paris, Berlin, Naples, Shanghai, Vienna and Havana.
BAR LOUNGE
- Walls—deep blue.
- Fireplace—copper, stainless steel, black tile.
- Murals—white and gold.
- Carpet—mulberry.
- Furniture—upholstered in yellows, terra cotta, alligator skin.
- Ceiling—yellow.

BAR
- Ceiling—deep ultramarine.
- Walls—dull black.
- Decorations—white and blue.
- Bar Front—copper, stainless steel, with deep blue bands.
- Carpet—mulberry.

CLUB DINING ROOM
- Ceiling—eggshell white.
- Walls—orange.
- Ornamental plaster—coral, white, finished with emerald green glaze.
- Drapery—reddish brown and yellow ripple mohair.
- Bar furniture designed by Harry Lund, manufactured by Wisconsin Chair Co. and Warren McArthur. Bar front and fireplace made from Anaconda sheet copper and Endure Steel, Republic Steel Corp. Carpets by Sloan Claridge.
Latest and architecturally most up to date of their long line of successful Chicago restaurants, is the Eitel Brothers' Yankee Grill on the main floor and lower arcade of the Field Building. Designer Alfred Shaw of Graham, Anderson, Probst & White chose an American theme which dictated a color scheme mainly red, white and blue, and executed it in a modern adaptation of Viennese baroque. This treatment provoked such gay notes as Edgar Miller's equestrian figures of Washington and Paul Revere on the winding stair hall connecting the two levels. The patriotic motif is further carried out in the oyster bar's lighting fixtures of flags, stars and spread eagles, and extends even to the white and blue costumes of the waitresses. The restaurant was planned to serve every kind of meal from breakfast to private dinner party in decoratively suitable surroundings. The major dining divisions are: main dining room, marine room, grill, buffet, oyster bar, lunch room and two private rooms, one seating 30, the other 60. The last two units may be thrown together to form a single banquet room. Total seating capacity of the restaurant is approxi-
mately 600. Between the grill and buffet on the upper floor (level with the Field Building’s main lobby) is a glass trout tank, replenished once a week with game fish from Wisconsin. Here patrons use nets to catch the fish they want prepared. A still further step in taking the customers into the restaurant’s confidence is a service kitchen opening off the grill, permitting diners to watch the preparation of the food. The rooms are air conditioned throughout. Rubber tile floors and acoustic tile on walls and ceilings keep the restaurant’s inevitable clatter at a minimum. (Plans are shown on page 477.)
A three-story plan composition. On the upper level are located the higher priced dining rooms and the bar. A stair leads to the basement where the lunch counters and services are placed. There is a direct entrance to this portion of the restaurant from a lower arcade. Receiving rooms, storage spaces for food and wines are placed in the sub-basement, their relation to the floors above being indicated by the diagram.

CONSTRUCTION OUTLINE

CONSTRUCTION
General contractor—George A. Fuller Co.
Concrete work—Melvin White, Inc.
Structural steel—Wendnagel & Co.
Partitions—National Fireproofing Corp.
Plastering—McNulty Bros. Co.

WALL AND FLOOR FINISHES
Marble—Vermont Marble Co.
Art marble—Chicago Art Marble Co.
Ceramic and quarry tile—John Caretti & Co.
Ceramic tile—Mosaic Tile Co.
Sanacoustic tile—Johns-Manville Sales Corp.
Rubber tile and linoleum—Melville Rubber Tile Co.
Rubber tile—Stedman Rubber Tile Co.
Carpets and linoleum—Marshall Field & Co.
Paints and varnishes—Pratt & Lambert, Inc.

IRON WORK
Ornamental iron—E. M. Weymer Co.
Metal partitions—Sanymetal Products Co., Inc.
Hollow metal doors—Variety Fire Door Co.

GLASS
Carrara structural glass—Pittsburgh Plate Glass Co.

WIRING
A. S. Schulman Electric Co.

LIGHTING
Illuminated signs and reflectors—Frink Co.
PLUMBING
By O'Callaghan Bros.
Sprinkler system—P. Nacey Co.

HEATING
Robert Gordon, Inc.

VENTILATING
R. B. Hayward Co.

AIR CONDITIONING
Carrier Engineering Corp.

AIR COMPRESSOR
Kellogg Compressor Service

ELEVATOR AND DUMBWAITERS
Otis Elevator Co.

WOODWORK
Cabinets—Schick-Johnson Co.
Lunch and cigar counters—Reliance Cabinet Co.

BAR FIXTURES
Bastian-Blessing Co.

SIGNS AND LETTERING
Eugene M. Bornhoft

KITCHEN
Equipment—Duparquet Range Co., G. S. Blakeslee & Co.

Electric cooking equipment—Edison General Electric Appliance Co., Inc.
Gas ranges—Vulcan Range Co.
Bakers oven—Middleby-Marshall Oven Co.
Refrigerators, built-in—United Cork Companies.
Refrigerating plant—Robert Gordon, Inc.
Refrigerating equipment—Carrier Engineering Corp.
Surveyor—Samuel Olson Mfg. Co. Inc.
Dishwashers—Crescent dishwasher.
Electric toasters—Waters-Genter Co.
Platform scale—Fairbanks, Morse & Co.
Steel shelving—Berger Mfg. Co.

NOVEMBER • 1935
AN AMERICAN COUNTERPART

to Europe's mortgage banks is the minus quantity in
U. S. low cost housing finance.

by ERNST KAHN*

All experts agree that a shortage of houses is imminent; they differ only in estimating its size. The famine of shelter will not only be a curse for millions of newly married couples and hundreds of thousands now doubling up with others, but simultaneously it will subject the much larger number of present lessees to vertical raising of rents.

The inevitable demand for the fixing of maximum rents by the authorities will not assure the necessary result, because such artificial emergency measures automatically diminish the supply by discouraging capital from going into housing—and thus prolong the shortage.

There are many who short-sightedly contend that the approaching crisis must be met by building out of public means, little realizing the gigantic financial and political consequences of such a procedure.

It is quite possible that the Government may have to grant some kind of help in order to inaugurate low cost housing. Those who look on public subsidy of any kind as an evil may find it sometimes inevitable. The question is, how to keep it within limits and at the same time to examine the possibilities of offering rents, after a period of transition, to all tenants on a reasonable basis. In other words, to find out, how if at all, the costs of housing can be sufficiently reduced.

The first fact beneath the surface is that the major part of the rent receipts is usually required for the payment of interest on the invested capital. Any attempt to lower rents consequently should start with a lowering of high money rates.

In applying this maxim to American housing, one quickly discovers an altogether abnormal situation. Mortgages in this country are available only under conditions contrasting most unfavorably with other countries. The average rate of interest charged in the U. S. is at least twice as high as in most European countries.

This astonishing situation is even more puzzling if one compares money rates in other fields of business on both sides of the Atlantic. The discount rate, the yield of Government securities, and the yield of good industrial bonds are much lower in the U. S. than in Europe. In fact, the only major exception seems to be the mortgage market. There must be good reasons for such a surprising and serious anomaly. Does capital consider this type of investment proportionately more risky? Is organization of the mortgage market deficient? Or is there a tendency of greater risk and inefficiency?

A partial explanation may be found in a comparison of the different units which supply mortgage money in and abroad, as seen in the following table:

**Principal Sources for Urban Mortgages**

<table>
<thead>
<tr>
<th>UNITED STATES</th>
<th>ENGLAND</th>
<th>CONTINENTAL EURO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building &amp; Loan Associations</td>
<td>Building Societies</td>
<td>Mortgage Banks</td>
</tr>
<tr>
<td>Life Insurance Companies</td>
<td>Life Insurance Companies</td>
<td>Life Insurance Companies</td>
</tr>
<tr>
<td>Savings Banks</td>
<td>Savings Banks</td>
<td>Savings Banks</td>
</tr>
<tr>
<td>Commercial Banks</td>
<td>Private capital &amp; Trusts</td>
<td>Private capital</td>
</tr>
<tr>
<td>Private capital &amp; Trusts</td>
<td>Trusts</td>
<td>Social Insurance</td>
</tr>
</tbody>
</table>

There are three sources common to all the territories: life insurance companies, savings banks and individual lenders. Yet the table shows characteristic distinctions as to the other sources. For instance, two sources, urban long-term credit in continental Europe not known here are social insurance funds and mortgage banks.

*Social insurance funds have proved ideal for housing in Europe*

Because the United States has just adopted Social Insurance, it should be worth while to recall the splendid rôle which this institution has played in low cost housing. It is safe to say, at least in Germany, that the beginning of rehousing was largely made possible by money from this source. When, nearly fifty years ago, German philanthropists showed their willingness to put up the equity to launch limited dividend corporations for low cost housing, mortgage rates were too high to produce low rental housing. The promoters consequently approached the then newly established social insurance agencies asking for money below the prevailing rate, pointing out that better shelter for the insured workingman would lower the rate of death, disability and sickness and would thus keep down the outlay for these cases. The advanced conception of these agencies induced them to grant mortgages for model housing at an extraordinarily low rate (3½ per cent). Since that time the administrators of the social insurance institutions have considered it a noble tradition and a sound policy to allocate as much of their funds as possible to low cost housing. The latest statistics show that 37 per cent of their assets are invested in mortgages. This percentage presumably would be still higher if the agencies were
wholly free to invest the funds as they saw fit, but the Government forces them to invest a considerable part of the funds in Government securities.

In order to protect their interests, the social insurance groups early established an efficient accounting system, and in the course of events became the actual supervisors of low cost housing. The high character of their supervision is now accepted as the best safeguard against any shortcomings both by the Government and other mortgagees. It is to be hoped that the forthcoming regulations for the newly established Social Insurance in the U. S. will follow the European practice and take an active part in financing low cost housing.

Public confidence is at the base of the European Mortgage Bank System.

Important as Social Insurance funds are for housing, this source is overshadowed by the activity of the continental mortgage banks. Before explaining their operations, it should be made clear that the European mortgage banks have nothing whatsoever in common with the notorious American mortgage institutions which were largely responsible for the complete disorganization of the American real estate market, and which caused popular distrust in the mortgage as an investment. In striking contrast to this attitude, the man on the street in continental Europe considers a mortgage bond the safest and most desirable investment he can make. Consequently the mortgage banks can sell their bonds at low yields and thus grant surprisingly cheap mortgages. In some countries these mortgage bonds are considered a decidedly more attractive investment than Government bonds. The old-established European mortgage banks, some of them a hundred years old or more, have never defaulted on an issue.

In explaining the extraordinary popularity of the European mortgage debenture to an American public, it must be pointed out that in practically all essentials the European bond differs markedly from the type of bonds usually issued in the U. S.

The American mortgage debenture is, or was as a rule, secured by one specific loan, granted on more or less conservative appraisement, on a single property; the European mortgage bond is based on the entire portfolio of mortgage loans made by the issuing bank. This consequently involves a beneficial spread of the risk. Whereas in case of default of the underlying property the American debenture becomes automatically obsolete, the arrearage on a mortgage held by a European bank is born by the totality of the bondholders.

Losses to bondholders, even when individual mortgage defaults were at their highest, rarely occurred because of the sound ratios, fixed by law, between capital and surplus and the amount of bonds issued. No such regulation was considered necessary when American mortgage companies were doing such an enormous business during boom times.

Furthermore, the salability of European bonds is practically unrestricted. They are, as a rule, subject only to very slight fluctuation as the market is always protected. No mortgage bank would dare to offer its bonds unless they had been officially listed on the stock exchange. Nor would the stock exchange list the security unless it had been thoroughly investigated. There are, as you say over here, no "cats and dogs" among European mortgage bonds.

Further protection is afforded the bondholder in Germany through the mortgage bank legislation passed after the crisis of 1900. Permission to start a mortgage bank in the first place became subject to a special charter which in practice was most difficult to obtain. The law created special inspectors for each bank, chosen from ranking public officials and business men of integrity. Bonds could be issued only against an equal amount of first mortgages acknowledged as such deposited with trustees. Mortgages granted on property without permanent residential usage were not eligible as security (this applied especially to industrial plants). The act, similar in many respects to the recent American Securities Act, contains stringent regulations as to accounting and publicity.

The popularity of Mortgage Bonds with European investors could not have been achieved without exemplary publicity. In fact, like SEC offerings, their reports, in accordance with the law, give almost all the information necessary to form an opinion as to the merits and the demerits of the management. The mortgages granted are split up as to size, geographical distribution, etc. The number and character of houses foreclosed during the year and the sales value compared with the mortgage granted on the property have to be stated. And the exact percentage of arrears on interest has to be given.

The very fact of having to make such painfully detailed reports induces the management to be extremely conservative and to avoid unnecessary risks. These reports are published and analyzed in detail by the financial press, sometimes supplemented by additional information. The newspapers' keen interest in the mortgage banks, their watchful eye on any irregularity, have had its full share in establishing the high standard.

Government policy and public opinion tried from the beginning to influence the mortgage banks to grant amortized instead of term mortgages. Before the War the adoption of this system was vigorously opposed by real estate interests in larger cities, whereas it was favored in smaller towns. The explanation is found in the character of pre-War European conditions. Investment in housing, just as in America, was considered as an attractive field for the speculator. He seldom bought or built as a permanent investment but with the intention of selling as quickly as possible at a profit. This type of operator transacts his business with as small a capital as possible and has little use for the idea of gradual debt redemption. Hence the success of the agitation for amortized mortgages in districts remote from real estate speculation.

The situation was thoroughly changed after the War when the systematic encouragement of low cost housing brought new elements into metropolitan life. They gladly accepted the amortized mortgage as a sound basis for their financing. Consequently the amortized mortgage is today the rule rather than the exception.

Stability of price through market support supplies the buying stimulus.

American students of European mortgage banks often wonder why the bonds of these institutions show little
fluctuation. The explanation lies simply in the realization by the mortgage bankers that price stability is the very foundation of the marketability of the bonds. Stability through market regulation not only creates confidence in the investor but it is also an indispensable condition for new business. Any mortgage granted naturally has to be based on the price at which the bond can be sold. In the absence of stable quotations wild fluctuations would take place; and a sound calculation (consequently fair offer­ings to the market) and competition with other agencies in the field would soon become impossible. Hence the attentive observation and regulation of the market by the mortgage banks. Their representatives on the stock exchanges buy, at least in normal times, any amount of bonds that may be offered without allowing the quotation to sag too quickly. That, of course, does not mean that prices are kept at a high level for any length of time if the general trend warrants a drop. No investor can expect to sell his bonds at top prices when higher money rates lead to a sinking of the whole list.

Considering the present well deserved unpopularity of mortgage debentures in America the reader may be aston­ished that in poverty-stricken Germany mortgage bonds totaling four billion marks were sold on the home market in the decade following the inflation. And it is the man in the street who is the primary buyer of mortgage bonds.

Besides him, both savings banks and insurance com­panies consider mortgage bonds as prime investments and prefer them to complete purchase of mortgages. The reason is obvious—whereas in times of emergency the mortgage is only negotiable at a heavy loss, if at all, the bonds are seldom sold at a loss. Furthermore, the sale of bonds can be transacted secretly, whereas an offering of mort­gages may involve a dangerous loss of prestige.

Furthermore, savings banks and insurance companies, far from looking at mortgage banks as disagreeable com­petitors, consider their bonds as a welcome additional investment. Many of them are aware that they enjoy neither the experience nor the organization to safeguard really first class mortgages, whereas the mortgage banks are supposed to base their activity on a highly specialized knowledge of market conditions.

The sale of new bonds is usually performed through the medium of commercial banks and brokers, who receive a commission, which sometimes is rather high. This is especially true with new issues. In order to avoid purely speculative buying, the commission has to be reimbursed in case the bonds are resold before a certain time. In other words: the sale of new issues is generally blocked for about a year in order to limit the offerings and to warrant the right type of conservative purchaser. Formerly the banks often paid the mortgagor not in cash but in bonds, thus leaving the problem of selling the bonds to the house owners. This procedure has been given up almost entirely as it worked against both the mortgagee and the mortgagor.

Two per cent profit on each issue is the mortgage bank's share

The success of the European mortgage banks is de­pendent on the offering of cheap mortgages to the house owner. This consequently limits the profit. As a rule the mortgage bank has to be satisfied with a margin of per cent between the interest charged and interest received, plus a margin of about 2 per cent between the price received for the bond and the money paid the mort­gagor. To give an example: If the bank can sell an $100,000 of 4% per cent mortgage bonds at 98, i.e., 98½, the bank will charge the borrower for a mortgage the full $100,000 at 4½% per cent interest, and pay him only $90,000. Whereas the spread of .5 per cent is supposed to cover the overhead expenses, the margin of per cent is pure profit.

Though the profit on the specific transactions has to be kept within narrow limits and though any speculative profit is out of the question, the capital invested in mort­gage bank shares as a rule yields a rather satisfac­tive and stable return.

It was and is customary of European mortgage ban­ks not to put a considerable percentage of their profit in reserve and increase their dividends only slowly. Some of these corporations show an accumulated surplus bigger than their capital stock. Besides being strong protector against eventualities, this conservative policy enables them to issue more bonds, because the limit of circu­lation is determined by the capital stock plus the undivided surplus.

This practice of constantly increasing the surplus rather than raising the dividends too quickly popularized the mortgage bank stocks. As a result the banks have never had difficulty in issuing new stocks whenever cireum­stances required it. It is common practice to sell the new shares at a considerable premium, thus adding any to their reserves, or to grant valuable “rights” to stock holders. As a rule, the banks steered a middle course in combining both possibilities.

Limited competition is preferable to a monopoly or open competition

If these principles of European mortgage banks are accepted as a pattern for similar institutions over here it becomes a question whether this type of business should be open to anybody who otherwise is willing and able to fulfill certain minimum requirements fixed by the authorities, or whether it should be subject to a charter granted only to a strictly limited number of privileged ones.

Europe offers different answers to this question. France, for instance, has reserved the right of issuing mortgage bank bonds to a single institution, the famous old Crédit Foncier de France, whereas Germany had granted this privilege long before the War to some forty banks. The different attitude may be partly explained by the different character of these countries. France is highly centralized, whereas Germany originally was a federa­tion of rather independent states, similar to this country. This historical explanation may offer a suggestion to the United States should such corporations be launched here.

Looking at the problem from an economic and practical point of view the best solution seems to lie in limiting competition. A certain restriction in the number of banks is automatically provided by the obviously large initial capital requirements, for profitable operation is dependent on large scale operations and geographically diversified
sk's. It is worth while noting that in later years the two-score private German mortgage banks have been merged into a smaller number of units of considerable size and strength. In a country like the U. S., which covers continent, a monopoly granted to one single institution could not be advisable, quite apart from the fact that it would be altogether against the American tradition.

Up to this point, our description of European mortgage banks has been based exclusively on corporations run by private initiative and working with private capital. This type is the most common in Europe. There are, however, instances where the equity has been supplied by central governments, states or other public bodies. After the War when State Socialism was widespread and then some of the private mortgage banks were either not in the position, or not willing, to be of sufficient help fighting the housing emergency, public interference as frequently deemed necessary. Though the initial activities of these public banks were received with some skepticism they proved quite satisfactory, particularly for small, private homes. Obviously, as a matter of principle they never loaned on speculative property. In states and provinces where the old established banks had always considered it their duty to encourage the small house owner, even if this line of business was less remunerative and involved more detail work than the granting of a comparatively small number of big mortgages, the establishment of public or semi-public institutions was unnecessary.

**Continental mortgage rates are better than Great Britain's**

Summarizing, one may safely state that the European mortgage banks have a splendid record. Inaugurated in times of scarce money and insufficient organization of long term credit, they soon brought about revolutionary changes. The most convincing evidence of their achievement is shown by a comparison of continental with English conditions. Though England enjoys considerably cheaper money rates, not only for short term and commercial credit but also for long term governmental and industrial loans, it is decidedly far behind continental Europe in mortgage lending. The role played by the mortgage banks on the continent, in the United Kingdom is primarily in the hands of the Building Societies. Although their reputation is excellent, and their business tremendous, they charge and have to charge comparatively high rates, because they base their mortgages on short term deposits and consequently have to maintain comparatively high liquidity.

I do not contend that the continental mortgage banks meet fully the demand for urban mortgages. This has never been the case in any country. They are just one of a number of agencies serving the mortgage market.

But because they devote all their energy to mortgage ending, their influence on long term credit is significant. And as they are obviously in a position to offer relatively favorable conditions, they induce other mortgage lenders to reduce their rates. So great has been their influence that when the mortgage banks are for one reason or another, not in the market at all, mortgage money is available on relatively easy terms.

In studying American housing, the foreign visitor is bound to be thrilled in reading for the first time the National Housing Act. Apart from all the other achievements of this law, it seems to me that the Act contains a foundation for the most efficient mortgage bank system in the world. I believe that the Housing Act if only put into practice and cautiously carried out may within due time furnish the United States, up to now suffering from the poorest mortgage system I have ever seen, with the finest apparatus for long term credit imaginable. I am reminded that the automobile, originally invented in Europe, found its perfection in this country.

**The deplorable apathy in the U. S. toward National Mortgage Associations**

Knowing the American aptitude for pushing an idea to its successful conclusion, I have been amazed that nothing has been done up to now to create National Mortgage Associations under Title III of the Act.

It is a great disappointment to find Wall Street and other financial centers indifferent to the opportunity presented. Whether this inactivity is the consequence of past heavy losses or bad conscience it is difficult to say. The unwillingness to organize mortgage associations seems to me not only bad business but un-American. On the other hand, it would be wise if Washington, no matter how strict its regulation may be, were to give a fair chance to business. The Administration must realize that the organization of mortgage banks should not be barred by denying a chance for a legitimate profit. Again, business has to realize that strict supervision and most stringent regulations are indispensable in this field if heavy losses, not only for the public but also for the promoters, are to be avoided. National Mortgage Associations are bound to fail unless conservatively managed.

Under the Housing Act, America should be in a position to organize an instrument for long term credit second to none in the world. Apart from the Act's happy conception, this optimism is based on the tremendous wealth of the country. Every day the banks and the public are faced with the problem of how to invest their ready cash and their savings conservatively without freezing them. The European mortgage bonds, already described at length, proved fully satisfactory both for the little fellow and the big institution. It is true, of course, that the discouraging mortgage losses the public has suffered in the past few years will not be forgotten until the fundamental difference between those problematical securities and the first class bonds we have in mind is realized.

Consequently it may take some years before these bonds can be offered cheap enough to bring rents for the masses down to a sufficiently low level. But the impending shortage of shelter will not permit further postponement of a gigantic building activity. A further delay may cause serious economic, social and sanitary consequences. It was because of this emergency that we suggested for a limited time a yearly subsidy to enable low cost housing (Arch. Forum, August, 1935, p. 89).

In order to keep governmental assistance within as narrow limits as possible it is indispensable to organize these new agencies as quickly and as efficiently as possible.

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MUNICIPAL INCINERATOR

SHREVEPORT, LOUISIANA

JONES, ROESSLE, OLSCHNER AND WIENER, ARCHITECTS
The Shreveport Municipal Incinerator is the first major S. building of its kind where complete design and pervision service has been rendered by a firm of architects.

Because of their highly specialized nature, incinerator buildings are usually designed and built by the companies stalling the equipment. A field requiring much detailed clinical knowledge, it has rarely interested architects, no have realized that in competitive bidding against companies specializing in this type of work the odds were too high to be attractive.

The Shreveport incinerator is a strikingly clean piece design. Its unfamiliar appearance arises from the fact at the plan is a radical departure from customary prac- ce, and a plan without precedent has quite logically resulted in a building as new as it is sound. Both the plan nd fine architectural quality of the exterior are cogent reasons why competent architects need not bar themselves from industrial work where their collaboration is not hitherto been considered essential.

In theory the functioning of an incinerator is simple. arbage is brought to the building by trucks; if the building has a hillside site the trucks enter at the top level, umping the refuse into charging hoppers located directly ver the furnaces. In large incinerators the question of ite is less important; accordingly, the Shreveport build- ing receives its waste on the ground floor where it is ored in large concrete bins. From the bins, cranes or onveyors transport the garbage to the hoppers, through hich it is released into the furnaces. Here, on a series f grates, it burns, the gases passing into a combustion ember. The temperature in this chamber is maintained t about 1800° F. to ensure the complete burning of he gases. otherwise the unburned gases pass out of the mney and become a nuisance. Between the combustion ember and the chimney there is usually a preheater, unit consisting of a series of pipes. The outgoing gases ass through the pipes, which heat the incoming air to oubt 1450°, thereby greatly facilitating the burning of wet refuse. No fuel is used in the furnaces, the garbage self acting as fuel. From the furnaces the ashes drop p to the first floor level, falling through hoppers directly o trucks, or into ash disposal pits.

The typical plan of an incinerator the size of the Shreve- port plant, with its capacity of 150 tons per 24 hours, nists of a receiving bin and furnaces, with the stoking oom in between. The Shreveport incinerator contains wo bins at opposite ends of the building. The advantages f this arrangement are that one can be cleaned without hutting down the plant and that wet and dry refuse can be separated. This plan permits placing the stoking room n an outside wall, giving it light and direct ventilation. The direct gravity passage of ashes from furnaces to rucks (see section) reduces not only initial cost but also operating expenses. The use of the ash removal floor as a garage provides added convenience at slight additional cost. Economy is achieved by the use of the concrete frame.

The building was constructed with PWA funds at a total cost, including paving, garage, and architects' fee, of $180,000.
DETAIL OF METAL EDGING FOR ALL CANTILEVER SLABS AROUND HOISTING AND AT SCALE ROOM AND TOILETS.

DETAIL OF METAL COPING FOR ALL WALLS AT ROOF.

SECTION THROUGH HEAD.

SECTION THROUGH SILL.

PLAN AT JAMB.

DETAILS OF ALL STEEL SASH THROUGHOUT EXCEPT CLERE-STORY.

RECEIVING BIN

ASH REMOVAL AREA

ASH HOPPER GATES

INSECT PROOF BARS

CONC-SUMP

TRUCK STORAGE SPACE

DRAIN

SKYLIGHTS OVER
The first, or ash handling floor (see plan on opposite page) has concrete bins at either end for receiving the garbage. From the bins it is taken by cranes and grab buckets to the top floor (charging floor) where it is dumped into two sets of charging hoppers. A set of signal lights informs the operator what type of refuse is needed, and in what quantities, and he can control the charging by means of pneumatically operated hopper gates which are so designed as to keep fumes and smoke from coming up from the furnaces into the charging room. The superintendent’s office is located on this floor as well as toilets and showers for the workmen, an arrangement which is not necessary, but desirable. In this particular plan the disposition of these services works out very well.

The second, or stoking floor contains the burning equipment of the plant. The theory of garbage incineration is that if a sufficiently intense fire is maintained in the furnace and charging is done in sufficiently small quantities, there is no need for additional fuel of any kind. In a well-designed and operated incinerator this works out in practice as well. To facilitate combustion, preheater units are almost invariably added. These units consist of a large number of pipes through which heated gases from the combustion chamber are passed; incoming air circulates around these pipes and its temperature is raised thereby to about 1450° F., after which it is blown into the furnaces. The combustion chamber is necessary to ensure the complete burning of the gases before they pass out of the chimney; otherwise there is a possibility of odors around the plant. The expansion chamber provides space for expansion of the gases before they pass into the chimney, and the long flue which extends to the chimney also acts in this capacity. In case the gases are not sufficiently cooled by the time they reach the chimney, additional protection is furnished by a core of steel around the firebrick lining. An unusual amount of light and air is provided by the large windows, and the stoking aisle is ample.
The longitudinal section illustrates clearly the passage of the refuse from truck to bin, up to the charging hoppers, down through the furnaces into ash hoppers, and from these into trucks. This direct disposal method for ashes saves time, space, and expense, reducing the handling to a minimum. The ash handling floor in this building has been extended so that the space may be used at night for storage of the trucks.

Transverse section through furnace and preheater unit, showing the relation between furnace, combustion chamber, preheater, expansion chamber, and chimney. The slope of the site is not utilized here to shorten the passage of materials from one part of the plant to another, as is frequently done in incinerators of smaller capacity. Furnaces and other parts of the burning system are supported on heavy reenforced concrete beams and columns, which occupy a large portion of the first floor space.

CONSTRUCTION OUTLINE


WALLS—Reenforced concrete. Brick, Reliance Clay Products Co., Dallas, Texas.

WAINSCOTS—Glazed terra cotta, Ayer-McCarrel Reagan Co., Brazil, Ind.

FLOORS—Cement with metallic hardener.

CEILINGS—Reenforced concrete.

WINDOWS—Steel sash.

UPPER WINDOWS—Continuous type, chain-operated.

GLASS—Libbey-Owens-Ford Co.

GARAGE DOORS—Rolling steel, Kinnear Mfg. Co.

ALL OTHER DOORS—Metal-covered, hospital type metal-covered frames. J. L. O'Hearn Co., Dallas, Texas.

ROOF—Composition type laid on insulation board, Johns-Manville Corp.

COPING—No parapet.

Stainless steel coping around all walls approximately 4" above roof level. Republic Steel Corp., Youngstown, Ohio.

DECK PLATES—Mosher Steel Co., Dallas, Texas.

PAINTING—All interior concrete and brick painted white. American Paint Co., Dallas, Texas.

phur Springs, Texas. Around lining is a set of vertical and horizontal bands of fireclay, serving to hold it in place when expanded by hot smoke and gases.

ANE AND BUCKET—Capacity 1 1/2 cubic ft, Harnischfeger Corp., Milwaukee, Wis. MACHINES—"Mutual Assistance" H. E. Marks patent. Walls, 13 1/4" 3000 degree F. brick, 4 1/4" insulating brick set in form of structural steel columns, stays, and ties. Ceilings of suspended firelay flat brick, 12" thick, with 3" insulation on top. Lower part of furnace below each cell designed as a hopper for storage and quenching of ashes.

PREHEATERS—Walls and ceiling similar to furnaces, containing removable tubes of cast iron with chromium and nickel content. Green Fuel Economizer Co., Beacon, N. Y.

FURNACE AND PREHEATER INSULATION—Johns-Manville Corp.


ELECTRIC LIGHT SYSTEM—For use of stokers and crane operators to control quantity and type of refuse for furnaces.

AIR COMPRESSORS—Compressors and storage tanks to furnish air for the controls which operate charging hoppers and ash hoppers. Curtis Mfg. Co., Saint Louis, Mo.

BLOWER SYSTEM—American Blower Corp., Detroit, Mich.

TRUCK SCALE—Howe Scale Co., Rutland, Va.
The above section, taken on the center line of the building, shows in detail the provisions made for disposal of burned gases after they have left the combustion chambers and preheaters. The dotted lines at the base of the chimney indicate the location of the steel reinforcing which is wrapped around the flue lining. The photographs illustrate typical details of the furnace doors, flue, and dust baffles. There are several of the latter, designed to trap dust from the burned garbage which is swept out by the hot gases.
Because it provides a case study in the development of American residential style since 1870, "Fair Oaks" is an almost unique remodeling exhibit. Since it was built it has undergone an extraordinary series of face-liftings, most of which are illustrated. The date of the original house is not known, but the records have it that it was purchased in 1871 by General Charles Howard, a veteran of the Civil War. The house, typical of the style of the period, was a richly ornamented and romantically conceived composition, with high rooms, elaborate chandeliers holding oil lamps, ponderous cornices and great marble fireplaces.

The first alteration was made in 1880; the five bedrooms of the original house were inadequate for the generous living of the times, and an addition, known in the family as "The Tower," was built to increase the accommodations by three bedrooms and one bath. The year 1895 saw the porch replaced by a wide veranda, and the building of separate quarters for two horses and a cow. In 1908 "Fair Oaks" caught fire, losing its roof and most of the second floor, and the rebuilding which followed produced a house far more comfortable to live in, but minus its original Victorian character and with no new one to take its place. The gables were suppressed and hipped roofs substituted, the tower rebuilt with a flat roof, gingerbread removed, modern fireplaces installed, and other elements of the interiors were altered.

In its present state, illustrated in the pages which follow, the house shows a complete transformation both inside and out. Its Colonial treatment reflects the taste of today precisely as its predecessors of the 1890's and the early 1900's met the requirements of their time. Only the years to come can tell whether this present form will fare any better than the earlier ones. "Fair Oaks" today shows no trace of the vicissitudes of its seventy-odd years, and only one feature, the curious bay on the garden side of the house, remains as an indication of its Victorian origin.
FOUNDATION
Walls—rubble stone and concrete.
Cellar floor—cement.
Waterproofing—ironite, Western Waterproofing Co.

FRAME CONSTRUCTION
Longleaf yellow pine.

EXTERIOR SURFACE
Clapboards—redwood.

ROOF
Wood shingles on shingle lath—"Weather­	
best."
Valleys
Gutters
Flashing—copper.
Down spouts
Composition sheathing paper—Sisaikraft	
building paper.

DOOR AND WINDOW FRAMES
Sash and frames
Double hung
Casement
Steel sash—Lemco steel sash.
Doors and frames (exterior)—white pine.
Garage doors—Overhead Door Co.

PORCHES
Brick floor—brick pavers.

GLASS
Double strength, quality A, Libbey­	
Owens-Ford Glass Co.

EXTERIOR PAINT
Shingles—dipped.
Siding
Priming—Cabot's white.
Finish coat—Pratt & Lambert Under­
coater.
Finish coat—Pratt & Lambert Vitro­
lite.

LATH AND PLASTERING
Lathing—wire throughout.
Plastering
Finishing coat—lime putty and plaster of Paris.

INTERIOR WOODWORK
Floors—narrow width select oak.
Trim—birch.

INSULATING
Outside walls—Celotex.
Roof rafters—Thermofll, U. S. Gypsum Co.
Weatherstripping—Chamberlin Metal	
Weather Strip Co., Inc.

INTERIOR FINISHES
Floors—waxed.
Trim—back primed and 4 coats enamel.
Doors—finish.
Sash—3 coats enamel finish.
Walls—servants' quarters painted, stip­
pled and starched, balance partially canvas-covered, painted, glazed and starched, partially wallpaper.

WIRING
Electrical fixtures—special by Walter G.
Warren Co., Chicago.

LIGHTING
Direct.

PLUMBING
Kitchen
Sink—Kohler.
Cabinet—wood.
Stove—Cribben & Sexton, Chicago.
Refrigerator—General Electric.

BATHROOM
Fixtures—Kohler Co.
Wainscots and floor—tile.

PIPES
Wrought iron.

HEATING
2 pipe return feed Dunham vacuum system.
Boilers—Weil McLain Co., Chicago.
Radiators—copper, cast iron in service portion.
Hot water heater—Bell & Gosset Co.,
indirect heater.
Thermostat and regulators—Minneapolis­
Honeywell.

CHIMNEY
Fireplaces
Facings—marble.
Hearth—wood.
Mantels—wood.
Damper—Colonial Fireplace Co.

HARDWARE
Interior and exterior—P. & F. Corbin.

SCREENS
Chamberlin roll screens.

SPECIAL EQUIPMENT
Garbage burner—Cribben & Sexton.
NUMBER

BEAUREGARD HOUSE
1113 CHARTRES ST. NEW ORLEANS, LA.
J. H. CORREJOLLES, ARCHITECT
JAMES LAMBERT, BUILDER

OWNER Beauregard House, Incorporated, 1113 Chartres Street, New Orleans, Louisiana
DATE OF ERECTION Latter part of 1826.
PRESENT CONDITION
The building is in fair condition; the brickwork shows almost no cracks or distortions and though the woodwork is in good shape, the whole is in need of intelligent and careful attention. The original building shows practically no departure from the original plan. Later additions are the kitchen in the west corner and the one-story buildings at either side of the courtyard. The dining room was formerly the gallery, the present rear porch being an addition.
NUMBER OF STORIES Raised basement single story residence.
MATERIALS OF CONSTRUCTION
Walls of the building are soft burned brick, stuccoed. Framing timbers, joists and rafters of cypress. Interior walls and ceilings are plastered. The principal rooms have marble mantels, plaster cornices and center ceiling ornaments. Floors of all porches are yellow pine.

OTHER EXISTING RECORDS
Building Contract between Joseph Le Carpentier, owner, and James Lambert, Contractor, dated August 11, 1826, is among the notarial records of Felix de Armas at the New Orleans Court House. Page 497
Original Building Plans:
Photostats of building plans attached to above mentioned building contract, to wit:
1. Floor plans by Jh. Correjolles, Architect
2. Front elevation by Jh. Correjolles, Architect
New Orleans City Directory, 1829
Chain of Titles on file at New Orleans Court House.
See Page 498.
THE BEAUREGARD HOUSE, NEW ORLEANS, LOUISIANA

GENERAL DESCRIPTION

"Be it known that on the 11th day of August in the Year of Our Lord one thousand eight hundred and twenty-six."

Thus in properly reverent phrase and with most of the ensuing specifications in French measure begins the contract for building the Beauregard House of New Orleans (the contract in full appears on page 497). The Republic was half a century old, English was its legal language but the liquids and diphthongs of France were what you heard most in New Orleans. One War was over and the next, which was to give fame to the House's most distinguished tenant, was not yet conspicuously threatening. There was steamboat traffic on the Mississippi. New Orleans, with French shrewdness and practicality, was building. In the little notary office of Félix de Armas, Joseph Le Carpentier, auctioneer, and James Lambert, carpenter-contractor, bowed and smiled civilly. They had with them the architectural plans of Jh. Correjolles and they knew exactly what kind of house they were planning to build, how much it would cost and at what intervals the money should be paid. Lambert also knew how long it would take to build. Before the New Year Joseph Le Carpentier was able to move into his new home, situated on a lot he had purchased three days after the previous New Year from the Ursuline sisters. And Architect Correjolles had done his work well. The original building shows almost no departures from the original plans.

There is unfortunately no way of foretelling which of any one year's crop of moderately priced private residences will become famous. Thus the early records of many a house famed today are lost or obscured. This is so of the Beauregard House. Fame came to it fortuitously because General P. G. T. Beauregard took residence there in 1866. He never owned the house and lived in it only two years. This was sufficient, however, to persuade the General Beauregard Memorial Association to purchase the house in 1930 and save it from a then imminent commercial fate. Today it is a memorial to Pierre Gustave Toutant Beauregard, wounded at Chapultepec, bombarder of Fort Sumter, commander of the Southern Army of the Potomac, adjutant-general of Louisiana and manager of the Louisiana lottery.

Le Carpentier, original builder of the house, lived in it only until 1834. From that year until 1838 it was occupied by Alonzo and Ernest Morphy, Alonzo being the father of Paul Morphy, a famed chess player, who is supposed to have been born in the house in 1837. What happened to the house until the time General Beauregard moved in, nobody knows in clear detail. Nobody knew the house would some day be a memorial and nobody took the care to keep its history.

One incident, however, is on the record. In 1898, an Italian family of wine merchants, the Giaconas, bought the house and owned it until 1925. It was during their occupancy that the New Year Joseph Le Carpentier was able to move into his new home, situated on a lot he had purchased three days after the previous New Year from the Ursuline sisters. And Architect Correjolles had done his work well. The original building shows almost no departures from the original plans.

The windows at the side of the house are large double hung ones, divided by narrow muntins into small lights. They have splayed paneled jambs extending to the floor with a wood panel filling the space below the windows. All the rooms have plaster cornices and several have center ceiling ornaments. In each of the principal rooms there are ordinary marble mantels placed on a narrow chimney breast against the wall.

The plan of the house is very simple and has an air of spaciousness. The principal entrance is from the front gallery into a large hall which runs the full length of the house, opening at the rear into the dining room. The principal rooms are arranged on both sides of the hall. In the rear of the house is a large paved courtyard, with slave quarters.

The central doorway is a finely detailed double wood paneled door with sidelights and a rectangular transom. Engaged Ionic colonnettes separate the doorway and the sidelights. A similar one, having simple pilasters instead of the colonnettes, is found at the opposite end of the hall, between it and the dining room. Practically all the interior doors are similar to the ones which open from the two front rooms onto the gallery, but are wood paneled instead of having the upper part glazed, and the transoms and interior trim are identical.

The attic is reached by a small enclosed stairway which comes down into the anteroom at one end of the dining room. This stair once came all the way to the floor but now comes down only about halfway. In the attic are two finished rooms lighted by dormer windows, two on each side and one at the rear center. The roof is hipped with a low pitch, and is covered with slate with terra cotta hip and ridge tiles.

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The windows at the side of the house are large double hung ones, divided by narrow muntins into small lights. They have splayed paneled jambs extending to the floor with a wood panel filling the space below the windows. All the rooms have plaster cornices and several have center ceiling ornaments. In each of the principal rooms there are ordinary marble mantels placed on a narrow chimney breast against the wall.

From the dining room double doors with elliptical transoms and sidelights open on the rear gallery which extends across the entire rear of the house. This dining room was formerly the gallery, the present gallery being an addition. There are six rectangular wood posts on the gallery and a wood stair leads down from it to the paved courtyard. The balustrade of the gallery and stair are of wood. At the west corner of the house is a small wing containing the kitchen, also a later addition.

The attic is reached by a small enclosed stairway which comes down into the anteroom at one end of the dining room. This stair once came all the way to the floor but now comes down only about halfway. In the attic are two finished rooms lighted by dormer windows, two on each side and one at the rear center. The roof is hipped with a low pitch, and is covered with slate with terra cotta hip and ridge tiles.

At the rear of the courtyard is a two-story brick building used as slave quarters. There is a wood balcony with turned wood columns on the second floor, from which access is gained to the rooms. The columns and balustrade were recently restored. This building is now connected with the house by the one-story work shops of recent construction which close both sides of the court.

The principal feature of the exterior design is the front gallery, which consists of a raised, pedimented portico with four columns, reached by two flanking curved granite stairways. The rails of the stairs and gallery are of wrought iron of a Greek pattern, with some cast ornament. At the foot of each stair are iron gates hung from granite gate posts. The original columns of the portico were turned from cypress logs, but they have recently been replaced with crudely cast concrete ones. Two of the old columns, minus caps and bases, were found in the basement and measured.

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The original grounds extended over a space adjacent to the present building, running along Ursulines Street to a depth of 160 ft. This was planted to a well-arranged symmetrical garden, with numerous walks, an arbor, and in the rear was a shed and an open space, probably used for stable and carriage storage.
It is well understood that said party of the ("first part" deleted) second part, for what relates the carpenters and joiners solely, shall furnish the said buildings in the best style and manner possible and in every respect for the workmanship, as the house of Mr. St. Martin in Conde Street, adjoining the lot wherein the buildings herein contemplated are to be erected:

It is further understood that in the event of the said party of the first part having omitted anything for the full completion of the said carpenters and joiners work, that the said party of the second part, upon the other party furnishing all the materials soever as is herein agreed upon, shall thus completely finish the same:

In consideration whereof, the said party of the first part shall pay the other party the sum of four thousand dollars in manner following, to wit: 1. One thousand dollars cash, which the said party of the first part has actually and in presence of the notary and witnesses undersigned, paid to the said party of the second part, who acknowledges the receipt thereof.

The said main building shall be erected fifty-one feet front on Conde Street and sixty-eight feet deep, out to out, French measure; there shall be twenty-five doors and windows on the first story (MARGINAL NOTE: Made with cypress) with good framed and stoned doors and shutters, the windows in the said first story shall have cinnamons — In the second story there shall be twelve windows in the ends and two in the rear, they shall be boxed, stoned, paneled jams and pilastered, the shutters to be framed with moldings — four front and two rear; outside doors to have sashes and fan lights — one front and one rear doors to have circular ends, fan lights, and side-lights; Nine onside double doors with ransom sash; four six -pannel doors trimmed in the cabinets — three back arches trimmed with pilasters and venetian blinds — the joists shall be three by twelve inches and placed two feet from center to center, and be of yellow pine — The floors to be one inch thick of pine. The roof to have a gallow frame, hip rafters, sufficiently strong to support a slate roof — There shall be a cornice to run all around the house — There shall be two stairs to run together in front of the house, with turned columns and pediment — There shall be a wash house, kitchen and privy as per plan — There shall be one fine railing in the front of Conde Street, and opposite the main house, and one fence on each side and immediately after the said railing to fence the whole front of the said lot on Conde Street — There shall also be one fence eighty-five feet long, similar to the one now existing on the said lot of ground, towards Ursulines Street, to fence the said lot in its depth — and there shall further be two railings (MARGINAL NOTE: to separate the lot wherein shall stand the said buildings from the empty portions of the said lot on each side of said building — There shall further be one gate fronts at Ursulines Street.

J. LeC.) It is well understood that said party of the ("first part" deleted) second part, for what relates the carpenters and joiners solely, shall furnish the said buildings in the best style and manner possible and in every respect for the workmanship, as the house of Mr. St. Martin in Conde Street, adjoining the lot wherein the buildings herein contemplated are to be erected:

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In case of any dispute arising between the parties in the foregoing articles, the same shall be forthwith left to the determination of two disinterested parties, one to be chosen by each of the parties, and in case of disagreement on their part they shall have the right to appoint a third person, and whatever award or umpirage they shall give shall be binding on the said parties to these presents:

Thus the whole has been agreed between the said parties: Done and passed, at New Orleans aforesaid, in my office in the presence of Mears, Michel J. B. L. Fourcissi and Albert de Armas, both witnesses hereeto required and residing in this city and the said parties have hereunto set their hands, together with the said notary and witnesses, on the day and year first before written.

Three references in the margin approved; (two words erased to be null.)
CHAIN OF TITLES

Act before A. B. Korie, N.P., June 16, 1930, Owen, to Beausayd House, Inc., 2nd District, Surveyor, Plan C. A. De Armas, October 14, 1865, granted to Act Henry B. Bouny, N.P., October 28, 1865. 60.5' x 105' measured at 1865, and 63.5' x 105.5' measured at 1865, Charters and Ursulines and measures 73.2.5 on Chartres. 160'.1".2" and 74'9"3' rear 1113 Charters.

Act before Judith Hyams Douglas, N.P., July 8, 1907, Anthony Manino et al to Allison Owen.

Act before Michel Provost, N.P., September 2, 1907, Mrs. C. Giacoma et al to Anthony Manino.


Succession Mrs. Louise Marie Lanata, wife of Jean Larose. Minard C. D. C. No. 50028, July 1st, 1870.


Succession Mrs. Louise Marie Lanata, wife of Jean Larose. Minard C. D. C. No. 50028, July 1st, 1870.

Succession Mrs. L. A. Garidel, Marie Josee Andry. Mrs. L. A. Garidel acquired by inheriting her mother Josephine Laveau Treadeau, Widow of Manuel Andry (133' 2" x 160' 10" 0' forming corner of Chartres and Ursulines.)


Dominique Lanata acquired from the succession of Mrs. Louise Marie Lanata, wife of Jean Larose. Minard C. D. C. No. 50028, July 1st, 1870.

Eusebe Bouny, N.P., October 28, 1865, Mrs. L. A. Garidel to D. Lanata. Plan Charles de Armas. N.P. October 7, 1865 (Lot 1). Mrs. L. A. Garidel, Marie Josee A. Andry. Mrs. L. A. Garidel acquired by inheriting her mother Josephine Laveau Treadeau, Widow of Manuel Andry (133' 2" 5" x 160' 10" 0" forming corner of Chartres and Ursulines.)


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One time Residence of

GEN. P. G. T. BEAUREGARD

Built in 1826

There is evidence of three stories on the Basin side, a story back, and two stories on other sides. The upper stories were in part used for a residence, and in part for a distillery and general store.

G. N. E. SIDE. ELEVATION

FRONT ELEVATION

CHURCH STREET ELEVATION

LONGITUDINAL SECTION

REAR ELEVATION

Scale 1:100

ISTORIC AMERICAN BUILDINGS SURVEY
WEST ELEVATION

SOUTH ELEVATION

S.W. NORTH ELEVATION

TYPICAL WINDOW SLICE, QUARTER-S SALONY

TYPICAL DOOR SLICE, QUARTER-S BALCONY

SECTION XX

SECTION YY

DETAIL AT B

Isometric of Roof Framing

Typical Splice

Note: All framing timbers are Whitewashed

Detail at A

Detail at D

Detail at C

Detail at E

Isometric of Roof Framing

NOT TO SCALE

Historic American Buildings Survey
FRONT PORCH AND MAIN ENTRANCE DOOR DETAILS
MAIN ENTRANCE (see detail page 501)
BEDROOM DOOR

PARLOR TO BALLROOM DOOR

DETAILS

PARLOR CORNICE—PROFILE
FULL SIZE

LIBRARY CORNICE—PROFILE
FULL SIZE

PLASTER CENTER PIECE ON LIBRARY CEILING
FULL SIZE

TYPICAL IRON LATCHES
INTERIOR DOORS
FULL SIZE
HALL CEILING

FRONT PORCH CEILING DETAIL

INTERIOR DETAILS
WROUGHT IRON DETAILS
FRONT PORCH
SMALL HOUSES

Following the pattern of the October Small House Reference Number, THE ARCHITECTURAL FORUM will continue to publish regularly studies of recently built small U. S. houses. The two pages devoted to each house offer photographs, plans, full construction outlines, and cost. All of the houses presented are within the price range eligible for FHA mortgage insurance.
While fairly typical in its planning, this house offers a much-needed change from the usual Colonial facade. Flush siding, two-story pilasters, and arches give an air of elegance to what might otherwise be a common-place elevation. Flush siding, frequently used in New England around the end of the 1700's, provides an extremely pleasant surface; its practical disadvantages are probably responsible for its infrequent use at the present time. It has, however, great decorative possibilities, and when the detail is as well handled as on the doorway of this house, it is most effective. The planting is good; it is refreshing to find a house of this type without the usual pair of scrubby evergreens flanking the front door. The example set here is one that might be followed with profit.

CONSTRUCTION OUTLINE

<table>
<thead>
<tr>
<th>FOUNDATION</th>
<th>Cost: $18,718. Cubage: 46,795, at 40 cents per cubic foot.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls—concrete block, J. C. Mahlstedt Lumber &amp; Coal Co., New Rochelle, N. Y.</td>
<td></td>
</tr>
<tr>
<td>Columns—lally.</td>
<td></td>
</tr>
<tr>
<td>Cellar floor—concrete.</td>
<td></td>
</tr>
<tr>
<td>Waterproofing—membrane and fibrous cloth, Minwax Co., New York City.</td>
<td></td>
</tr>
<tr>
<td>FRAME CONSTRUCTION</td>
<td></td>
</tr>
<tr>
<td>Fir; spruce bridging.</td>
<td></td>
</tr>
<tr>
<td>EXTERIOR SURFACE</td>
<td></td>
</tr>
<tr>
<td>Common brick veneer—Stile Co., New York City.</td>
<td></td>
</tr>
<tr>
<td>Flush siding.</td>
<td></td>
</tr>
<tr>
<td>ROOF</td>
<td></td>
</tr>
<tr>
<td>Pennsylvania black slate on sheathing.</td>
<td></td>
</tr>
<tr>
<td>Valleys—closed.</td>
<td></td>
</tr>
</tbody>
</table>

| Gutters—built-in and hanging. | |
| Flashing | |
| Down spouts | 16 oz. copper. | |
| Composition sheathing paper—30 lb. felt. | |
| Copper—Anaconda. | |
| DOOR AND WINDOW FRAMES | |
| Sash and frames | Double hung | |
| Casement | wood. | |
| Steel sash—cellar, “Fenestra” by Detroit Steel Products Co. | |
| Garage doors—overhead type by Overhead Door Co., New York City. | |
| PORCHES | |
| Reenforced concrete. | |
| GLASS | Double thick, quality A, “Lustra Glass” | |
| by Pittsburgh Plate Glass Co. | |
| EXTERIOR PAINT | |
| Siding | lead and oil, mixed at job. | |
| Sash | |
| LATH AND PLASTERING | |
| Lathing—metal, 3.4 lb. painted diamond mesh. | |
| Plastering | Patent plaster—King’s Windsor. | |
| Finishing coat—“Ivory” lime and “Diamond” plaster of Paris, U. S. Gypsum Co. | |
| INTERIOR WOODWORK | |
| Trim and floors—clear plain white oak, W. Ritter Co., New York City. | |
| Painted surfaces | white pine. | |
| Shelving and cabinets | |
| INSULATING | |
| Outside walls | rock wool, “Gimco” by General Insulating Co. | |
| Roof rafters | |
| Attic floor | |
PLAN: An interesting plan in several respects. Excellent location of garage; stairs lead to hall, with coat closet and lavatory readily accessible. A small library provides space for work and study; it occupies the space frequently given over to a breakfast room. Note space for bathroom to be installed at some future date; planning ahead in this way saves much time and expense when the installation can finally be made.

WEATHERSTRIPPING—metal, H. Kammerer, Mt. Vernon, N.Y.

INTERIOR FINISHES
Floors—flat finish, Minwax Co.
Doors—enamel, Sherwin-Williams Co.
Sash
Walls—Sherwin-Williams Co.
Wallpaper—Thibaut and Lloyd.

WIRING
Cable—BX.
Electrical fixtures—Lightolier Co.
Switches—toggle.

LIGHTING
Direct.

PLUMBING
Kitchen

BATHROOM
Fixtures—tile.
Cabinets—"Morton" by Fred W. Lee Co., New York City.
Toilets—one-piece.
Seats—white, Church Mfg. Co.
Shower curtains—Para Permonte Moire.
Floor—linoleum, Congoleum-Nairn Inc.

PIpes
Brass.

HEATING
Oil.
Boiler—General Electric Co.

AIR CONDITIONING
Central—General Electric Co.

CHIMNEY
Fireplaces
Facings
Hearth
Mantels—wood by mill.
Damper—Coevert Co.

HARDWARE
Interior and exterior—brass, Charles Arcularius, New York City.

SCREENS
Wood frame, H. Kammerer Co., Mt. Vernon, N.Y.

WINDOW DRESSING
The appearance of this substantial suburban house gains much from the large number of trees on the property. Privacy is obtained by placing the entrance in the corner formed by the jutting out of the dining room at the path which approaches on an angle from the street. The living room, opening to the rear on a covered terrace, is placed with its narrow end towards the front. The use of stone veneer for the first floor gives an appearance of solidity to the house and at the same time introduces a pleasing element of horizontality.

**CONSTRUCTION OUTLINE**

Cost: $16,000. Cubage: 39,184 at 40 cents per cubic.

**FOUNDATION**
- Walls—12" tile, Cleveland Builders Supply Co.
- Piers—brick.
- Cellar floor—concrete, cement finish, Medusa Cement Co.
- Waterproofing—tar and pitch over cement plaster, Tuch Bros.

**FRAME CONSTRUCTION**
- Pine; Douglas fir studding.

**EXTERIOR SURFACE**
- Stone veneer—The Green Road Stone Co., Cleveland.
- Shingles—cedar double-dipt, Cabot Co.
- Roof—Wood shingles on shingle lath—cedar shingles, Cabot Co.
- Valleys—open.
- Gutters—Toncan metal.
- Down spouts—Toncan metal.
- Salt glazed tile drains.
- Composition sheathing paper—15 lb. building paper.
- DOOR AND WINDOW FRAMES
  - Sash and frames—pine, double hung.
  - Doors and frames (exterior)—pine.
  - Garage doors—Sitka spruce, Overhead Door Co., Cleveland.
  - PORCHES
    - 2" flagstone on reinforced concrete slab.
- GLASS
  - Flat drawn sheet, Libbey-Owens-Ford Glass Co.
  - EXTERIOR PAINT
    - Shingles—double dipped.
    - Siding—priming—lead and oil.
    - Trim—finish coat—lead and oil, 3 coats.
- LATH AND PLASTERING
  - Lathing.
  - Composition plaster base—Rocklath, U. S. Gypsum Co.
- INTERIOR WOODWORK
  - Trim—gum.
  - Floors—oak.
  - Shelving and cabinets—gum.
  - Stock millwork—Curtis Millwork Co.
- INSULATING
  - None.
PLAN: The entrance hall gains in apparent size by the use of wide openings to dining and living rooms. Coat closet conveniently located; placing of lavatory is unconventional but good, and its proximity to kitchen plumbing results in a saving. Garage well placed in relation to house, its roof becoming a large deck. For average requirements one private bath in a house of this size might have been advisable.

Weatherstripping—Barland Strip, Cleveland, Ohio.

INTERIOR PAINTING
Floors—1 coat stain filler, 2 coats flat varnish.
Trim—4 coats enamel.
Doors—filler coat shellac, 4 coats enamel.
Walls—papered.

WIRING
Cable—knob and tube.
Electrical fixtures—The Hamilton Studios, Cleveland, Ohio.

LIGHTING
Direct.

PLUMBING
Kitchen
Floor—rubber tile, Goodyear Tire and Rubber Co.

BATHROOM
Seats—Church Mfg. Co.
Wainscot—matt glazed Romany tile, Franklin Tile Co.
Floors—ceramic tile.

PIPES
Wrought iron by Byers Co.

HEATING
Gas.
Boiler—Bryant Boiler Co., Cleveland.
Radiators—Corto, American Radiator Co.
Hot water heater—52 gallon galvanized iron tank, Mustey side arm heater.
Thermostat and regulators—Minneapolis-Honeywell with clock.

CHIMNEY
Fireplaces
Facings—Amherst Sandstone Co.
Hearths—Amherst Sandstone Co.
Damper—Donley Bros.

HARDWARE
Interior and exterior—solid bronze.

SCREENS
Wood frames, copper mesh.
A simply handled solution of a sloping site which permits the placing of the principal rooms so that they face away from the street. The fenestration of this house demonstrates how easily the large windows demanded at the present time can be fitted into a traditional type of architecture. The owner, who held a fellowship in painting at the American Academy in Rome, has decorated the ceiling of the living room with painted ornament in the Italian manner, giving the interior a richness rarely encountered in the small house.

**CONSTRUCTION OUTLINE**  
**Cost:** $5,500.  
**Cubage:** 18,750, at 29 cents per cu ft.

| **FOUNDATION** |  
|---|---|---|---|---|---|---|
| **FRAME CONSTRUCTION** | Wood. |  
| **EXTERIOR SURFACE** | Brick veneer. |  
| **ROOF** | Wood shingles on shingle lath—cedar shingles. |  
| Gutters | copper, Chase Brass and Copper Co. |  

| **DOOR AND WINDOW FRAMES** |  
| Sash—Lemco steel casements. | Doors and frames (exterior)—wood. |  
| **GLASS** | Libby-Owens-Ford Glass Co. |  
| **EXTERIOR PAINT** | Trim | oil. |  
| **LATH AND PLASTERING** | Lathing—metal, Milcor Steel Co. | Plastering—sand finish for finishing coat. |  
| **INTERIOR WOODWORK** | Floors—oak. | Shelving and cabinets—white wood. |  
| Stock millwork—pine and white wood. |  
| **INSULATING** | Outside walls | rock wool, Johns-Manville. |  
| Attic floor |  
| **INTERIOR PAINTING** | Floors—acid stain and wax. | Trim. |  
| Doors | oil. |  
| Sash |  
| Walls |  

512
Entrance arrangement dictated by sloping site; placing the vestibule half-way between first and second floor levels gives privacy to bedrooms, ease of access to living room. Ample wall space for furniture in living room: the unbroken wall around the fireplace permits good decorative treatment. Dining room and bedrooms small but adequate.

WIRING
- Cable—BX, General Electric Co.
- Electrical fixtures—wrought iron.

LIGHTING
- Direct.

PLUMBING
- Kitchen
  - Stove—gas.
  - Refrigerator—General Electric.
- Bathrooms
- Cabinets—steel, chrome finish.
- Bath tubs—enameled iron
- Toilets—vitreous china
- Seats—Climax, Church Mfg. Co.
- Floor—tile.
- PIPES
  - Brass and copper, Chase Brass & Copper Co.
- HEATING
  - Oil—A.B.C. Oil and Burner Co.
  - Boilers—National Rad. Co.
- Piping—copper, Chase Brass and Copper Co.
- Valves—Hoffman.
- Hot water heater—in boiler.

CHIMNEY
- Fireplaces
  - Facings—slate.
  - Hearths—soap stone.
- Damper—H. W. Covert Co.

HARDWARE
- Interior and exterior—bronze, Sargent & Co.

SCREENS
- Steel frames, copper bronze mesh.
Unschooled in subdivision practice, the lawyer who built this house as the second of six to launch his first development, ran counter to the usual procedure in the New York area by refusing to sacrifice either design plan, or construction for attractive gadgetry. Money that normally might have been spent for decorative chimney braces went into insulation; overornamental moldings were stricken from the budget and the fun diverted to plumbing. If not a brilliant piece of residential design, this house is clean, simple, and in good taste.

### Construction Outline

<table>
<thead>
<tr>
<th><strong>Foundation</strong></th>
<th>Cost: $5,300. Cubage: 22,200, at 24 cents per cub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls—cinder concrete blocks,</td>
<td>Steel sash—Reynolds metal in basement.</td>
</tr>
<tr>
<td>Columns—lally,</td>
<td>Garage doors—1½&quot; white pine.</td>
</tr>
<tr>
<td>Cellar floor—concrete, integral cement</td>
<td>TERRACE</td>
</tr>
<tr>
<td>finish.</td>
<td>Flagstones on sand bed.</td>
</tr>
<tr>
<td><strong>Frame Construction</strong></td>
<td><strong>Glass</strong></td>
</tr>
<tr>
<td>Wood—Douglas fir.</td>
<td>Single strength, grade A.</td>
</tr>
<tr>
<td><strong>Exterior Surface</strong></td>
<td><strong>Exterior Paint</strong></td>
</tr>
<tr>
<td>Shingles—18&quot; Perfection.</td>
<td>Siding</td>
</tr>
<tr>
<td><strong>Roof</strong></td>
<td>Trim</td>
</tr>
<tr>
<td>Black slate on heavy asphalt felt.</td>
<td>3 coats lead and oil paint</td>
</tr>
<tr>
<td>Gutters and leaders—16 oz. cold rolled copper.</td>
<td>Sash</td>
</tr>
<tr>
<td>Flashing—16 oz. soft copper.</td>
<td><strong>Lath and Plastering</strong></td>
</tr>
<tr>
<td>Salt-glazed tile drains for leaders below ground.</td>
<td>Lathing</td>
</tr>
<tr>
<td><strong>Door and Window Frames</strong></td>
<td>Exterior—Reynolds Metallated Ecod Fabric</td>
</tr>
<tr>
<td>Sash and frame—white pine.</td>
<td>Galvanized.</td>
</tr>
<tr>
<td><strong>Interior Woodwork</strong></td>
<td><strong>Interior Plastering</strong></td>
</tr>
<tr>
<td><strong>Exterior</strong></td>
<td>Patent plaster—2 coats gypsum white.</td>
</tr>
<tr>
<td>Floors—¾&quot; red oak, pine in kitchen</td>
<td><strong>Trim</strong></td>
</tr>
<tr>
<td>Trim—white pine.</td>
<td><strong>Doors</strong></td>
</tr>
<tr>
<td><strong>Insulating</strong></td>
<td>Painted 3 coats, kitchen 3 coat enamel.</td>
</tr>
<tr>
<td>Attic floor—Reynolds type “B” metal.</td>
<td><strong>Wallpaper</strong></td>
</tr>
<tr>
<td><strong>Interior Painting</strong></td>
<td>Living room, bedrooms, alcove. Richard Thibaut.</td>
</tr>
<tr>
<td>Floors—Minwax.</td>
<td><strong>Sash</strong></td>
</tr>
<tr>
<td>Trim</td>
<td>Painted 3 coats, kitchen 3 coat enamel.</td>
</tr>
</tbody>
</table>

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**514 THE ARCHITECTURAL FORUM**
LAN: Virtually every square foot of space has been well utilized. Dining alcove off living room an excellent solution for house this size. Kitchen very compactly arranged; the combination of units illustrated shows the influence of apartment scale layout on the small house. Stairs leading directly to basement playroom from front hall make this room more conveniently accessible than is usually the case.

WIRING
- Cable—BX.
- Lighting Direct.

PLUMBING
- Kitchen
  - Sink
  - Refrigerator—"Universal," Landers, Frary & Clark
  - Floor—linoleum, Armstrong Cork Co.

BATHROOM
- Lavatories—Richmond Radiator Co.
- Bath tubs
- Toilets
- Showers

HEATING
- Oil—one-pipe system, Supreme Oil Burner.
- Boilers—Richmond Radiator Co.
- Radiators—American Brass Co.
- Piping—steel.
- Valves—Taco Heaters, Inc.
- Hot water heater—Taco Heaters, Inc.
- Thermostat

CHIMNEY
- Common brick, terra cotta flue linings, cement cap.
- Facing—common brick, painted.
- Lining and hearth—fire brick.
- Mantels—wood molding.
- Damper—Covert.

HARDWARE
- Interior locks by P. & F. Corbin, butts by Stanley Works.

WINDOW DRESSING
- Blinds—white pine, paneled.

SPECIAL EQUIPMENT
- Septic tank—Nustone Products Corp.
The exterior of this house incorporates several variations of the conventional forms. Most noticeable is the curved entrance motif, which not only looks well in relation to the facade, but provides extra space in the hall. The large casement windows on the ground floor admit about twice as much light as the customary double-hung window, and look very well in spite of the shutters, which, incidentally, could not be operated from the inside of the house without the greatest difficulty. The use of materials is excellent, and the texture of the brick wall particularly pleasing.

**CONSTRUCTION OUTLINE**

**Cost:** $12,000. **Cubage:** 36,500, at 33 cents per cubic foot.

**FOUNDATION**
- Walls—12” concrete.
- Columns and piers—concrete.
- Cellar floor—4” concrete, cement finish.
- Waterproofing—Truscon integral waterproof paste.

**MASSONRY CONSTRUCTION**
- 4” cinder block walls with faced brick, 4” brick tied by header course every seventh course.

**EXTERIOR SURFACE**
- Brick veneer, whitewashed.

**ROOF**
- Slate on sheathing—Bangor black slate.
- Valleys
  - Gutters—copper.
  - Flashing—copper.
  - Down spouts—Salt glazed tile drains below ground.

**DOOR AND WINDOW FRAMES**
- Sash and frames
  - Steel sash—Truscon Steel Co.
  - Door and frames (exterior)—local millwork.
  - Garage doors—overhead.

**PORCHES**
- Reenforced concrete.

**GLASS**
- Libbey-Owens-Ford Glass Co.

**EXTERIOR PAINT**
- Trim
  - Priming
  - Finish coat—Atlantic white lead.
- Sash
  - Priming—red lead.
  - Finish coat—aluminum.

**LATH AND PLASTERING**
- Lathing

**MASSONRY CONSTRUCTION**
- 4” cinder block walls with faced brick, 4” brick tied by header course every seventh course.

**EXTERIOR SURFACE**
- Brick veneer, whitewashed.

**DOOR AND WINDOW FRAMES**
- Sash and frames
  - Steel sash—Truscon Steel Co.
  - Door and frames (exterior)—local millwork.
  - Garage doors—overhead.

**PORCHES**
- Reenforced concrete.

**GLASS**
- Libbey-Owens-Ford Glass Co.

**EXTERIOR PAINT**
- Trim
  - Priming
  - Finish coat—Atlantic white lead.
- Sash
  - Priming—red lead.
  - Finish coat—aluminum.

**LATH AND PLASTERING**
- Lathing

**INTERIOR WOODWORK**
- Floors—oak planks.
  - Trim
  - Stainwoods—knotty pine.
  - Painted surfaces—white pine.
  - Shelving and cabinets—local millwork.

**INSULATING**
- Outside walls—air space in hollow blocks and between blocks and plaster.
  - Weatherstripping—American Weatherstripping Co.

**INTERIOR FINISHES**
- Floors—stained, Minwax.
LAN: The stair arrangement is unusual, necessitated probably by the short length of run from first to second floor. Garage and service portion well handled. Placing the maid's room on the second floor leaves the stairs available for larger bedrooms. Baths are well placed.

**Trim**
- Doors
- Sash
- Walls
- Wallpaper—Salubra.

**WIRING**
- Cable—General Electric Co.
- Electric fixtures—David Kojan.
- Switches—General Electric Co.

**LIGHTING**
- Direct.

**PLUMBING**
- Kitchen
  - Cabinet—local mill.
  - Stove—Estate, Detroit Stove Co.
- Washing machine—Maytag Co.
- Fixtures—Speakman Co.
- Cabinets—G. M. Ketcham Mfg. Corp.
- Toilets—Church Mfg. Co.
- Seats—National Tile Co.

**PIPES**
- 85 per cent copper (red brass), sweat joints.

**HEATING**
- Oil-fired steam system.
- Boilers—Electrol by Kewanee Boiler Corp.
- Radiators—Richmond Radiator Co.
- Valves—Hoffman Specialty Inc.

**CHIMNEY**
- Fireplaces
  - Facings—black face brick.
  - Hearths—black tile.
  - Mantels—knotty pine.
- Damper—Covert Co.

**HARDWARE**
- Interior—Stanley, Corbin.
- Exterior—Sargent.

**SCREENS**
- Copper mesh in steel frames—Truscon Steel Co.

**WINDOW DRESSING**
- Shades.
- Venetian blinds.
- Blinds.
5. Tentative draft of new "Regulation A," largely repeating the provisions of the Banking Act of 1935, issued for study by the Board.

9. At mid-month, had made 355 loans, totaling $14,729,295, for refinancing old buildings, and 27 loans, totaling $8,279,000, for new construction, but as yet had bought no FHA-insured mortgages, as a result of last month's offer (Arch. Forum, May, 1934, p. 398) reproduced on a large scale. (See page 390.)

10. Assistant Secretary Grimm, back from a tour of consultation with real estate boards throughout the country, pushed

15. Pulled a doubtable coup by rushing foundation contracts on all projects to meet the December 15 deadline for letting awards. Observers foresaw Reedsville woes (Arch. Forum, May, 1934, p. 398) reproduced on a large scale. (See page 390.)

16. Announced four new projects called "Greenbelt" towns, patterned after England's model suburban communities, totaling $31,000,000. (See page 3.)

17. Controller General McCarl approved $1,500,000,000 in projects, squelching building activity. (See page 4.)

18. Holcim loan program for development of semi-rural area near construction of park and recreation buildings; much needed credit for general recreation buildings.

20. Combined repair loan guarantees and mortgages insured reached $160,000,000. The figure splits approximately in half between the two, with 58 per cent of the insured mortgages financing new construction.

23. Low-cost housing program facilitated by new regulations and a mortgage bond finance plan. (See page 5.)

24. Still none formed. Expect Ernst Kahn

26. Outstanding loans to members, up from a $20,000,000 dip, reached the record height of $91,122,064. (See page 5.)

28. $450,000 of its $300,000,000 for purchasing shares of System members or in...
BUILDING MONEY

A monthly section devoted to reporting the news and activities of building finance, real estate, management and construction

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JOHN CUSHMAN FISTERE
Editor

Man of the Month MILES L. (“MIKE”) COLEAN (see Page 520)
A NEW FHA LOW COST HOUSING PLAN

is in the making. Funds will come from publicly-sold, privately-underwritten bond issues. How Technical Director Colean plans to pick and choose his projects.

One hundred and forty-two people at least know that the Federal Housing Administration is equipped to stimulate the building of houses and apartments for the poor and near-poor. That many people have submitted projects costing $863,000,000 to the FHA for mortgage insurance. Undoubtedly others, but not many, know of FHA's interest in the subject. Which is not exactly the fault of the public, because until now FHA has been comparatively quiet about its low cost activities. While at first beating the drum for remodeling, and later for mortgage insurance on private homes.

Before the snow flies, however, or at least before it gets very deep, the FHA will have declared itself in earnest for this third phase of its program. It is not yet sure that what it has to offer will be the permanent answer to housing—but at least it will create a new financing medium for housing that on paper has a good chance of being just what the experts prescribe.

In preparation last month were two significant documents, one, a revised circular No. 3 covering low cost projects, and two, a trust indenture that was at the root of the new housing plans. Between the two lay the hope of new housing under the FHA.

Authority. As stated in the Act itself, the FHA is empowered to insure mortgages “covering property held by Federal or State instrumentalities, private limited dividend corporations, or municipal corporate instrumentalities of one or more States, formed for the purpose of providing housing for persons of low income, which are regulated, restricted by law or by the Administrator as to rents, charges, capital structure, rate of return, or methods of operation.”

Within that scope, the FHA has been planning a basis for private financing. Six months ago, it issued tentative first regulations covering submission of projects and from it came the flood of submissions. More than half were rejected as having no merit, and the remainder are still either under consideration, or awaiting financing.

It was the lack of adequate financing that caused the FHA to re-examine the base on which it had built its program. It soon became evident that the primary cause for failure to find money for the projects lay in the unwillingness of financial institutions to lend large sums of money for single projects. Low cost housing projects, especially in larger cities, are usually whoppers. They have to be, either to become the re-makers of neighborhoods, or to create new neighborhoods. Few institutions were sanguine enough about the prospects to supply mortgages of $3,000,000 or $4,000,000, especially since they have only recently started contributing at all to the financing of new construction.

The way out immediately appeared to be some provision for sharing the expenses of construction. Two ways of accomplishing this presented themselves. One was to allow lending institutions to make a mortgage jointly. Another involved the creation of a special kind of mortgage bond structure for the financing of low cost housing.

Leaving choice between the two methods to the future, FHA low cost housing proponents set out to condition both routes for traffic. Two brief clauses in the Banking Act of 1933, well attesting to FHA potency in inter-Administration lobbying, were the result.

In the first, the requirement that in making a real estate loan a national bank must acquire the entire mortgage was removed. In the second, provision was made whereby the Comptroller of the Currency might classify as investment securities, rather than as real estate bonds, loans issued against FHA-insured mortgages on low cost housing projects. Thus was authority given for the sharing of low cost housing financing in two ways, with the bond issue route undoubtedly the more important.

Bonds. Still in process late last month was the preparation of the trust indenture for FHA's housing bonds. It was presumed, although not definitely known, that under the plan a mortgage would be executed in the form of an indenture of trust providing for the sale of bonds to other than approved lending institutions, and the appointment of a trustee to act in behalf of the bondholders.

Probably such bonds would be limited as to return—anywhere from 3½ to 4½ per cent, and would be underwritten in large blocks by investment houses, and sold as freely as “Homers” and “Farmers,” Wall Street's pet names for HOLC and FFMC bonds. For their designation as securities (they were duly so designated month before last by the Comptroller of the Currency) gave low cost housing bonds an enviable position alongside such securities, and even Government bonds themselves. Like HOLC bonds they will be backed by a partial U. S. guarantee, and with proper induction in the market should be rapidly taken up for trading.

Before the National Conference on Housing last month, Miles Colean, FHA's technical director, outlined as much of the plan as had become definite. Going back to pick up loose threads in the tale, he explained:

"As the Housing Act was originally passed, institutional loans offered the only possibility for financing our projects. Only a handful of institutions exist which are capable of making loans of the size required by a typical project. This, coupled with the natural caution I have referred to, prevented as rapid an extension of the plan as the building world is even now ready to undertake.

"Through a series of legislative enactments, it has now been made possible to finance projects through issues of insurance mortgage bonds. The details of this method of financing are now about complete. It involves a type of trust indenture wholly new to the mortgage world and a type of trusteeship quite different in its responsibilities from the ordinary corporate trusteeship. Here again the caution which attended the introduction of new financial devices this time magnified by the unpleasant aroma which comes to mind at the memory of a real estate bond issue, has meant that our preparatory work has had to be exceedingly thoroughgoing, both in the legal and educational aspects.

"We have proceeded to the point where the work of preparing a definite issue of these bonds is well under way and should be ready for announcement in a few weeks. A high quality of security will be made available through such issues and we are confident that the funds which this source will provide will assure the fruition of many desirable projects during the coming year."

Colean. Whenever an organization is put together in a hurry there are always wrong guesses in the personnel. Although the FHA's sins in this respect were numerous, the initial organizers made one right guess in the naming of Miles L. (Mike) Colean as head of the Technical Division. Along with Albert L. Deane and Ward M. Canaday, now back at their private business, Colean followed the organization from the basement of the Walker-Johnson Building, into the new Post Office, then to the Southern Railway Building and finally into its present residence—the old Department of
and amenity." The FHA definitely will not insure mortgages on projects which "are obliged to compete for tenancy by the offering of extraordinary facilities and services."

Other criteria contained in the new regulations set up by the FHA last month, in anticipation of the early completion of its bond plan:

2. COMMUNITY:
   (a) Adequacy and diversity of sources of employment for the families the housing accommodation is intended for. The FHA will consider areas that are not likely to become undesirable areas. In the FHA plan, "low cost" has been defined according to the extent to which the FHA will exclude the possibility of special damages to the community with respect to the planning of the FHA plan, and the relation of such added burdens to the same likely to be available to meet them.

3. THE NEIGHBORHOOD:
   (a) Zoning or regulation of the type of residential use represented by the project; character of the neighborhood; the existence of tenements; or the possibility that it will not become less desirable to residential uses on account of encroachment of industrial or similar uses.
   (b) The character and conditions of administration of the community, with particular reference to the possibility of excessive tax burdens having increased tax rates, the probability of further special assessments and their relation to the FHA project with respect to the planning of further levies, and the relation of such added burdens to the same likely to be available to meet them.
   (c) Proximity of the neighborhood to low population over a considerable period, and the measure in which the FHA project might reverse such tendency.
   (d) Conformity of the project with city, county or regional zoning or provision of the area. The FHA project lies within the area affected by such planning, especially where it is of such a nature as to constitute a direct influence upon the neighborhood trend; conformity with subdivision regulations and to prevent intrusion of non-conforming uses.
   (e) Availability of the project for highway or by means of public transportation at reasonable cost, and with reasonable expenditure of time, for and from places of employment, shopping centers, schools, and any other existing or definitely assured as part of the proposed development or otherwise.

3. THE SITE:
   (a) Suitability of the site of the project for residential development; its freedom from serious hazards of flood, drainage, subsidence, fog, noxious odors, nuisances and the like.
   (b) Suitability of the site plan of the project for continuing the neighborhood, and for the purpose of neighborhood, and for the purpose of neighborhood improvement and major items of repair.
   (c) Adequacy and efficiency of the neighborhood, and for the purpose of neighborhood improvement and major items of repair.
   (d) Suitability of the development plan for family purposes.
   (e) Suitability of the project for family purposes on account of enioyuation of the neighborhood; conformity with subdivision regulations and to prevent intrusion of non-conforming uses.

4. THE BUILDINGS:
   (a) Height of the building with respect to existing law or city and county ordinances. The FHA building will be approved if it is not over three stories in height.
   (b) Location of the building in relation to the utilization of land and the safety and sanitation of facilities.
   (c) Suitability of the type of construction of the project for the general plan of housing proposed and the plan for repayment of the loan.
   (d) Conformity of the land use, buildings and all accessory features of the project with all applicable laws, ordinances and regulations relating to the utilization of land and the safety and sanitation of buildings.
   (e) Suitability of the project for family quarters.

5. FINANCE AND OPERATION:
   (a) Relation of rental levels of the project to the existing pattern of rentals of similar quality and character in the immediate neighborhood.
   (b) Estimated operating costs with respect to local prices and conditions; adequacy of equipment replacement and major items of repair.
   (c) Assumptions as to occupancy rates in relation to a conservative long-term expectancy.
   (d) Possibility of achieving surplus in excess of dividend requirements after service of the mortgage debt, operating expenses and all taxes.
   (e) The loan in relation to its earnings power for a period sufficient to cover an improvement as designed to be satisfactory on the basis of the foregoing.
   (f) Sufficiency and character of the equity in the project, with the view to securing incentive for efficient management.

In all cases an adequate amount of cash working capital will be required. There will be no FHA loans unless the cash working capital will be approved.

Scanning the FHA's plan and its requirements, many an observer was likely to sense a conflict with the program of the PWA Housing Division, which has hopes of being continued in something more than a management capacity past the December 15 deadline set for all PWA projects. It was not, however, a conflict between agencies, but between the two schools of housing thought; Federal vs. private building.

Those who last month credited the recent fusillade of self-inflating publicity from the PWA's Housing Division to the FHA's moves were mistaken. Last month's announcements, releasing names of projects long held hidden by the speculator-becoming PWA, told a commendable tale (see next page). But they also told a tale of Ickes' stubbornness, and of breakneck effort to crowd as many jobs as possible into the Division's remaining lease on life.

Minute examination of the program's status reveals that the many foundation contracts as possible were being rushed through in order to qualify projects for continuation past the deadline.
<table>
<thead>
<tr>
<th>LOCATION</th>
<th>NAME</th>
<th>TYPE</th>
<th>SIZE</th>
<th>COST</th>
<th>CHIEF ARCHTS., CONTRACTORS</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlanta, Georgia</td>
<td>Techwood</td>
<td>Three-story dormitory, two story row houses, three-story apartments</td>
<td>644 living units; 22,875,000</td>
<td>Harri &amp; Stevens</td>
<td>J. A. Jones Constr. Co.</td>
<td>Construction completed</td>
</tr>
<tr>
<td>Atlanta, Georgia</td>
<td>University</td>
<td>Two and three-story flats and row houses</td>
<td>675 living units; 2,500,000</td>
<td>Edwards &amp; Sayward</td>
<td>N. P. Severin Co.</td>
<td>Construction complete</td>
</tr>
<tr>
<td>Atlantic City, N. J.</td>
<td>Site A</td>
<td>Two-story row houses and flats</td>
<td>337 living units; 1,700,000</td>
<td>J. Vaughn Mathis</td>
<td></td>
<td>Site acquired, demol. bid accepted Sept. 17</td>
</tr>
<tr>
<td>Birmingham, Ala.</td>
<td>Smithfield Court</td>
<td>One and two-story row houses; three-story walk-up apartments</td>
<td>721 living units; 3,000,000</td>
<td>O. B. Whidden</td>
<td></td>
<td>Site being purchased (D)</td>
</tr>
<tr>
<td>Boston, Mass.</td>
<td>Old Harbor Village</td>
<td>One and two-story row houses; three-story walk-up apartments</td>
<td>199 living units; 60,000,000</td>
<td>D. O. Whidden</td>
<td></td>
<td>Site being purchased (D)</td>
</tr>
<tr>
<td>Buffalo, N.Y.</td>
<td>Lang Field</td>
<td>One and two-story row houses and flats</td>
<td>635 living units; 4,500,000</td>
<td>Chester Oakley</td>
<td></td>
<td>Site under option (D)</td>
</tr>
<tr>
<td>Cambridge, Mass.</td>
<td>Main Street</td>
<td>Two-story row houses and flats</td>
<td>579 living units; 2,500,000</td>
<td>J. J. Nelson</td>
<td></td>
<td>Site under option (F)</td>
</tr>
<tr>
<td>Camden, N. J.</td>
<td>Westfield</td>
<td>Two-story row houses and flats and three-story apartments</td>
<td>305 living units; 1,500,000</td>
<td>Samuel Lapham</td>
<td></td>
<td>Site under option (F)</td>
</tr>
<tr>
<td>Charleston, S. C.</td>
<td>Meeting Street</td>
<td>Three-story apartments; two-story row houses, three-story apartments</td>
<td>1,042 living units; 6,000,000</td>
<td>Robert DeGolyer</td>
<td></td>
<td>Site under option (F)</td>
</tr>
<tr>
<td>Chico, Ill.</td>
<td>Jane Addams Homes</td>
<td>Two-story apartments</td>
<td>603 living units; 3,500,000</td>
<td>J. F. Smith</td>
<td></td>
<td>Site being assembled (D)</td>
</tr>
<tr>
<td>Chico, Ill.</td>
<td>Denville</td>
<td>Three-story apartments, row houses and flats</td>
<td>662 living units; 3,500,000</td>
<td>J. F. Smith</td>
<td></td>
<td>Site under option (F)</td>
</tr>
<tr>
<td>Cleveland, Ohio</td>
<td>Stadium Park</td>
<td>Two-story row houses and flats</td>
<td>559 living units; 2,500,000</td>
<td>George D. Mason</td>
<td></td>
<td>Site under option (D)</td>
</tr>
<tr>
<td>Cincinnati, Ohio</td>
<td>Eden Park</td>
<td>Three and four-story apartment houses</td>
<td>1,278 living units; 6,500,000</td>
<td>Frederick G. Warner</td>
<td></td>
<td>Site under option (D)</td>
</tr>
<tr>
<td>Cleveland, Ohio</td>
<td>Cedar Central</td>
<td>Three-story apartments</td>
<td>654 living units; 3,279,000</td>
<td>Walter R. McCormick</td>
<td></td>
<td>Site under option (D)</td>
</tr>
<tr>
<td>Cleveland, Ohio</td>
<td>Outhwaite</td>
<td>Two and three-story apartment houses, flats and row houses</td>
<td>635 living units; 3,650,000</td>
<td>Main, Walsh &amp; Barrett</td>
<td></td>
<td>Site under option (D)</td>
</tr>
<tr>
<td>Cleveland, Ohio</td>
<td>West Side</td>
<td>Two-story row houses and apartments</td>
<td>597 living units; 3,800,000</td>
<td>J. L. Weismann</td>
<td></td>
<td>Site under option (F)</td>
</tr>
<tr>
<td>Columbus, S. C.</td>
<td>University Terrace</td>
<td>Row and two-story row houses and flats</td>
<td>462 living units; 1,500,000</td>
<td>James B. Coughlin</td>
<td></td>
<td>Site under option (F)</td>
</tr>
<tr>
<td>Dallas, Texas</td>
<td>Lamar Drive</td>
<td>One and two-story row houses</td>
<td>215 living units; 900,000</td>
<td>Walter C. Sharp</td>
<td></td>
<td>Site under option (F)</td>
</tr>
<tr>
<td>Detroit, Mich.</td>
<td>Chandler Park</td>
<td>Three-story apartments; two-story row houses and flats</td>
<td>803 living units; 4,500,000</td>
<td>Hugh Meriwether</td>
<td></td>
<td>Site under option (F)</td>
</tr>
<tr>
<td>Detroit, Mich.</td>
<td>East Side</td>
<td>Three-story apartments, two-story row houses and flats</td>
<td>1,031 living units; 3,300,000</td>
<td>Wm. L. Ross and M. C. Goochey</td>
<td></td>
<td>Site under option (F)</td>
</tr>
<tr>
<td>Indianapolis, Ind.</td>
<td>Community Housing</td>
<td>Two-story, three-four story apartment houses, two-story row houses and flats</td>
<td>1,044 living units; 3,025,000</td>
<td>N. P. Severin Co.</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Jacksonville, Fla.</td>
<td>Durkee Village</td>
<td>One and two-story row houses and flats</td>
<td>264 living units; 1,000,000</td>
<td>W. D. Owens</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Lexington, Ky.</td>
<td>Blue Grass Park</td>
<td>One and two-story row houses and flats</td>
<td>150 living units; 1,500,000</td>
<td>Hugh Meriwether</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Louisville, Ky.</td>
<td>Athenaeum Park</td>
<td>One and two-story row houses and three-story apartments</td>
<td>694 living units; 6,700,000</td>
<td>J. F. Smith</td>
<td></td>
<td>Site under option (D)</td>
</tr>
<tr>
<td>Louisville, Ky.</td>
<td>Seventeenth Street</td>
<td>One and two-story row houses and three-story apartments</td>
<td>278 living units; 1,200,000</td>
<td>J. F. Smith</td>
<td></td>
<td>Site under option (D)</td>
</tr>
<tr>
<td>Memphis, Tenn.</td>
<td>Arctic Drive</td>
<td>One and two-story row houses and three-story apartments</td>
<td>125 living units; 700,000</td>
<td>E. T. Hutchings</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Memphis, Tenn.</td>
<td>Park</td>
<td>One and two-story row houses and three-story apartments</td>
<td>635 living units; 3,200,000</td>
<td>J. F. Smith</td>
<td></td>
<td>Site under option (D)</td>
</tr>
<tr>
<td>Miami, Fla.</td>
<td>Sixty-second St.</td>
<td>Single-story row houses</td>
<td>255 living units; 1,100,000</td>
<td>Paint &amp; Stewart</td>
<td></td>
<td>Site acquired (F)</td>
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<tr>
<td>Milwaukee, Wis.</td>
<td>Parklawn</td>
<td>Three-story apartments and two-story row and flat houses</td>
<td>438 living units; 2,800,000</td>
<td>Gerritt J. DeGelder</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Minneapolis, Minn.</td>
<td>Summer Field</td>
<td>Two and three-story apartment houses and row houses</td>
<td>694 living units; 3,500,000</td>
<td>William H. Tyler</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Montgomery, Ala.</td>
<td>Bell Street</td>
<td>One and two-story row houses and flats</td>
<td>156 living units; 459,000</td>
<td>J. W. Simpson</td>
<td></td>
<td>Site acquired (F)</td>
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<tr>
<td>Montgomery, Ala.</td>
<td>Thurman St.</td>
<td>One and two-story row houses and flats</td>
<td>377 living units; 1,700,000</td>
<td>Carl R. Cope</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Nashville, Tenn.</td>
<td>Civic Center</td>
<td>One and two-story row houses and flats</td>
<td>361 living units; 1,500,000</td>
<td>Richard R. Clark</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Nashville, Tenn.</td>
<td></td>
<td>Two-story row houses and three-story apartments</td>
<td>165 living units; 800,000</td>
<td>W. J. Provost</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>New York, N. Y.</td>
<td>Williamsburg</td>
<td>Three-story walk-up apartments</td>
<td>2,029 living units; 12,783,000</td>
<td>H. H. Shreve</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>New York, N. Y.</td>
<td>Harlem</td>
<td>Four-story walk-up apartments</td>
<td>725 living units; 4,700,000</td>
<td>A. M. Brown</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Oklahoma City, Okla.</td>
<td>North Side</td>
<td>One and two-story row houses and flats</td>
<td>539 living units; 2,000,000</td>
<td>J. O. Parr</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Omaha, Neb.</td>
<td>North Side</td>
<td>One and two-story row houses</td>
<td>485 living units; 2,000,000</td>
<td>W. L. Steel</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Philadelphia, Pa.</td>
<td>Hill Creek Park</td>
<td>One and two-story row houses; two-story flats and row houses</td>
<td>540 living units; 2,000,000</td>
<td>W. H. Thomas</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Stanford, Conn.</td>
<td>Fairfield Ave.</td>
<td>One and two-story row houses; three-story apartments</td>
<td>165 living units; 800,000</td>
<td>W. J. Provost</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Virginia Islands</td>
<td></td>
<td>Two-story flats and three-story houses; three-story apartments</td>
<td>322 living units; 1,600,000</td>
<td>Robinson, Porter &amp; Williams</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Washington, D. C.</td>
<td>Anacostia Flats</td>
<td>Two-story row houses and flats; three-story apartments</td>
<td>13 living units; 60,000</td>
<td>H. R. Register</td>
<td></td>
<td>Site acquired (F)</td>
</tr>
<tr>
<td>Wayne, Pa.</td>
<td>Manton Ave.</td>
<td>Two-story row houses and flats</td>
<td>62 living units; 25,000</td>
<td></td>
<td></td>
<td>Site acquired (F)</td>
</tr>
</tbody>
</table>

**D** - Demolition contract awarded. **F** - Foundation contract awarded.
No handful of bankers get together, either a formal session or chance meeting, without wading into the subject of the disposal of run down, foreclosed property. The discussion invariably boils down to the wisdom of pursuing one of two possible courses: should the bank do its own remodeling and then sell, or should it lend money to someone who will remodel as a part of the purchase agreement?

Not even among comparable institutions in the same city is the practice uniform. Whereas the Emigrant Industrial Savings Bank of New York (second largest) much prefers to sell to an investor to do his own work (ARCH. FORUM, May 1934, p. 400), the Bowery Savings Bank (largest) has developed its own reconditioning technique which permits it to do its own remodeling (ARCH. FORUM, May, 1935, p. 500).

In Wilmington, Delaware, however, no division of policy exists. For in that city the almost inevitable answer to the banker's problem is J. Frank Darling, hard working president of Darling Properties Co. He has only one business: buying outmoded properties, either from banks or private owners, borrowing enough money over and above the mortgage to cover labor and materials, putting in his own organization's time and overhead as his equity, remodeling, and then operating the completed buildings.

Although nearly every big city has a few speculative builders who operate in the same fashion, the distinctive characteristic about Frank Darling's business is that five years ago he started with no capital. Today his company owns fourteen buildings, every one of which is paying a profit. Two years ago, feeling that his already successful business was seriously handicapped by lack of capital, he sold $60,000 worth of preferred stock, on which he has paid an 8 per cent dividend ever since.

Darling. In 1926, ten years after he had started in the linoleum business as a salesman with a sample case and a week's traveling expenses as his only assets, Frank Darling interested enough Wilmington money in his ability, to finance a $2,000-000 floor covering company. No sooner had he built a plant, assembled an organization, built an apartment house for his employees than Depression swept him out of his own company, flat broke.

With some experience as a dabbler in residential building in Richmond, Va., Darling fancied he might try his hand seriously at building. But with foreclosures tumbling in on the banks of Wilmington, they were in no mood to lend more money for more new buildings, but they were in a very welcome mood to unload some of their foreclosed property, if Darling was interested.

In the case of the Wilmington Savings Fund Society, the willingness amounted to offering Darling an old house for the price of the mortgage plus the amount it might cost him to remodel it into a small apartment house. All Darling needed was what he had—a good reputation in the city, just enough capital to hire himself. Money for the remodeling came from the bank. Before the work was completed all the apartments were rented.

No sooner had the first job been finished than he started another on the same terms. Before long, he was handling all the foreclosed outworn properties the bank could not sell, and his activities spread to other banks.

Formula. By 1933, the pattern of handling the properties had been established. Employing his own architects and doing his own general contracting, Darling was earning $8,300 yearly on his eight buildings. As he outlined his plan in a prospectus that was designed to enlist the required $50,000 capital, "each property provides the funds for its own remodeling."

Said the prospectus: "The procedure to acquire a property is to give the seller a purchase money mortgage for the agreed selling price. In the case of purchase from a bank, this usually represents the amount of mortgage existing on the property. The plan further provides that funds be advanced against the property when modernization is completed, which sum of money, due to the economy of the company's operation, amounts to the cost of labor and materials on the job.

"In the case of purchase from an individual property owner, a contract is entered into which provides that after the property is fully modernized and completed, Darling Properties Co. shall have the right to place a first mortgage on the property for a sum agreed on beforehand (the cost of the alterations), and the seller takes a second mortgage for his equity."

"At first glance it might seem that the seller was jeopardizing his security in taking a second mortgage, but upon reflection it is evident that the seller is far better off with a conservative second mortgage..."
on a property which is paying its way than he is with a complete title to a property, which property is a tax and interest burden to him."

**Cases.** With this as the formula, Darling has cleaned up almost entire neighborhoods with model overhauling. Out of his experience, two jobs stand out as better than average.

On the preceding page are pre- and post-Darling pictures of 501 North Rodney Street, where for a cost of about $32,000, eight unoccupied apartments were converted into 12 tenanted apartments of 4½ rooms each. The old house was stripped of its porches, the roof raised to create a new third floor, and a wing added to provide kitchen and bath space for an apartment on each floor. Taking advantage of the steep slope, an entrance was excavated through what had formerly been the front yard and cellar, and a lobby created in what had been the basement, with space left over for a resident janitor. A brick facing changed the somber tone of the exterior, a second-hand elevator was installed, and the interiors completely finished.

When the building was completed, the Wilmington Savings Fund Society found that instead of worrying about a $12,500 mortgage on the property, it had a good $45,000 one paying 6 per cent regularly.

The balance available to Darling Properties for profit, sinking fund and vacancies, from a gross rental of $7,244 was $5,030.

Case history No. 2 is shown below, with before and after pictures of the properties listed on Darling’s books as 210 East 16th Street, and 212 East 16th Street. At the bottom left is No. 210, known in Wilmington as the “Hundred House,” because nearly 100 colored people were crowded into its handful of apartments. Darling tore it down to its foundations, and built a new five story elevator house with eighteen apartments, each with a living room, bedroom, combination foyer and dining alcove, a kitchen with mechanical refrigeration, insulated gas ranges with heat control; bath with shower, hardwood floors, etc.

Now occupied by white families, earns 6 per cent on the $44,500 mortgage whereas it had earned nothing on an $88,000 mortgage. Out of the annual income of $8,928, Darling earns before amortization, an annual return of $4,878.

The picture at bottom right shows today, with the row of houses behind that comprises the alteration job at 212 East 16th Street. The worst kit of Negro slum (top left) before it was remodeled, it was not earning a cent interest on the $6,000 mortgage. Acquired by Darling to protect the other property, he converted the row into an attractive garden community (top right) and earns for himself an annual net before amortization of $8,402. The new mortgage on the property is for $22,500, and earns 6 per cent.

"The Hundred House“ and Catfish Row Converted into a Respectable Community
BUILDING BETTERMENT CONTINUES

In September, with foreclosures off, costs level, and rents still on the climb. Stocks reflect the trend.

STOCKS

RENTS

FORECLOSURES

COSTS OF BUILDING MATERIALS

BUILDING PERMITS

THE NEW SEDGWICK ELECTRIC
ROTO-WAITER

Registered Trade Mark
Patented In the United States and Canada

THE MODERN WORD
FOR FULL
AUTOMATIC ELECTRIC
DUMB WAITER EQUIPMENT

1. Overload and slack cable device.
2. Flexible traction cable.
4. Momentary pressure push button.
5. Steel idler sprocket.
6. Adjustable steel sprocket bar.
7. Steel roller chain.
8. Cable connection.
10. Reinforced steel car.
14. Drive sprocket gear.
16. Independent support bearing.
17. Motor bed plate.

Better Service at Lower Cost
Safe, Compact and Durable

Write for Complete Data; also New Catalog of Sedgwick Electric and Hand Power Dumb Waiters and Elevators.

SEDGWICK MACHINE WORKS
Established 1893
140 West 15th Street New York, N. Y.

NOVEMBER - 1935 - BUILDING - MONEY
A MODEL BLOCK OF HOUSES

and an optional purchase plan are used to bestir
interest in Washington’s Hamlet.

Ask any regional planner who knows
Washington, D. C., to name the city’s best
development, and he will answer: “The
Hamlet.” Ask any real estate man, and he’ll
answer anything but the Hamlet. For this
curious group of nine houses, just about
a mile beyond Chevy Chase Circle off
Connecticut Avenue, is at once the best
and worst of community units. It is best,
in theory at least, from a land use stand-
point, and worst because in a city which
is begging for new houses only one of
the nine has been sold.

The Hamlet is the latest project of the
Chevy Chase Land Co., oldest and most
conservative real estate firm in the nation’s
capital. The company was started in 1890
by copper-rich Senator Francis G. New-
lands of Nevada, who bought up 1,800
acres in the northwest corner of the Dis-
trict, running over into Montgomery
County, Maryland. To reach the property
he built a street railway out Connecticut
Avenue, and spanned the deep Rock Creek
Park with the high bridge that is now a
capital land mark.

Despite heavy building throughout the
years, Chevy Chase Land Co. still
has plenty of untouched acreage, the taxes
on which have worn a deep hole in the com-
pany’s earnings. Early in 1933, Edward L.
Hillyer, Chevy Chase president, and vice
president of the conservative Union Trust
Co., watched vacancies dwindle in the city,
concluded it was about time to put some
more land to work.

Competition for the home buyer’s dollar
is probably keener in Washington than in
any other city. Washingtonians appear to
be willing to pay the price, but what they
buy must be good. Steel-framed, air condi-
tioned houses are not uncommon, nor is the
general level of design so low that good
design alone is enough to attract attention.
Thus President Hillyer knew that what he
offered would have to be exceptional.

The added reason was the necessity of
injecting into the first houses built some
element that would not only sell the indi-
vidual houses and lots, but that would sell
the area as a place to live. Since nearly all
the usual tricks—golf courses, swimming
pools, community centers—had been per-
formed by others in Washington, Hillyer
decided that the one way to portray The
Hamlet’s community character was to build
a few model houses, but an entire
model block.

Though there were good architec-
aplenty in Washington, the Newlands
family, which still controls the Chevy
Chase Co., sent on from Nevada Architects
Dan Kirkhoff, whose houses for permanen-
tary residents dot the outskirts
of Reno. Also from the West came an ab-
land planner, Sharon Farr of Berkeley,
California.

Together with Mr. Hillyer, they work-
out a plan unlike anything Washington had
ever seen before. Closest approach to The
Hamlet is Clarence Stein’s and Henry
Wright’s Radburn—but in the opinion of
many who have compared the two, The
Hamlet plan is done even more skillfully.

Around a landscaped Commons four-
teen plots are grouped (see plan), with
small enclosed laundry yards and a private
terrace for each house, yet with the major
part of what would have been private prop-
erty given over to the central area. The
design for the area is formal, with one group
of houses balancing the other on the opo-
site side. Attached garages are effectively
hidden in all cases with widened out spaces
in the back area providing adequate park-
ning space for the cars of guests or delivery
trucks.

The normal plot size for the houses would
have been about 100 x 120. In The Hamlet
they have been reduced to 70 x 120. Although
the houses are closer together
than is normally the case, privacy is ob-
tained by studied plan staggering. Along
the street, the set backs are uniformly un-
even, which, together with the planting,
forms as attractive a community vista as
Washington can boast.

The interior development for the block
cost about $87,000, adding $500 to the cost
of each house. All the utilities are buried
underground.

Figures on other costs are not available
in detailed form. Nor will Mr. Hillyer say
anything more than that there is no profit
to the company in the first houses offered
for sale at from $18,000 to $20,000.

Of the nine houses built to date, eight
are in one group, and the ninth starts a
second unit of six to complete the block of
fourteen. Each has three bedrooms, two
baths, living room, dining room, and
kitchen, with electrically equipped appli-
cances and winter air conditioning systems.
Some have a maid’s room and bath.

All nine houses are occupied, but only
one has been sold. The rest are rented.
The plan is to install desirable tenants in
the houses on an option agreement, the
length of the option (from two to twelve
months) depending upon the individual
circumstances. If at the expiration of the
term the tenant decides not to buy, he
is asked to leave. Should he decide to stay,
the rent already paid is applied to the
purchase price.

Fighting first against the remoteness of
the site from downtown Washington, the
Chevy Chase Land Co. was further
confronted with an unexpected apathy.

The Hamlet’s Plan—Unit No. 1 in Black

THE • ARCHITECTURAL • FORUM
wo Hamlet Houses

... which do not prove as well as other views of the community might that the houses are a Regency adaptation of the old New Orleans style. The house above is one of the two duplicate houses that form a gateway to Unit No. 1. The roofline has been accentuated to produce the entrance effect. The plans above, being for the duplicate house, are shown in reverse. At the right is a house more nearly typical of the other houses in the community.

ward the unusual planning. Hundreds of visitors have driven up to the impressive entrance (through two gate-post like Norman houses) but the buying inquiries are few. The flaw seems to be that people who can afford to pay $20,000 for a house resent living in block plan units, regardless of the excellence of the plan. It smacks of regimentation.

President Hillyer, whose record is one of low rather than spectacular success, is the last worried over the ultimate success of his venture. He is just as calmly certain today as he was when he first approved the scheme that The Hamlet will eventually be regarded as the outstanding community in Washington.

November 1935 - Building - Money
AIR CONDITIONING COSTS

for office buildings, charted for the first time, indicate when a system will pay its way.

Rules of thumb in air conditioning are as inconclusive as they are difficult to frame. The number of variables in buildings of apparently the same type is so great that cost guesses are invariably made with crossed fingers, much to the annoyance of architects and building owners who on nearly every building nowadays debate whether or not it should be air conditioned.

Last month, however, there was released from the Carrier Engineering Corporation a rather simple formula for determining the economic advisability of installing an air conditioning system in any given office building. It sought to answer for larger office buildings under any conditions of occupancy and rentals the question of whether or not air conditioning would be profitable.

The fact that such a formula should be made available to the building public was in itself a surprise, but that it should come from Carrier was doubly interesting. For years, as the only known name in the business, Carrier made a practice of limiting the distribution of its engineering data. The obvious reason was that it wanted to retain as much as possible of the economic value of what Adam Smith called "the impetus of an early start."

Now, however, with competitors cropping up all around them, Carrier has changed its attitude, and no better illustration of the change is the Econograph. There are two parts to the Econograph—first, the table which gives rough indication and rentals the question of whether or not air conditioning would be profitable. With the chart such economics may be studied and very closely determined, even before the rather complicated steps of designing a system and giving an instal cost estimate have been taken for a particular building. This is of direct obvious benefit to both the buyer and the seller of air conditioning equipment.

Inasmuch as such designing requires very considerable amount of time to all of the conditions extant in a particular building, the possibility of knowing beforehand whether or not the economics of system would justify its installation obviously offers a considerable saving of the of course the system prove to be an uneconomic venture.

"A demonstration of the latter method approach is included in a brochure which Carrier Corp. has made available for distribution by The Forum."

AIR CONDITIONING FOR OFFICE BUILDINGS
OWNING AND OPERATING COSTS - GROSS
IN CENTS PER YEAR PER SQ. FT. OF RENTABLE AREA

<table>
<thead>
<tr>
<th>Zone</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours of Refrigeration</td>
<td>1000</td>
<td>1500</td>
<td>2000</td>
<td>3000</td>
</tr>
<tr>
<td>Typical Cities</td>
<td>Los Angeles</td>
<td>New York</td>
<td>Chicago</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Building Shape</td>
<td>Power</td>
<td>Water</td>
<td>Operating</td>
<td>Total</td>
</tr>
<tr>
<td>Power</td>
<td>2.5</td>
<td>2.5</td>
<td>3.0</td>
<td>6.2</td>
</tr>
<tr>
<td>Water</td>
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<td>27.7</td>
<td>27.9</td>
<td>29.9</td>
<td>35.9</td>
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</tbody>
</table>

NOTES:
1. For other power or water rates, correct in direct proportion.
2. Add for roof effect:
   - Roofs more than 1 story: 5 Stories 50% 6 Stories 55% 7 Stories 60%
   - Above 8 Stories 80%
3. Divide terraced building into sections according to terraces or set-backs and consider each section separately.
4. For雷斯 figures apply to buildings averaging more than 10,000 square feet of rentable space per floor. Should be increased about 10 per cent for buildings averaging from 7,000 to 10,000 square feet per floor.

Table I
Table II

Example:
Present conditions—62 per cent occupancy—rental rate $2 per sq. ft. per year. Selected anticipated annual owning and operating cost for air conditioning system, 30 cents. Wanted to know—necessary new rental rate and occupancy to return the annual owning and operating charges, without extra profit.

Process:
Select point 62 (per cent occupancy, bottom scale).
Erect vertical to $2 line (scale to left of chart).
Follow diagonal to 30 cent line (scale on lower right of chart).
From this intersection run down curve to base line.
Drop vertical to 30 cent line (scale lower right of chart).
Draw diagonal through this intersection of indefinite length.
Any point along this line, representing combinations of occupancy and rental rate, will provide sufficient money to pay annual owning and operating charges.

Conclusion:
These combinations have this effect:

<table>
<thead>
<tr>
<th>Occupancy</th>
<th>Rental Rate</th>
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<tr>
<td>30%</td>
<td>$5.20</td>
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<tr>
<td>40</td>
<td>3.70</td>
</tr>
<tr>
<td>50</td>
<td>3.06</td>
</tr>
<tr>
<td>60</td>
<td>2.55</td>
</tr>
<tr>
<td>70</td>
<td>2.13</td>
</tr>
<tr>
<td>77 1/2</td>
<td>2.00</td>
</tr>
<tr>
<td>90</td>
<td>1.70</td>
</tr>
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</table>

Thus, if the owner retained his $2 rental, he would have to boost his occupancy to 77 1/2 per cent to make the system pay for itself. If the increased value of the space warranted a 50-cent increase in the square foot rental, the owner would just about have to hold his existing tenants.

---

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The proof of Accurate superiority lies in its performance. Try out Accurate on your next weather strip requirement.

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**Accurate Metal Weather Strip Co.**

214 East 26th Street, New York
One Thousand Grand Concourse sets a rental record for Bronx apartment houses, and gives Builder David Rose's competitors a target to shoot at.

Among those in the building industry to whom brilliancy of design is not the be-all and end-all of architecture, the apartment house which bears the fortunate label of 1,000 Grand Concourse in New York's Bronx is the most talked about building in the city. Reasons for the hub-bub are many. In the first place, anything Speculator David Rose builds excites his horde of Bronx competitors. But more important than that, it is the first high class apartment house to be built of reenforced concrete in the East.

If other reasons are needed, there is the fact that it has as many corner windows as Architects Sugarman & Berger could squeeze into the plan, and every bedroom has a bathroom. Finally, ten days before it was finished, every one of its 101 apartments was rented at an average price of $25 a room, which is about $4 above the competitive scale in the district.

Had it not been for the thoroughly accidental reason of the existence on its site of solid rock, One Thousand, like the sixteen other apartment houses built on the Concourse for occupancy this fall, would have been a non-fireproof structure. But, according to the code, that would have meant either digging an expensive basement into the rock, or giving over the valuable first level above ground to a non-inhabitable basement. Consequently, fireproofness and unlimited story-height was the indicated solution.

As between structural steel and cinder arches, and reenforced concrete, the debate lasted for months. What finally won Builder Rose over to Engineer Victor Mayper's preference for reenforced concrete was the possibility of lower maintenance costs. In the words of Rose: "No plaster, no plaster cracks." Actual cost of the concrete frame was about $85,000.

Money for the building came from Equitable Life Assurance Society who after a thorough neighborhood study granted a loan of $350,000.

Figured conservatively, the building stands a good chance of earning around $85,000 a year. The operating schedule on which the Equitable based its loan was:

- Gross income, 381 rooms @ approx. $82:
- Expenses:
  - Operating expenses $25,000
  - Interest (5%) and amortization (2%) $24,500
  - Taxes 15,000
  - Vacancies (10%) 9,200
  - Depreciation 5,000
- Total $79,312

Left for profit and further amortization $12,688.

And since Rose has a full building $25 a room, the actual income is well over the $25,000 mark.
The construction system employed in the Grand Concourse is a reinforced concrete frame, with exterior walls of 4 in. brick over backed up by 8 in. terra cotta tile. Certain features of the construction appear to be of note, and may interest the profession and the building industry. No finiteness is claimed but rather careful working out and adaptation of principles successfully used by others.

The items outlined below are not necessarily listed in the order of their importance.

1. FINISH. It was planned to produce a shed surface, in all cases where concrete exposed, which would compare favorably with the usual plastered surface. A mental reservation was made, however, that under worst conditions it might be necessary to blast all exposed concrete surfaces, and building costs were budgeted accordingly.

2. EXTERIOR SURFACES. No concrete was used on the exterior, it being thought undesirable in building on account of architectural maintenance, and competitive renting conditions.

3. INTERIOR SURFACES. All exposed interior surfaces were poured on plywood panels. The panels, 4 x 8 ft. in size, were carefully worked out to be symmetrically placed in each room, the thought being that if the joints could not be satisfactorily hidden, their symmetrical arrangement might not hurt the appearance of the ceiling. It was originally planned to use panels 6 ft. wide with the length varying to suit the length of the various rooms, thereby eliminating all longitudinal joints. This plan was abandoned in favor of the 4 x 8 ft. panels which were a stock size and could be obtained without the long delay necessary to obtain longer lengths.

The finished result proved to be so satisfactory that no marks showed. This was accomplished first by careful fitting and workmanship on the forms; second, by using heavy and closely spaced shores; third, by the use of the usual oil on the forms; fourth, careful rubbing and pointing when the forms were stripped; fifth, by additional rubbing about three weeks after the first rubbing; and last, by careful spatulation by the painters before applying priming and finishing coats. It is noteworthy that with the building fully occupied, no one has been aware of the ceilings to mention visible joints. It is also noteworthy that there is no room on each floor where the ceiling was plastered to cover patching done after the concrete hoist had been removed, which furnishes a comparison with the concrete finish, and it is the opinion of all those who have examined this room that the plastered ceiling compares unfavorably with the concrete ceiling.

2. CEILINGS. The practical advantages of unplastered ceilings are too obvious to mention — no plaster cracks, no danger of falling plaster, and low maintenance.

3. COLUMNS. All columns are 12 in. wide and vary in length from 12 to about 36 in. maximum to suit load conditions. All columns are arranged, as much as possible, to run lengthwise of the rooms. This permitted a shortening of the beams, the sizes of which were controlled by the intensity of shear. The arrangement of the columns generally effected a saving of about 3 in. in the span of the beams which permitted beams not exceeding 12 in. in depth below ceilings and not exceeding 12 in. in width.

The projections of the columns into the rooms (sometimes as much as 3 inches) were not objectionable as their projection into the rooms at right angles to the partitions generally averaged only 4 inches.

The columns were designed to be of uniform section from the first to the top floors. This was done to eliminate patching out of beam ends where the columns changed in size as the load reduced. It was found that the economy of the reenforced steel and the form work made up for the slightly increased volume of concrete. However, in certain cases the contractor asked for permission to change column sizes at about the half-way point of the building. This permission was granted, but there is no unanimity of opinion as to whether any money was saved thereby.

4. BEAMS. No beams protrude below the ceilings of all the important rooms, except around the walls, and the maximum drop at the partitions is about twelve inches, with a maximum projection into the room of about five (thus producing the effect of a flat furred and plastered ceiling without the added cost and without the added story height necessary to maintain the 9 ft. ceiling height set for this building. A minimum number of beams was used in laying out the work. Wherever possible the framing of beams to beams was eliminated.

5. REENFORCING RODS. In the floor slabs, the rods are laid in the direction of the

*PREPARED BY VICTOR MAYPER, Consulting Engineer.*
Plans, section, detail and typical interiors, whose common denominator is ingenuity, which is reflected, not only in the plan and construction, but in the buying ability of Builder Rose.
span, ½ in. in diameter, and spaced on centers. The column and girder rods are in diameter, except where unusually heavy demanded 5½ in. windows.

ARCHITECTURAL CONSIDERATIONS

Set-backs. These were avoided as much as possible, as it was considered that type of construction did not lend itself naturally to set-backs. However, where space was made, they were in all cases along lines coinciding with column or lines.

Corner windows. Framing for corner windows was arranged very simply and but heavy projections into the rooms, forced concrete lending itself very little to all types of special conditions.

Bathroom floors. These were poured the same level as all floors. Plumbing chases were run exposed on ceilings behind baffled, lathed and plastered, its having been provided to receive its hangers.

Preparation for tile and terrazzo. Where tile and terrazzo floors were used, the surface of the concrete was haired with a rake the day following pouring.

Preparation for wood floors. No special preparation was required beyond a smooth floor level finish, which was kept dry for 4 months. The hardwood flooring is set in mastic directly on floated concrete surface.

Paritions. Terra cotta or gypsum. These presented no unusual problems.

Wire lath and plaster. Two-inch wire and plaster partitions were used between rooms in apartments and double lar partitions between apartments. It is necessary to employ a gang of drillers drill holes in floors and ceilings to receive nailing for top and bottom plates and hanger points. These openings having been planned in such a way as not materially to detract the strength of the structural members.

H. Plumbing pipes. Suitable openings in walls were provided where the floors were red, these openings having been planned fullly in advance.

J. Heating Risers. These were set in the walls at the job of this type, to provide a nailing up built into the bottoms of the beams to minimize the drilling on the ceilings.

K. Trim. Where base or picture molding ads. (See detail.)

Architectural Considerations

trims were built into the forms to eliminate thinning. After the first tier was poured, a stairway was constructed for workers to work on.

G. Wall intersections. Offsets of at least 4½ in. were run exposed on ceilings between apartments. It is necessary to employ a gang of drillers drill holes in floors and ceilings to receive nailing for top and bottom plates and hanger points. These openings having been planned in such a way as not materially to detract the strength of the structural members.

B. Waterproofing over windows. Shelf strips were provided in the concrete, arranged in such a way as not materially to detract the strength of the structural members.

4. Heating risers. Nailed up built into the bottoms of the beams to minimize the drilling on the ceilings.

5. Plastering of ceilings and beams. Spars were run exposed on ceilings between apartments. It is necessary to employ a gang of drillers drill holes in floors and ceilings to receive nailing for top and bottom plates and hanger points. These openings having been planned in such a way as not materially to detract the strength of the structural members.

6. Finanical Features. This naturally interests builders most, but unfortunate-
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By mutual agreement between employers and employees, more than five million U. S. working men now have their wages periodically adjusted to the cost of food and shelter. The means: the Bureau of Labor statistics' monthly index of purchasing power, compiled from prices of important commodities. Result: protection for worker and employer alike against the vagaries of the U. S. dollar, worth 55 cents in 1929 and 81.82 in 1933, in terms of its status in 1926.

Whenever called upon to explain his scheme for hedging leases and mortgages against changing dollar values, Realtor Ivan A. Thorson of Los Angeles likes to cite this fact. Equally as etable in his theory's favor is the fact that since he began espousing it, early last year, a goodly number of leases in Los Angeles have been written according to its principles. Realtor Thorson, an appraisal consultant, first applied the idea in adjusting a lease for Los Angeles' big Broadway Department Store, has since been at work on a simple clause which might be applied in any situation.

By last month Mr. Thorson had perfected and was ready to release his lease adjustment clause. Insertable in any lease, it provides a simple mechanism for annual adjustment of the rent, according to the Irving Fisher index of purchasing power. The Fisher index is used instead of the Government's because of its readiness availability (it is published daily in the Wall Street Journal) and because Mr. Thorson believes it the more sensitive of the two. The clause:

"IT IS EXPRESSLY PROVIDED that the sum or sums herein agreed to be paid as rent are payable on the value of current United States Money as determined by the index of the purchasing power of the dollar as published by Irving Fisher.

"AND IT IS EXPRESSLY PROVIDED that the rent herein agreed to be paid shall on the first day of March of each year during the continuance of this lease, be adjusted for the ensuing year by multiplying the sum herein provided as monthly rental by the current value (which is hereby established at and stipulated to be 55) and dividing the result thereby obtained by the latest index representing the purchasing power of the dollar published by said Irving Fisher at the time of said adjustment."

To demonstrate how the scheme works, Realtor Thorson included in presentation of the clause* a table showing how, in case the dollar were to drop as it did from 1931 to its 1920 low of 55 cents, e.g., $1,000 in rents under the proposed stipulations would be upped to $2,127 (see schedule below). Admitting that such synchronization in the dollar moves in 1920-35 might be desirable in no case, Mr. Thorson nevertheless was strong in advising word for word use of it for the present "as the dollar is falling quite rapidly in value."

*Inflation and Real Estate: Hedging Leases and Mortgages Against Changing Dollar Values, by Ivan A. Thorson, Realty Research Bureau, Los Angeles, 8pp., with charts, 1.00

The Dollar on the Move, 1920-35

The Thorson Clause in Action, Assuming the Dollar Continues to Decline

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<tr>
<th>Year</th>
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<th>1935 Dollar Val.</th>
<th>$8,100 Rent Will Buy</th>
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<tr>
<td>October 1935</td>
<td>8.17 $117 \times 81 = 810.00</td>
<td>117</td>
<td>8,100</td>
<td>117 \times 81 = 810.00</td>
<td>8,100</td>
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<tr>
<td>1937</td>
<td>8.10</td>
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The property is run-down, but the cost of servicing it would at all times have the same purchasing power. In fact, the only way in which the payment of interest as well as amortization of the principal and the annual liquidation of the indeluctness can be made equitably is on this basis. But is doubtful whether financial institutions dealing with the public will be able to utilize the principle, because of the very limited understanding which the average person has of monetary matters.

To what extent general application of the Thorson scheme might anesthetize S. S. leasing and lending by eliminating the desire for long-time profit so often present in such transactions was a topic for vely speculation. However, in view of the current trend these days toward subsidizing profits to security, as exemplified by increasing use of the percentage lease, realtor Thorson’s equally workable plan or for Synchronizing lease and mortgage payments with the value of the dollar appeared to have a chance to gain some popular acceptance.

**DISTRICT REJUVENATION**

is the goal of a NAREB proposal, calling for State adoption.

Much has been said but little done during the past three years about neighborhood salvation through collective action by the property owners concerned. Proponents of the idea have generally opposed the present direct. Government-financed clearance program as a prop-in-the-bucket activity, and they like to point at the many cases in which such activity has resulted in the building of low-rent suburban housing is just more suburban development.

In cases in which such activity has re-

sulted in displacement of the former small districts, which in many cases has resulted in fire, health and police problems.

Meanwhile, in these blighted areas every type of utility service is maintained, at a tremendous cost to taxpayers. The property is run-down, but the cost of servicing these areas with fire, health and police protection—to cite just three examples—is higher than in other areas, whose property owners must foot the bill. Due consideration, too, is the plight of the institutional mortgagee, who likewise suffers from fallen property values.

The answer, says the neighborhood improvement faction, is not in advancing funds for the wiping out of necessarily small districts, which in many cases has resulted in displacement of the former tenants, but in a much more broad attack upon the problem as a whole.

With simply the thesis that it is more economical in a single instance for a neighborhood to engage in self-rejuvenation, Arthur C. Holden, a New York architect with a bent for economics, attempted to put the theory into practical application last year by inciting the owners in a Manhattan area to form together privately for its rehabilitation (ARCH. FORUM, Jan., 1935, p. 104). Enmeshed in legal difficulties, the Holden project never reached maturity.

A new attack from the neighborhood improvement camp is aimed directly at the force which helped Rehabilitator Holden. For several years the National Association of Real Estate Boards’ genial, studious and hard-working manager, Herbert U. Nelson, has been consulting with legal experts, government officials, city planners and members of his organization skilled in neighborhood rehabilitation, on the subject of neighborhood rejuvenation. His conclusion was that semi-governmental, and not private, corporations are what is needed to accomplish the task.

Last month to all NAREB member boards went an “idea draft” of the legal instrument by which Secretary Nelson hopes to see such neighborhood improvement organizations formed. Checked and re-checked by legal minds, the proposed act would be applicable in any state of the U. S. Briefly, it provides:

1. That three-fourths of the property owners in a properly defined neighborhood may, with the approval of the court, organize a Neighborhood Protective and Improvement District. Such a district becomes a public corporation, not materially different from the familiar drainage districts and school districts already in existence throughout the country. The districts elect trustees whose powers are defined. The plan had every reason to appeal to many of the membership of the NAREB. To the building industry its wide adoption would mean a stimulated volume of expenditures for remodeling and, later, for new construction, outside of wide benefits which would accrue from bettered realty conditions.
For Government Building: William F. R. Ballard

An article by Mr. Ernst Kahn which appeared in the August and September numbers of THE ARCHITECTURAL FORUM conveyed the impression that decent housing could be made available to the masses of America by means of an annual Federal subsidy which would act to reduce the return on privately invested capital to 3% per cent, which subsidy would foot up to a subsidy which would act to reduce the rent small fraction of the subsidies now contemplated by the PWA. The impression thus conveyed is false.

To quote the article, there is the question: “Based on a limit of say 20 per cent for shelter . . . what builder is prepared and able to offer decent and cheap rents to the 60 per cent of the population whose income is below $1,000?”

There is the answer: “The plan . . . is one that follows a primary principle of government aid, i.e., it should be the most inexpensive form of assistance possible . . . “At the present time, average rate of interest is about 5% per cent, but at that figure the housing could never rent for a figure low enough to house the population for which it is intended. Rents based on 3% per cent money, however, would be within the reach of those to be housed.

“It may be useful to show the decisive influence of money rates on housing. Let us base our example on a four-room flat erected at a total cost of $4,000, thus bringing the average price for each room to $1,000. Let us further assume that in this particular case the other current expenses to be charged on the tenant (including profit, taxes, depreciation, maintenance, losses on vacancies and arrears, etc.) should require $240 for the flat or $60 for the room, we arrive at these results:

| Rent per room and | If the capital in-
| month | vested costs |
| $11 67 | 8% |
| 10.83 | 7 |
| 9.00 | 6 |
| 7.16 | 5 |
| 6.33 | 4 |
| 5.50 | 3 |

(Qotation ends)

Or in other words: $7.91 = \left( \frac{4,000 \times 0.033}{4 \text{ rooms}} + 8240 \right) \div 12 \text{ months} + 4 \text{ rooms} . . . and so it is implied that the matter is settled.

But, $7.91 a room a month does not come close to the 20 per cent rent allowance of the $1,000 income bracket mentioned above, because $7.91 \times 4 \text{ rooms} = 91.66 \times 12 \text{ months} = 5880 \times 0.05 (20\% \text{ of income}) = 11800. (Or on basis of 3\% rooms, $7.91 rent requires income of $1,662.50.)

Nor is it possible under private initiative to produce the $7.91 rent. Four thousand dollars is a figure derived from building permit estimates throughout the country. This estimated sum does not include the cost of land or fees and overhead.

New urban low cost housing communities must of necessity, because of building laws and the long periods of amortization contemplated, be of a permanent character. Such habitations in the northeastern States cannot be produced for less than $1,100 per room for all costs outside of land cost. This latter will be as high as $300 per room even in an existing slum of wooden structures and comparatively low population density as in Williamsburg in Brooklyn. Average land cost for urban housing could be taken to average $2000 a room. Maintenance including management, heat, redecoration and repairs will not be below $200 a year per room.

With the above factors established what is the rent and what is the Government subsidy as between the proposal under discussion and the prevailing PWA financing? The average size family quarters will be taken as 3\% rooms since present practice is to provide about an equal number of 3 and 4 room flats.

Case “A” — Rent per room according to FORUM article. Interest @ 3\% on 50\% total cost.... 836.40 Amortization of 50\% total cost (private investors will hardly go along on longer than 40 year true amortization).... 7.39 Taxes on land cost only (N. Y. State has such provision for limited dividend projects—the same might be possible elsewhere) @ 4\%.... 5.00 Maintenance.... 45.00

Less net yearly income for store rentals.... 8185.09

Rent per room per month making no allowance for vacancies.... 8 7.92

Case “B” — Rent per room — present PWA plan.

Interest @ 3\% on 50\% total cost........ 836.40 Amortization over 60 yrs. of 50\% costs outside land— 611.65 Taxes @ 3\% (Federal projects will pay no tax at all—but if privately or municipally managed tax on site cost might be paid).... 3.00 Maintenance.... 45.00

Less net yearly income for store rentals.... 873.15

Rent per room per month making no allowance for vacancies.... 8 873.15

In the case of “A” the yearly rent for 3\% room apartment will be $232.82—monthly $77.78. Assuming that 25 per cent of total income can go for rent since heating costs are included in maintenance, the family income must be $1,335.28 (60 year amortization—$1,358.92). In case “B” yearly rent will be $783.65, monthly rent $197.59 and necessary income $8490.10. It is evident that present PWA plan produces rents considerably lower than Mr. Kahn’s scheme.

How about the magnitude of debt the Government is accumulating in order to subsidize low rental housing during its amortization period under schemes “A” and “B”? Not counting amortization of funds Government borrows in order to provide the subsidy in either case, Government in case “A” is subsidizing each room 2\% of its total cost each year or $246 plus interest accumulations thereon: in case “B” Government grants an initial subsidy on each room of $855 and each year accumulates the interest charges thereon. At the end of the forty year amortization period, “A” subsidy totals $1,040 per room plus 40 years $81400 \div 2 \times (x being the interest rate Gov- ernment pays on its money): at the end of 60 years “B” subsidy will be $855 per room plus 60 ($855 x). Only in the case that the interest which the Government pays on its subsidy money exceeds 3.18 per cent will the total subsidy in “B” exceed that in “A.” If the Government pays 3 per cent interest on its borrowings for purposes of subsidy, the total subsidies at the end of the amortization periods are: “A” — $1,664 — “B” — $1,638.

It has, it appears, been proposed that the Government subsidize to the same extent

"With sixty year true amortization for case ‘A’ this figure becomes $1,976."

GOVERNMENT BUILDING VS. PRIVATE
BUILDING FOR LOW COST HOUSING

owners of housing instead of the occupants of housing with the result that the occupants would pay a 41 per cent higher rent. The impression created in Mr. Kahn's article that housing is possible by means of his scheme for those whose incomes do not exceed $1,000 and that such housing would involve a Government debt much less than would be incurred under present proposed methods of PWA financing is a false impression.

For Private Building:
Ernst Kahn

I am sorry to say that Mr. William F. R. Ballard did not read my article thoroughly; otherwise he could not have implied that I expect a rent of $7.30-$7.92 a month to be insufficient for housing the masses.

What I actually pointed out is this: An efficient American housing practice is impossible unless all items in rent calculating are substantially revised. Up to now America expects a gross return on the capital invested of—say 16.3 per cent— whereas European cities expect a gross return on the capital invested of—say 7.9 per cent.

Undoubtedly this is to be attributed primarily to the high rate of interest for mortgages in this country. To show the importance of this point, I gave as a mere example the influence of the money rates per room per month, showing that a $1,000 room now burdened with 8 per cent interest and requiring $80 a year operating charges could be rented at $7.50 if the rate of interest could be reduced to 3 per cent even if all the other factors remain unchanged.

However, the very sense of my second article is exclusively devoted to the problem of how these other items could be considerably reduced. The article concludes that quite apart from the rate of interest, scientific management should bring a further reduction of $39 a room a year, equal to $3.35 a month. If based on 3 per cent interest, a $1,000 room thus could be rented at $86 a year, or $3.57 a month, and at $6.92 if based on 3 1/2 per cent interest.

This calculation does not take into consideration the rather radical tax exemption Mr. Ballard and others seem to propose; whereas I based my calculation on a 3 1/2 per cent tax, the New York Housing Authority obviously contemplates a tax regulation which would in effect bring down the tax for new low cost housing to 0.5 per cent. This, consequently, would result in the additional possibility of reducing the rents to $1.50 or $3.67 a room a month.

Whether such a radical tax exemption is practical and wise is another question. Yet the fact that this tax exemption is not taken into consideration should be a sufficient margin for many higher expenses as presumed in my calculation.

Mr. Ballard continues in his own calculations on a 3 1/2- and 4-room unit. I feel strongly that both 3 1/2- and 4-room units will be too big for the bulk of those to be housed with public help at least in the larger cities. A thorough investigation of the size of modern families will show that a surprisingly high percentage of those to be housed will be satisfied with 3 1/2 rooms.

Mr. Ballard cites my remarks that 60 per cent of the American families have an income below $8,000. (Not $8,000 as stated through a misprint.) The real facts are presented in the Brookings Institute's survey on "America's Capacity to Consume," which gives income figures for both farm and non-farm families.

<table>
<thead>
<tr>
<th>Income Classes (In dollars)</th>
<th>Families of two or more persons (Percentage of all families)</th>
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</thead>
<tbody>
<tr>
<td>Under 0</td>
<td>2.47%</td>
</tr>
<tr>
<td>0 to 500</td>
<td>7.214%</td>
</tr>
<tr>
<td>500 to 1,000</td>
<td>12.329%</td>
</tr>
<tr>
<td>1,000 to 1,500</td>
<td>26.043%</td>
</tr>
<tr>
<td>1,500 to 2,000</td>
<td>17.111%</td>
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</tbody>
</table>

*Estimates for this class are highly tentative.

Our problem is largely an urban one, and the table shows that only 12 1/2 per cent of the non-farm population had an income below $1,000 in 1929.

Mr. Ballard, furthermore, bases his consideration on New York conditions, pointing out that the cost per room in this city runs as high as $1,500. We accept this presumption, though I privately feel that one should find a way to bring these costs down even in New York. European experience shows that in low cost housing one is not entitled to put in equipment which only higher brackets may be able to pay for. I may be wrong, and $1,500 actually may be the minimum cost per room in New York City. Should this be the case the actual rents in New York would be 50 per cent above my average estimate, equal to $875 to $935. On the other hand, one should not forget that the income of the New York population is far above the country's average. The Brookings Institute estimates the average income per head in New York at 75 per cent above the average income of the country.

Aside from this, it may be quite possible that the subsidy which I proposed (2 to 3 1/2 per cent) should in some cases be higher and in others lower. There may be cases where a subsidy of 3 to 3 1/2 per cent will be quite sufficient to house a certain income group, and there may be other cases where an initial subsidy of 3 1/2 per cent would be necessary. The latter may be advisable in some large cities, or at least in some sections of larger cities; and it certainly would be advisable in housing the very lowest income brackets. With respect to the latter group, I am personally of the opinion that immediate rehousing of those people should be postponed.

Mr. Ballard finally tries to compare his plan of subsidy, which is a capital subsidy, with my proposal which is just a temporary annual subsidy. Again, I am extremely sorry that Mr. Ballard missed the point of my whole proposal. My plan is based on the assumption that such a subsidy will be necessary only for a comparatively limited number of years, as I expect a quick lowering of interest rates in this country as soon as the mortgage structure is at last modernized.

He expects from the Government a capital subsidy as much as $385 a room whereas the Government's subsidy if based on my suggestions would be confined to a small fraction of this amount. Apart from this, I wonder if Mr. Ballard even took the pains to figure out what his proposal actually means to the taxpayer. He would certainly agree that it would be unfair and harmful just to rehouse at public expense a few privileged tenants. If his system should work and not do more harm than good it would be necessary to rehouse by public money all families in the lower brackets. If one considers that by 1945 the number of families in the United States will be as high as 45 millions, a conservative estimate of the number of families to be housed within the next twenty years by public subsidy would be somewhere between 5 and 10 millions.

Based on this estimate an outlay of $885 capital subsidy per room ($8.047.50 per family) would require the gigantic sum of $12,287,500,000 to $44,475,000,000 out of the public funds. I wonder if any Treasurer of the United States ever will be prepared to spend as much money for low cost housing no matter how enthusiastic he feels on this point.

NOVEMBER • 1935
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<td>CLAUDE H. BENNETT, Gen. Mgr.</td>
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FORUM OF EVENTS
(Continued from page 11)

tious, floors and even bathtubs, at a single pouring (see cut). No such house was ever built, although the inventor did build a group of orthodox concrete houses for his workers in New Jersey. Last month Mr. Edison's cement activities were remembered when the Press reported an Edison Housing Study and asserted that the company was concentrating on concrete houses. Quickly Edison Housing Study Director W. D. Cloos, big and good-natured, issued his denial: "All systems of construction shall be weighed ... Diversified as are the interests and manufacturing facilities of the Thomas A. Edison industries, we have no commercial bias in favor of a poured concrete house ..."  

STATE MURALS
Public Works of Art Project and its successors flooded the U. S. with a deluge of Government-commissioned murals. What surprised most citizens was that most of these were good art. Scheduled for November 26 in Manhattan's swank women's Cosmopolitan Club is an exhibition aimed at comparing the best U. S. Government art with the best that Europe has lately produced. Secondary purpose: to give critics of state art an opportunity of comparing it with private projects. This month the Cosmopolitan Club is hanging murals from Denmark, Italy, France, Germany, Great Britain, Holland, Japan, Sweden, Russia, Switzerland. Murals that cannot be moved will be represented by sketches, large renderings. On exhibit with other U. S. murals will be the prize winners in the competitions for the Treasury Building and the Post Office in Washington, D. C.

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PERSONALS
RUDOLPH P. MILLER, one time building code commissioner, Manhattan, was elected chairman of the American Standards Association Building Code Correlating Committee. Other executive members are J. Andre Fouilhoux, A.I.A., William Capes, American Municipal Association, W. F. Austin, Associated General Contractors, Edward W. Hoern, Building Officials' Conference, W. E. Mallais, National Board of Underwriters. The committee will attempt to correlate more than 1,600 building codes in the U. S.

Frederick & Nelson, Seattle department store and a brand of Marshall Field, sponsors competition for the design of four small homes on actual existing lots. The winning homes will be sold by the store for furnishing or unfurnished, as of January, 1936. Winner Class A (construction cost $4,500) was Victor Steels, graduate artist; Class B ($6,000): Henry Olschewsky, Seattle architect. Class C ($8,500): J. List Holmes, Seattle architect. Class D ($9,000): W. Hugo Osterman, Seattle architect. Howard Leland Smith, formerly of Cass Gilbert, now Smith & Ward, New York City, has been appointed chief architect of the Federal Housing Administration.

The Producers' Council will hold its twelfth semi-annual meeting in Detroit, December 4. Keynote: "Increased operation between Governmental agencies, financing institutions, architects, builders and building material men to promote quality in the resurgent building industry."
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...more another point of improvement in bathroom equipment—the new Crane ECONOMY Shower head. The world is asking for the new, the useful, the economical in home equipment. The ECONOMY Shower Head answers that requirement with new kind of shower, a spray using less water, and a spray at less cost.

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U.S. CAMERA 1935. Edited by T. J. Maloney, published by William Morrow & Company, New York. With a preface by M. F. Agha and comments by Steichen, Genthe, Lohse, and other noted photographers. 192 pp., 8\(\frac{1}{2}\) x 11\(\frac{3}{4}\), $2.75.

The appearance of U.S. Camera 1935 is a notable event marking as it does the publication of the first American photographic annual. The extraordinary growth of interest in photography which has manifested itself in various ways during the past few years is accurately reflected in this book whose standard of excellence is uniformly high, despite the fact that the acceptance of only one example of any photographer's work made it impossible to fill the book with pictures of a few outstanding men. Like the contemporary European annuals, U.S. Camera covers the entire field of photography, its subject matter ranging from candid camera shots to pictures of cosmic ray showers. Color plates are included, excellent examples of the progress that has been made in this new branch of photography. The book is well designed and the reproductions are superlatively good. Not the least attractive feature is the price which is less than half the usual cost for books of this size and quality.

ART STUDENTS' ANATOMY, by Edmund J. Farini. Published by H. B. Lippincott Company, Philadelphia. 147 pp., with 143 illustrations, of which 7 are in color. 7 x 10. $4.00.

A new, compact anatomy for artists which treats its subject with diagrams, sketches, action photographs, and x-ray pictures. The author has also included reproductions of the magnificent engravings of Siegfried Albinus, an anatomist, illustrator of the early 18th century. The material is well coordinated, with the use of pictures to eliminate text whenever possible. A useful glossary of anatomical terms, with pronunciation as well as meaning, is given at the end of the book.

As a service to interested readers, The Architectural Forum will undertake to order copies of foreign books and others not conveniently obtainable locally, which have been reviewed in this department. Checks and money orders to be made payable to The Architectural Forum.
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Specify GOOD SHEETS

A reputation for excellence has been earned by American Steel Sheets and Light Plates. These products are well made, and are up to highest quality standards — the kind that pleases the industrial buyer and user, also the architect, builder, sheet metal worker and property owner. Demand these sheets for heating, ventilating and air-conditioning systems, and all forms of sheet metal work. Supplied in Black and Galvanized Sheets, Special Sheets, Tin and Terne Plates for all purposes. Keystone Copper Steel offers maximum rust-resistance—and U.S.S Stainless Steel Sheets and Light Plates are adapted to a wide range of utility.

For workability, durability, and satisfaction standardize on American products. If in doubt about the best specification for a particular use, do not hesitate to ask advice — which will be gladly given. American products are sold by leading metal merchants. Send for literature.

American Sheet and Tin Plate Company, Pittsburgh, Pa.

Steel Sheets are also manufactured in the South by Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Sheets and Tin Plates produced on the Pacific Coast by the Columbia Steel Company, San Francisco, Calif.

United States Steel Corporation Subsidiaries
New Development for Built-up Roofs

Copper... traditional for its durability... is now available in a form and at a price which recommends its use in built-up roofs. This new Anaconda development... copper in wide, thin sheets of unlimited length... makes possible the construction of a more durable type of built-up roof by combining the copper with alternate layers of asphalt.

"Electro-Sheet" is water-proof, rust-proof, lasting. Weighing two ounces per square foot, the impervious copper prevents deterioration of the "undercoats" of asphalt, which retains its original softness and pliability.

In various sections of the country, installations already made have demonstrated (1) the ease with which "Electro-Sheet" can be applied... (2) the tight bond between the copper and the asphalt... (3) the exceptionally smooth surface of the finished roof. There is every indication that these built-up copper roofs will last indefinitely with a minimum of maintenance!

Detailed information about Anaconda "Electro-Sheet" Copper for built-up roofing is given in our new booklet, Anaconda Publication D-2. Write today for your free copy.

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Connecticut
Offices and Agencies in Principal Cities

ANAconda COPPER & BRASS
The well-known Oliver Hotel in South Bend, Indiana, may be considered by some an old hotel, but when it comes to the renovated lunch-room, it is as new as tomorrow.

One of the outstanding features of this recently redesigned eating-place is the back bar... made of glistening, gleaming Monel Metal.

A. C. Weisburg, Manager, has had plenty of experience in sensing public preference. He is former president of the famous Merchandise Mart Restaurant in Chicago, and now is manager of both the Harrison Hotel in Chicago and the Oliver in South Bend.

So when he specifies Monel Metal, he is considering all three phases of the problem confronting all who select food-service equipment:

1. Appearance that appeals to the public
2. Cleanliness
3. Low maintenance

You get all three of these pleasing results when you specify Monel Metal.

And what is even more important, food service equipment made of Monel Metal will retain its shining, old silvery appearance. This is proved by the fact that many installations have been in constant use for 20-25 years.

Send for a copy of "The Selection of Food Service Equipment" addressing THE INTERNATIONAL NICKEL COMPANY, INC.

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.
FOR MODERNIZING STORE FRONTS

• The store front is the merchant's silent salesman, ever reflecting the character of his store and merchandise. Thus modernization of store fronts with stainless steel is good business as well as good taste. It brightens the customer's outlook as well as the store's.

Stainless steel is uniform in composition from its glistening front to its unfinished back. It does not pit, chip, or peel. It can be washed as easily as glass. No polishing and no protective coating are required to maintain its glistening beauty.

The rustlessness and tarnish-resistance of stainless steel trim keeps the store face permanently bright and attractive.

For twenty-nine years Electromet has pioneered in the field of ferro-alloys and alloy steels. The data thus developed on stainless steels and other alloy steels, together with the further help of Electromet Engineers in selecting suitable materials for your designs, are available on request.

ELECTRO METALLURGICAL COMPANY
Unit of Union Carbide and Carbon Corporation

Electromet
Ferro-Alloys & Metals
For Protection and Economy!

Economy, comfort, convenience! Those are the results usually sought when automatic temperature control apparatus is considered. Incidentally, those are the results attained when the regulation equipment is Johnson. But beyond that, there are many instances where accurate dependable control of temperature and humidity is essential for protection. Museums, art galleries, and certain industrial processes are examples of such applications, where exhibits and products must be protected against insufficient or excessive temperatures and humidities. . . . In the beautiful Joslyn Memorial, a gallery of valuable art treasures, some 120 Johnson dual thermostats operate Johnson valves on 244 direct radiators. A comfortable temperature during occupancy periods and a safe, reduced temperature at other times! Humidifying and ventilating are Johnson controlled, as well.

JOHNSON SERVICE COMPANY: Milwaukee, Wis. and Direct Branches in all Principal Cities
Submit this graphic picture to
modernization prospects

BUILDING managers who have made the above
entry in their ledgers are finding that the credit
side soon wipes out the debit.

There are some very definite reasons why the
change-over from old type car-switch elevators
to Otis Signal Control is a profitable investment.
The change brings faster elevator speeds, less
waiting time, a saving in stopping time at the
various floors, greater comfort to passengers.
These obvious elevator improvements put the
building on more favorable footing to compete
with the newer structures, help attract more
tenants, and keep present tenants satisfied with
their quarters. The change-over to Signal Con­
trol also reduces elevator operating expenses
and prolongs elevator life.

We shall be glad to co-operate with you in
any way on an elevator modernization project
of this character, or, for that matter, any type
of elevator modernization problem.

OTIS ELEVATOR COMPANY
Your back copies of THE ARCHITECTURAL FORUM are virtually irreplaceable.

Available now are binders that will preserve them in either sewn or spiral bound form.

Illustrated above is a new binder, covered in natural tan Wehtex Studio cloth and stamped with black letters, specially designed to hold the January-June, 1935 issues. The rods which slip through the spiral binding, and the inside back strip are of chrome plate. Complete single issues are easily removed and returned. Price: $2.00, f.o.b. New York City.

Illustrated below is the binder for sewn issues. This is available in any standard color library buckram, with reinforced end papers, heads and library corners. The legend is of 22 carat gold leaf printing. To procure this binder, just send your copies of The Forum express prepaid. Price: $3.50, f.o.b., New York City.

Binders are now available for the January-June and July-December, 1935 issues.

Send check or money order to
THE ARCHITECTURAL FORUM
135 East 42nd Street, New York City.
With most patented flashings, it is necessary to specify several types to meet ordinary flashing requirements. Here is a new reasonably-priced flashing that is adaptable to any and all architectural specifications! It is furnished in one type only... flat sheets... therefore it can be cut and bent by the sheet metal contractor to any style or size he wishes.

This flashing is made of Revere Copper (soft temper) or non-staining Revere Leadtex (lead-coated sheet copper), and is much stronger than plain sheet metal flashing. The design is simple but effective: parallel ribs are rolled at 3-inch intervals along the full width of the flashing, and embossings are rolled between each rib. Because the ribs are rolled rather than stamped, they are of equal thickness with the rest of the flashing and the metal retains its original softness. Because they extend the full width of the flashing, they provide a stiffened counterflashing face that hugs the wall tightly.

The parallel ribs permit a water-tight interlocking joint with 2-inch overlap to form continuous flashing without the use of solder. The ribs also allow water to drain off quickly. These ribs and embossings make an unusually tight bond between mortar and flashing; prevent all lateral movement of the wall and allow for expansion and contraction.

Revere Thru-Wall Flashing is considerably less expensive than the customary patented flashing. Due to its interlocking feature, which makes a water-tight joint without the use of solder, it can be installed for less than plain sheet metal flashing with soldered joints.

Another advantage of this flashing is its availability through the country-wide organization of Revere Distributors. The well-known Cheney Flashing is also available at Revere Distributors and is reduced in price. These two flashings answer your requirements for every type of construction. If you would like more complete details, address our Executive Offices.
INTERIOR BY MASONITE

Leon Shoe Stores, Inc., Tyler, Texas. Interior remodeled with Genuine Masonite Tempered PRESDWOOD. Successful merchandising demands pleasant, attractive surroundings, and Genuine Masonite Tempered PRESDWOOD has furnished such surroundings here. The architect, Shirley Simons; the contractor, George S. Kent.

INTERIOR BY MASONITE means an interior thoroughly up to date. Today there is a demand for cheerful, modern environment. Paneling of Genuine Masonite Tempered PRESDWOOD satisfies this demand. In shop, home, or office, walls of this beautiful material lend an atmosphere of smartness and well-being which will impress a customer, or charm a guest. • Outside, as well as in, Genuine Masonite Tempered PRESDWOOD is as versatile and dependable as it is beautiful. Its marble smoothness is impervious to heat and cold, rain and sun. Antiquated buildings, homes, theaters, restaurants become modern, eye-appealing overnight through exterior and interior remodeling with Genuine Masonite Tempered PRESDWOOD. Its enduring grace makes it the surface for those exacting people who demand beauty combined with economy and dependability. • There are countless other uses for these amazing boards, both inside and out. They come in 1/8", 3/16", and 1/4" thicknesses. Can be installed by regular carpenter with speed and efficiency. PRESDWOOD's warm-brown finish produces an effect beautiful in itself, or it can be varnished, painted or enameled with any standard application. Light, durable, moisture-proof and grainless, it will not warp, chip, split or crack. • Find out how Masonite Tempered PRESDWOOD can help you. Write for a free sample. Masonite Corporation, 111 W. Washington St., Chicago, Ill.
A house is AS YOUNG AS IT'S ARTERIES!!

The arteries of any building are its plumbing or heating conducting system. Upon their perfect operation depends the maintenance of comfort and convenience in living conditions that any home owner or tenant has the right to expect. The handsome and ultra modern bathroom and kitchen fixtures so much in vogue today can only reach their maximum efficiency if the service they render is in keeping with their design. Their smooth, trouble-free operation must not be impaired by rust-stained, slow running water and clogged pipes.

A BUILDING MAY BE YOUNG IN APPEARANCE, BOTH INSIDE AND OUT—BUT WOEFULLY ANCIENT IN ACTUAL CONVENIENCE. IT IS, AFTER ALL, AS YOUNG AS ITS ARTERIES.

A radiator may be the last word in design but if installed with a piping system that in a few short years will rust, leak and clog will gradually fail in its function as an efficient heating unit.

An installation of STREAMLINE Copper Pipe and Fittings will maintain these modern fixtures in perfect working capacity year in and year out. It will put new life in old buildings and add the latest improvement to new structures. This threadless, rust-proof, clog-proof and leak-proof copper system for plumbing or heating is revolutionary and will actually outlast the building itself. It costs very little more than corrodbile materials which sooner or later must be replaced.

Real estate operators are using STREAMLINE Copper Pipe and Fittings both in new homes and the reconditioning of old buildings of all kinds. They find it a distinct help in renting or selling. Building managers are finding it a solution to keeping satisfied tenants.

77% OF ALL SOLDER TYPE FITTINGS INSTALLED LAST YEAR IN BUILDINGS OF EVERY KIND THROUGHOUT THE UNITED STATES WERE STREAMLINE FITTINGS.

The STREAMLINE Fitting is the original solder type fitting and the only one that possesses the valuable proof ring feature constituting VISUAL evidence of a leak-proof, perfectly bonded joint, without an actual pressure test.

May we send you a list of recent prominent STREAMLINE installations?
BOTH UTILITARIAN AND DECORATIVE

The incomparable versatility of extruded Alcoa Aluminum is a fertile source of structural economy and of decorative splendor. Wide, extruded shapes, butted side by side, give this facade texture, brilliance, exceptional advertising value. Doors and windows employ extruded shapes in the usual structural manner. Several thousand standard shapes are available; special shapes may be produced at very reasonable cost. Aluminum Company of America, 1866 Gulf Building, Pittsburgh, Pa.
Announcing

HOFFMAN TALLMADGE

Zoned Controlled Heat

The Hoffman Specialty Company has acquired the selling rights to the Hoffman-Tallmadge System of Zoned Controlled Heat... a revolutionary type of system proved in many large heating installations to produce extraordinary fuel savings and add materially to tenant comfort.

By means of precisely orificed heating units, and accurate control of steam supply to definite heating zones, complete adjustment is provided for the variation in heating requirements due to exposure factors, type of occupancy and altitude of the building. This System does not depend on complex, costly equipment; hence installation and operation are simplicity itself. It is adaptable—at a cost quickly liquidated by fuel savings—either to the remodeling of existing systems or to new installations. Full information, and detailed data on systems now in operation, will be furnished upon request.

HOFFMAN SPECIALTY CO.
DEPT. AF-13, WATERBURY, CONN.

Also Makers of Venting Valves, Traps, Supply Valves and Hoffman Economy Pumps—sold everywhere by leading wholesalers of Heating and Plumbing Equipment.