When pipe rusts or corrodes and fails, there's but one thing to do if operation is to continue—replace the failed pipe. And that costs money—even more than the original installation, because to the cost of material and installation labor must be added the cost of removing the old pipe.

Right there is a prime reason why you should select rust-resisting pipe for service under corrosive conditions—Toncan Copper Molybdenum Iron Pipe—the alloy of refined open hearth iron, copper and molybdenum with the maximum rust-resistance of any ferrous material in its price class.

For more than 27 years, this material has been resisting rust—has established remarkable service records—has demonstrated conclusively that it cuts pipe replacement costs in plumbing and heating lines.

If you would like to know more about this longer-lasting pipe, write for a copy of the booklet, "Pipe for Permanence."
SMALL HOUSES FOR CIVILIZED AMERICANS
Architects Fordyce and Hamby analyze the house for the market immediately below the $4,000 income group... examine space requirements room by room, determine minimum standards... interpret these standards in eight basic floor plans and exteriors... develop a formula whereby the basic floor plans may be built with 100 different exteriors—all presented in full color.

BUILDING AND LOAN OFFICES
Modern architecture receives the stamp of approval from lending financiers in this Building and Loan building for a small New Jersey community.

BEVERLY THEATER
A small Chicago cinema sets new standards in forceful architectural showmanship without crossing the line from Modern to Modernistic.

EAST LIBERTY PRESBYTERIAN CHURCH
Eight pages of photographs, plans and text present 1936's most significant contribution to Gothic architecture in America—Cram and Ferguson start and finish this great edifice.

REMINGTON RAND BUILDING
Holabird and Root design a modern building for the nation's capital with large glass areas for the ground floor shops and display floors above.

EMERGENCY RELIEF BUILDING
First published example of a newcomer among American buildings, modern in style, with plywood exterior, built at a total cost of $12,428—including work relief labor.

BUILDING MONEY
Senator Wagner's Housing Bill heads the list of building legislation on the Congressional docket (64)... Washington moves of the month (66)... Comparative cost data for Manhattan's First Houses and Knickerbocker Village (67)... Remodeling for Profit—first of a new series of remodeling case histories (69)... How New York's Mortgage Conference is attempting to stem overbuilding (79)... What has happened to PWA's four billion (77)... Investors' Syndicate—the men and their policy (78)... Building Chartistics (79)... What happened when aviation manufacturer Boeing went into the subdivision business (80).

DEPARTMENTS (in front advertising section)

THE MONTH IN BUILDING
A quick summary of front page building news with significant figures on building's volume, personalities in the news, the flow of mortgage money, moves on the Washington front.

LETTERS
Houses under $5,000... Architect Edgar I. Williams advocates open competitions for Public Buildings.

FORUM OF EVENTS
Cleveland's 1936 Great Lakes Exposition names its committee of architects... Gilbert Rohde launches a potential American Bauhaus... London's $6,250,000 auditorium designed by U. S. architects, built by U. S. contractors.

PRODUCTS AND PRACTICE
Invisible glass makes its debut in American store windows.

BOOKS
Japan anticipates Modern Architecture by 300 years (Das Japanische Wolinhaus).

ARCHITECTURAL FORUM
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THE MONTH IN BUILDING

LONG TERM LOANS. Tired to death of hopping from one liquid asset to the next, many a U. S. commercial bank has lately been casting eyes at long term investments, and thinking seriously about increasing its real estate loans. Last month Robert V. Fleming, newly elected president of the American Bankers Association, gave official sanction to these sheep's eyes when, speaking directly to his commercial banking colleagues, he singled out real estate as the best long-term investment.

Alluding to the Banking Act of 1933, which made this collateral acceptable with Federal Reserve banks, he said: "I do believe that with the broadened facilities now available through the Federal Reserve System and the fact that public confidence in the safety of the banks has now been restored, there is no longer any need for banks maintaining a high percentage of liquidity, and bankers can adopt a broader long-range viewpoint in dealing with their customers. . . . At present we cannot depend upon strictly commercial loans as the main source of earnings in our commercial banks."

BROWN'S LEAD. Nobody realizes more clearly than Johns-Manville's aggressive young President Lewis H. Brown just how badly the building industry has been burking its own chances for recovery. While the food, clothing, and automotive industries have been aggressively snaring their quota of the householder's dollar, the building industry has been sitting back, like some awkward and gangling child, unable or unwilling to help itself.

On his return from the American Bankers' Convention at New Orleans last November President Brown sat down and worked out a plan which he hoped would hoist industry onto the Recovery bandwagon at least in time to slide into the rumble seat. A brilliant merchantis who received his training at the hard school of Montgomery Ward, and whose modernization campaign of a year ago was one of the bright spots of a dull year, President Brown conceived as smart a stroke of promotion as building has seen.

Last month in a broadside to the trade, he announced plans for a nation-wide convention of the building industry to be held not in any mammoth convention hall but over a coast-to-coast broadcast.

Smartly timed to coincide with Johns-Manville's annual sales meeting, the broadcast will emanate from Manhattan's Radio City over NBC.

Forum-wise, the broadcast will stress coordination and merchandising methods, will address itself to building material dealers, contractors, builders and architects. Principal speakers will be President George LaPointe of the National Retail Lumber Dealers Association, Federal Housing Administrator Stewart MacDonald, and President Robert V. Fleming of the American Bankers Association, President Stephen F. Voorhees of the American Institute of Architects, and Johns-Manville's Brown. To snare laggards Commentator Edwin C. Hill will be imported as master of ceremonies, and Kate Smith as intermittent entertainer. The date: January 13, at 11 a.m., E.S.T.

REMODELING PROFIT. A rule of-thumb among lending institutions has been that new rents must equal at least one-fifth the cost of renovating a property; else renovation is not worthwhile. The rule is based upon the possibility that the property will be salable within five years at something approaching its original mortgage value.

This was a rule born at the first of the Depression among far-seeing bankers. But its definitive five-year character does not hold today. For sales which allow institutions the full amount of their investments have been substantially better in the last few months—especially on property which has easily lent itself to remodeling. Result: over the U. S., banks are doing less direct investing, more financing for remodeling.

The amount which one should spend upon remodeling is less and less held down by hard-and-fast rules. Builders are ready to risk more, and bankers to rely less on dogma than on common sense in supplying the needed cash. Rightly now, buildings are being remodeled, where circumstances warrant, at costs sometimes approaching those of building afresh. Building permit figures show an increase in the average cost per remodeling job from $556 in 1932 to $721 for the first eight months of 1935.

Lewis H. Brown

President Robert V. Fleming of the American Bankers Association, President Stephen F. Voorhees of the American Institute of Architects, and Johns-Manville's Brown. To snare laggards Commentator Edwin C. Hill will be imported as master of ceremonies, and Kate Smith as intermittent entertainer. The date: January 13, at 11 a.m., E.S.T.

CO-RAILER'S DEATH. As modestly as he lived, Mantis James Van Sweringen, gray-haired, pugly elder brother of Oris James Van Sweringen, died last month.

Together the brothers were rulers of a vast empire of realty, and, less surely, of railroads. In schooldays Mantis made the empire of realty, and, less surely, of railroad. Together the brothers were rulers of a vast empire of realty, and, less surely, of railroad.

Sick, "M. J." stayed at home when recently the brothers salvaged the management of their properties at an auction signalizing the loss of a $85,000,000 Morgan loan. Last month physicians marked down "M. J.'s" death as due to "mental and emotional strain." Plans not only to revive their railroad enterprises, but, for the first time in years, intensively to enter the field of real estate development were already under way. With the death last July of John J. Bernet, their trusted railroad adviser, the Van Sweringens had picked George Arnold, for 35 years head of their realty enterprises, for right-hand aid in reshaping their affairs. And there, back at beginnings, the brothers stood last month.

Despite the publicity that their railroad activities received, the Van Sweringens' greatest achievement will always be their real estate empire in Cleveland. Even today the residential reality which they platted and, with careful restrictions, sold, is appraised at $82,000,000. Add to this their 92-story Cleveland Terminal Tower, and the other buildings they projected, and their dreams have had a $100,000,000 substantiation. As the one who planned this empire, "M. J." lived the kind of life which must have proved immensely satisfying to a conscientious subdivider. He saw a city grow according to his pattern, the best he could devise in his rushing, acquisitive times.
All of which goes to show that remodeling is becoming a much more exciting business. With a multiplicity of jobs in process, The Forum turns in this issue (p. 69) to the page-by-page method of studying the best income-property remodeling work today. Rules or no rules as to the cost of these jobs, one criterion will be demanded in the interest of good economics: the remodeler must profit.

FHFB VERDICT. To spread wide as possible the Federal loan and savings program, the Home Owners' Loan Act of 1933 contained under Section 5 a permissive clause enabling State savings and loan associations to adopt Federal charters without obtaining the permission of their States. The constitutionality of this honey-pot was not tested until last month when the case of three Wisconsin saving and loan associations versus the Wisconsin Banking Commission reached the U. S. Supreme Court on appeal from the State Supreme Court. Point at law was whether the permission of the State was required for conversion from State to Federal charter, Section 5 notwithstanding.

Over-stating the defense of "general welfare," liberal Justice Cardozo declared in the unanimous opinion of the Court: "The Home Owners' Loan Act, to the extent that it permits the conversion of State Associations into Federal ones in contravention to the laws of the place of their creation, is an unconstitutional encroachment upon the reserved rights of the State."

Same day FHFB hastened to point out that the ruling had small effect upon the 1,005 Federal savings and loan associations in the U. S. Thirty-seven States have already passed legislation specifically permitting such conversion, and of the remaining eleven Wisconsin was the only State so far to oppose the implications of Section 5.

HOME SHOWS. The Federal Housing Administration is doing everything short of importing a few of Emperor Selassie's war drums to thump housing into the U. S. public consciousness. For the National Housing Shows which FHA and the Manufacturers' Housing Display Council are seeking to organize throughout the country many a gadget will be made available. Chief among these is a "talking tower" display piece which, besides providing a running fire of talk about the Single Mortgage System, instructions say, "will feature photographs or models of houses that can be built under the Federal Housing plan, and space will be available [sic] where plans and specifications of these houses can be distributed."

The local architect, if consulted about it, will most certainly object to this. He may take some consolation later, however, in the fact that under Instruction 11 the sponsors advise the appointment of a salaried Architectural Director for every show.

Despite this and the minor disappointment incidental to the Council's failure to carry out its originally projected tour by streamlined train, there is every indication that the shows will be successes. First to be authorized by Chairman Crevisinet, whom the Crane Company has loaned the FHA to head the displays, was Baltimore's show, opening January 4. The next will open on the fifteenth in connection with the second edition of San Diego's fair. Others will follow in Kansas City, Philadelphia, Buffalo, Houston, Oakland, Miami, Minneapolis, Louisville, Milwaukee, Indianapolis, Boston, and in any other cities where the Council finds realtors, architects, lending institutions and others sufficiently responsive and willing to lend a hand.

FEDERATION PATCH. Badly scared by the sight of schism at the American Federation of Labor's convention at Atlantic City last October, old-line President William Green has been industriously mending his fences ever since. Last month he was able to point with pontifical pride to what he evidently regarded as a major piece of corralling. The interminable wrangle within the Building Trades Department of the Federation, so costly to builder and worker alike, had been patched up—after a fashion.

Root of the trouble has been the division of work between the countless, overlapping unions within the Building Trade group. Time and bitterness have so refined this division that today it is nearly impossible to tell who may lay a brick.

Under an agreement which President Green has just effected between the nineteen craft unions at Washington, all jurisdictional disputes will be handed to a referee, who, in the event of further disagreement, will pass them on to a Federal District Court. This will have the effect of moving the sphere of battle from A. F. of L. offices to the courts—a step which should accomplish little more than add a certain dignity to a costly debate.

However the conference did result in one compromise which seemed practical. A more immediate dispute within the Building Trade Department was finally settled when 275,000 seeding carpenters, brick-layers and electricians agreed to return to the jurisdiction of the Department. Huffed by their lack of representation on the Construction Code back in NIRA days, this group had walked out of the Department, and while still retaining their A. F. of L. connections, had set up offices and jurisdictions of their own 20 months ago. Under the latest agreement engineered by President Green, they will return to the fold, where referees will decide whether potent seceding President M. J. McDonough or official President J. W. Williams will head the patched-up Department.

VOLUME. Reaching a height of 878,194,000 in November (see chart, below) building permits settled for the eighth month to hold to post-Depression monthly totals exceeding any previous monthly totals over the past five years. Winter took the figures down 89,000,000 below the twin record figures of 878,000,000 set in August and October. With the November figure, 1935 permits reached a total of 873,289,000. Adding 870,000,000 to this for December, a total of 883,300,000 may be estimated for 1935. This falls about halfway between the totals for 1931 and 1932, and is one-fifth of the figure for the peak year, 1925.
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A critical comparison of heating methods offered today will reveal definite superiorities in B & G Triple Duty Heating—a hot water system which, because of mechanically circulated, high temperature water, uses piping and radiation no larger than that required for steam.

When heat is needed, this system furnishes an almost instantaneous supply of hot water to the radiators. Its controls are so flexible and sensitive that a uniform room temperature is maintained regardless of sudden weather changes—obviously saving fuel as well as promoting comfort. In addition, year-round domestic hot water is provided at a saving as high as 75%.

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Complete literature and design data is available upon request—or our representative will gladly call. Write to the Bell & Gossett Company, 3000 Wallace St., Chicago.
Concerning Permanence

Nothing completely eludes the stalking steps of time. Permanence is relative. We moderns are too familiar with the inexorable march of obsolescence to approach all design, all construction, with the blithe expectation that it will stand forever. What measure then shall we use when we speak of permanence? How long is permanent? Aluminum is a young metal, as metals go, obviously unable to marshal the experience of centuries out of a comparative youth of only fifty years of commercial availability.

The expectation of long life for architectural details of Aluminum is just plain common sense, based on good chemistry, and substantiated by laboratory test. Moreover, every year accumulates the proof of experience. For instance, before there was any commercial Aluminum, a 100-ounce cap, cast from Aluminum that did not have the benefit of modern technical control, was set on the tip of the Washington Monument. That was in 1884. Fifty years later, in 1934, the cap was examined by a group of scientists, and was found to be so little affected by a half-century of exposure that shallow engraving on its faces was perfectly legible. The cap is still in place, a symbol of permanence.

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Yet on top of all these advantages, Dutch Boy Lead Mixing Oil gives a white-lead "flat" at a reduced cost per gallon.
LETTERS

Tugwelltown Materials

Forum: Your November issue under the caption “Tugwelltown”: “In Berwin Heights, Md., 3,000 homes are to be built of semi-pre-fabricated concrete blocks for $5,500,000 . . .” I enclose for your information a mimeographed statement received from the Rural Resettlement Administration: “The Resettlement Administration announced today that it would not be limited to any type of materials in the construction of its low-cost housing projects. It was stated that all materials normally employed in housing and building construction will be used on Resettlement projects. Materials will be chosen solely on the bases of economy, efficiency, and durability.”

JORDAN A. PUGH
Structural Clay Products, Inc.
Washington, D. C.

FHA Guarantee Deadline


C. W. DREEPER
Federal Housing Administration
Washington, D. C.

Smoaller Homes

Forum: The great majority of people who would like to build a home are in the $8,000 to $5,000 class . . . Personally I am interested in a home to cost about $4,000 exclusive of the lot. Houses in that class were very few in the October issue which I bought because of an advertisement which specified “Small Homes.” My idea of a “small” home is not one costing above $10,000. Certainly it doesn’t take a great deal of ability to observe that for every man who has more than $10,000 to spend there are hundreds who could manage $5,000.

R. H. NORMAN
Fairmont, W. Va.

Forum: I believe that more emphasis should be placed in the building of homes costing from $3,500 to $6,000. (When I say homes, I do not mean “pill boxes.”) Because of the following reasons:
1. In 1929, our banner year, 80 per cent of this country were earning $2,000 per year or less.
2. In 1934, only some 320,000 filed income tax reports indicating earnings of $5,000 or more. [In 1934, 419,481 persons reported incomes of $5,000 or more.—Ed.]
3. The old age pensions provide, I believe, about $145 per month or $1,080 a year per couple. (Note: Many spend a lifetime paying for their homes and then upon retirement are unable to maintain it on their reduced incomes.)
4. The people in the lower income brackets ($2,000 or less) are the ones who have the large families, need homes, and represent the buying power of the country.

ROGER A. ZOEISCH
Boston, Mass.

In Favor of Open Competitions

Forum: In approaching the subject of Public Buildings, I make three assumptions: 1. That the buildings should be built for their utmost usefulness; 2. That the design of the building—its architectural expression—is as important to civic pride and the common welfare as its usefulness; 3. That for Public Buildings the architectural work belongs to the community and not to any group however selected.

Any architect who has an office is a potential selection for the job. The criterion of his ability is his design, the selection of which can be determined by a professional architectural jury in a perfectly practical manner.

This theory is in direct opposition to one which assumes that only by the selection of an architect first can good buildings be brought into being. In the latter case there is first the selection of the architect on the basis of past performance, political preference, or friendly relationships. . . . [This] can bring out good buildings—it can give us the worst . . . . Who, with any perspective, but knows that even the best architects, painters, sculptors, perform miserably at times . . . . Furthermore, the segregation of talent by whatever means, if carried to its ultimate result in the appointment of one or two men to do all the public work.

If there is a cause for the position we architects find ourselves in with the public, it is, I think, because we are ashamed to be called dreamers. We want the public to think us hard-boiled and practical. Any one of us can think of the magnificent stupidities of leather-lunged practical men we have known who dominated some public or architectural monstrosities. If we are not practical we are not architects. It is high time that we again recognize that imagination is one of our most valuable assets and that by its practical demonstration almost alone can we fire those who should look to us for guidance in our chosen field.

The selection of an architect for a Public Building by his design can be accomplished only through competition. The ultimate of this method would be open competition. Is this so stupid? Assume that this was done in New York City and the problem was one of not too large or difficult a nature. Perhaps a thousand would compete the first time. The jury would eliminate nine hundred the first day. By dint of much labor and suffering a final selection would be made. Someone, of course, would figure the man hours spent by the competitors and come to conclusions as to the cost to the profession and fail to put in the other side of the ledger the profit to the public or even the competitors. That such stupid calculation would be made goes without saying.

The final selection might be a young architect who never did more than a small house. It is entirely conceivable, even probable, that he would not have the experience to carry the work to completion through the ramifications of office management, technical difficulties, and municipal regulations. Does any practical man assume that this problem can not be successfully solved by the architect with an experienced office or by some other means of guidance?

We Americans like competition; a prize fight is front page stuff. Perhaps architectural competition can’t make the front pages but it is conceivable that it might. The public might become more interested in architecture. Architects themselves might conceivably discuss the merits of the various architectural designs and agree that a reasonably fair selection had been made. The younger men would feel that they had a chance to arrive and might add their enthusiasm to the profession instead of harboring, as I think they do, a feeling that the real jobs are “fixed.” It would put the older men on their fettle which is good for the profession. It might bring forth better Public Buildings.

EDGAR J. WILLIAMS
New York, N. Y.

Mr. Williams, vice president of New York City’s Architectural League, will not have his way. Last month Mayor Fiorello La Guardia announced that henceforth in New York City all municipal projects will be executed only by architects chosen from a list of fifty designated firms, no one of which will be given commissions involving more than $1,000,000 in any one year.—Ed.
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FAIRS

Winter is a time for preparing for fairs; summer is the time for holding them. This winter Paris is busy making plans for its big 1937 exposition, London is preparing to hold at least three big shows in that same year; San Diego, taking a cue from Chicago, is lifting its face for an encore performance. Texas will hold a fair this summer. Last month two more fairs made news.

Cleveland was industriously at work readying a three-month Great Lakes Exposition to take place this summer. Temporary chairman is civic-minded, musical Dudley S. Blossom who sometimes finds time to enjoy himself privately at the "Hangar," his large indoor tennis court and swimming pool. Named head of a committee of architects to supervise building was Abram Garfield, son of the 20th U. S. President, who has been practicing architecture in Cleveland since 1898. Serving with him are Architects J. Byers Hays, Frank B. Meade, F. R. Walker, Antonio Dinardo. The exhibition will dramatize Great Lakes shipping, iron, Northwestern ore, coal and steel—the long, historic businesses of the Great Lakes region from which have issued almost all the important fortunes in the U. S. Situated on land east of Cleveland's big stadium, the exposition will also include the enormous Public Hall and the new Under Ground Exposition Hall. In place of Chicago's successful sky-ride, Cleveland will offer a comet ride. What architectural merit the exposition will be able to boast was up last month to Mr. Garfield and his committee.

New York was also bothered about architectural merit although its fair will not take place until 1939. Because it feared that George McAneny, president of the Fair, and the City Park Department which owns the fair grounds would build "a Parthenon on a Flushing, Long Island, swamp" a group of architects and designers met last month in Manhattan to protest and advise. Philip Youtz, director of the Brooklyn Museum, was afraid that the New York fair would become "the Century of Retraction Fair." Architect Ralph Walker complained of the "planlessness" of the Chicago Fair. Industrial Designer Walter Dorwin Teague pointed out that fairs "were not a matter of architecture but of sore feet." To Critic Lewis Mumford went the palms of the evening for a speech which pointed out that the object of the fair, not its architecture, should for the moment be New York's chief concern. He explained, would have to be authorized by legislative action, would not have to continue more than two years. But who the architects would be and where the site remained anybody's random guess.

Harvey Wiley Corbett, who led the objectors could not attend, came a message that he would confer with any committee the protesting architects elected. He will confer with Harvey Wiley Corbett, chairman; Lewis Mumford, Walter Dorwin Teague, I. Woodner Silverman, Philip Youtz, Gilbert Rohde, Henry Wright, Michael M. Hare whose original idea it was to hold a dissenters' meeting.

Another project that had quietly been troubling Manhattan architects for some time came to light last month when Mayor Fiorello La Guardia publicly announced his desire to build a big municipal center which would house art exhibits and perhaps tempt the Metropolitan Opera House from its ancient home, the Philharmonic Orchestra from the acoustically almost perfect Carnegie Hall, and the Museum of Modern Art from its present cramped quarters. Civic leaders like Paul D. Cravath, chairman of the Metropolitan's board of directors, Jonas Lie, president of the National Academy of Design, David Mannes of the David Mannes Music School and Baritone Lawrence Tibbett immediately gave enthusiastic approval. The Mayor suggested a financing scheme of a five cent levy on every $100 of real estate taxes paid to the city. Such a levy, he explained, would have to be authorized by legislative action, would not have to continue more than two years. But who the architects would be and where the site remained anybody's random guess.

AMERICAN BAUHAUS

Launched last month in Manhattan, under the egs of WPA, was a school of design which, since its first announcement, has been attracting the attention of U. S. architects because it claimed to be patterned after Gropius' famed Bauhaus. Those who examined the school last month agreed that Rohde, the school's director, explained his aims: "We already have in this country many excellent schools of fine arts, a few good ones in graphic art, and many good trade schools, but a need which at this moment remains almost entirely unfulfilled is a school which coordinates training in esthetics, products, machine fabrication and merchandising." The school offers courses in design, which Director Rohde will not only stress but teach personally, and instruction in textiles, graphic art, painting, sculpture, metal, wood, pottery and photography. Ruth Reeves, who last year made many a manufacturer conscious of Guatemalan design, will teach textiles.

Whether Mr. Rohde will manage to endow his school with an esprit de corps comparable to that of the Bauhaus in its good days was a question which could not, of course, be answered last month. One thing might mitigate against him: the widespread interest in industrial design in the U. S. has created not only many a designer's workshop and drafting room but is also forcing major colleges to consider the subject as part of their curricula.

(Continued on page 34)
Vaulted Ceilings of Guastavino Timbre Tile Construction with soffit of AKOUSTOLITH sound absorbing Artificial Stone. Side walls to level of Triforium arches lined with similar AKOUSTOLITH in large size units to simulate stone ashlar.

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Adequacy in electrical wiring is essential now as it never has been before. To provide this adequacy General Electric engineers here developed the Radial Wiring System. Its design is new to home wiring. It is easy to specify and to install. And most important, its arrangement of circuits, its copper sizes, its outlets and its flexibility provide complete adequacy.

This modern wiring system gives assurance that home builders will be more than satisfied with the performance of their electrical equipment. For full details see Sweet's 1936 Catalog, the American Architect Time Saver Standards or write Section CDW-911, Appliance and Mdse. Dept., General Electric Co., Bridgeport, Conn.

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A wide variety of apparatus for every application in Air Conditioning . . . Heating . . . Cooling . . . Ventilating. A nation-wide organization devoted to just this one line of business!

JOHNSON SERVICE COMPANY . Milwaukee, Wis. and Principal Cities
Every shop owner depends upon his show windows to help sell his merchandise; to that end he installs the best plate glass he can afford. That this glass is so good a reflector as frequently to blot out entire displays with images of passers-by and buildings across the street is a fact that has exasperated more than one merchant. Particularly bitter is the pill the automobile dealer must swallow, since the major portion of what his expensive windows reflect consists of competitive products.

Many expedients have been tried to eliminate this bane of sidewalk merchandising. One New York restaurant has installed a window which is inclined so that it does not show reflections of passers-by; unless a heavy awning is extended over the window, however, it shows a reflection of the sky, which, for purposes of visibility, is even worse. The commonest method is to install lighting fixtures of sufficient intensity to minimize the effect of the reflections; there is nothing cheap about this method, so the general run of stores just put in a window and hope for the best.

It is a well-known fact to anyone familiar with the most elementary principles of physics that a reflecting surface can be so curved that all light will be reflected to a point where it is not visible to the observer. Several such windows have been designed and installed. It remained for an English inventor to work out the problem completely and to put the result into production. After several years of successful use of these windows in England, an American company, known as the Invisible Glass Company of America, was formed. Up to date three installations have been made.

As shown by the drawing, the window consists of two sections of plate glass, curved according to a carefully worked-out drawing. All light striking the window is reflected upwards, or down into a trough lined with black glass. So perfectly is the window designed that wherever it has been installed crowds have gathered, arguing whether there was a window or not, settling the question only by reaching in to find out. The most striking installation is the one in the store of Marcus & Co., jewelers, whose minute windows contain small fortunes in precious stones apparently unprotected by the usual sheet of glass.

In spite of its apparently fragile construction the Invisible Glass window has the same insurance rate for breakage as the conventional type. It cannot be used with equal success for all types of show windows, since it cuts down to a considerable extent on the display space. Most store windows can, however, be readily altered to accommodate the new type window.

The illustrations show the remarkable contrast between the invisible glass window and the type commonly used in shops and showrooms.

(Continued on page 40)
This Heater of

**rustless EVERDUR** will save money

for the taxpayers of Illinois

---

In the Supreme Court Building at Springfield, Illinois, the newly installed storage heater will provide a plentiful supply of rust-free hot water *indefinately*. It will cost less to own than the one of rustable metal it replaced. For the shell of the new heater is made of welded Everdur Metal. It *cannot* rust.

Everdur, a copper-silicon alloy, combines rust-immunity, the strength of medium carbon steel and ready weldability—at moderate cost. No wonder Everdur is enjoying ever-growing acceptance as the ideal material for durable, rustless water tanks of every description—from domestic range boilers to giant storage heaters. Whether for a hotel, laundry, hospital, textile plant, school or brewery, Everdur equipment is available from leading manufacturers.

Equally logical and satisfactory is the use of Everdur for many other applications. Among them: air-conditioning equipment, masonry anchors, drains and ducts, electrical conduit and smoke washers. Additional data on any use of Everdur gladly sent on request.

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**EVERDUR METAL for TANKS**
3 Facts about house paint every Architect and Maintenance Man should know

1. What Causes Paint Failures?
   Good paint must hold tenaciously to the surface it is applied to. Otherwise it will crack and peel. Pure White Lead in oil wins in competitive paint tests because white lead is a chemically active pigment. Microphotograph above shows why Pure White Lead in Oil sticks like glue. Note anchorage of the oil in the wood. White Lead in Oil actually becomes an integral part of the wood — an integral part of former paint films. It does not crack or peel off. Wears only by a slow, even chalking process.

2. What Gives a Paint Long Life?
   A scientific camera shows why Pure White Lead gives longer service than any other paint known. White lead is a chemically active pigment. See how particles (a) "blossom out" when linseed oil is added (b). White Lead and oil become an elastic, homogeneous film that remains soft and pliable — does not crack when wood shrinks or stretches. When paint pigments are inert, there is no such blending of pigment and oil. The paint film is brittle — it cracks and peels.

3. Master Painters Choose White Lead
   "What kind of paint did you use on your own home the last time you painted it?"
   To this question, in an impartial survey, 86% of Master Painters answered "Pure White Lead in Oil." Their choice is significant. Their selection of Pure White Lead — the paint with chemically active pigment — was based on first-hand knowledge that white lead wears longer — is more economical than any other kind of paint.

Eagle pure WHITE LEAD

THE EAGLE-PICHER LEAD COMPANY, CINCINNATI, OHIO

CHOICE OF GOOD PAINTERS SINCE 1843

JANUARY - 1936
When the Architect Performs an Operation

...he can be confident of success if he utilizes Monel Metal!

The Architect is sure of a successful outcome when he specifies Monel Metal equipment, whether it's a simple "transfusion" adding one piece of equipment, or a major operation such as the replacement of an entire kitchen.

While the pictures here show how Monel Metal is used to modernize hospital food service departments, it has high standing in every department: clinical, operating rooms, drug dispensers, and laundries.

For when hospital departments are modernized with Monel Metal they stay modern.

Monel Metal has no surface coating to crack, chip, or wear off. It is solid through and through and retains its smooth gleaming appearance permanently.

Moreover Monel Metal is rust proof and resistant to corrosion. Being stronger than structural steel it does not mar under hard use.

Monel Metal has won the everlasting praise of hospitals for years past... and many an Architect has won a warm spot in the hearts of hospital personnel for providing it.

Write for your copy of our recently published booklets "The Selection of Food Service Equipment" and "The Selection of Hospital Equipment." They are profusely illustrated with actual photographs of many different installations of Monel Metal equipment, and will be helpful, we think, when writing your specifications.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET NEW YORK, N. Y.

Monel Metal

The Architectural Forum
When in 1920 Le Corbusier let forth the first of the series of blasts that were heard around the world, a number of nameless Japanese architects must have stirred in their 400-year-old graves and chuckled. What Le Corbusier had to say, and Wright, Loos, Behrens, Sant' Elia, and others before him, was all very well, and it was sadly needed in a lethargic world engaged in the apathetic rehashing of the decayed remnants of what had once been architecture, but the Japanese had beaten him to it, and by no dubious margin.

The Japanese house has a number of characteristics which are of particular interest to the modern architect. To consider some of them: 1—house and garden are merged into a single living unit, 2—the plan is of the open type, with movable partitions, 3—door and window openings are numerous and large, 4—furniture is largely built-in, 5—natural materials are used honestly, 6—the design not only expresses the construction, but it is the construction, 7—the house employs standardized methods of construction, and uses the mat size as a module upon which the plan is based. These seven points sum up most of what is important in the credo of the modern architect.

That the Japanese house of four and more centuries ago should bear out in so extraordinary a fashion the cardinal principles of modern architecture is no indication of a miraculous prescience on the part of 15th and 16th century builders: the accurate reflection of a way of living, strange beyond our comprehension, perhaps, and influenced, as all architecture is influenced, by climate, customs, materials, the Japanese house does not differ a whit from other organic architecture of any time or place.

The Japanese have a love for nature beside which our own seems rather shallow; their prints are full of people strolling in the rain; their houses can be opened completely to the out of doors; their gardens are indispensable parts of a scheme of life: no house lacks a garden. Natural materials are used with taste and discrimination, and the arrangement of flowers is an art. The garden is not an imitation of nature like the English garden: it is rather a synthesis of the entire landscape. A pool, rocks, a little hill, some evergreens, these are a world in miniature, and such a concept gives even the smallest plot of ground an importance all out of proportion to its size. Small wonder, then, that the great landscape gardeners were priests as well:

The evolution of the Japanese house is an interesting story. Originally it was a gable roof on posts over a raised wooden floor, with straw mats for comfort. Even at this early date rooms were created by the use of movable partitions. Chinese influence came with the Buddhist priests around 552, and buildings similar to those in China were erected. The heavy walls and small openings never suited the Japanese, however, and by 1000 a style had emerged that was characteristically their own, but with visible traces of the Chinese influence. Wood was the standard material, and unit plans were developed. The plans were symmetrical, and in the case of the aristocracy, included tremendous gardens. The rise of the warrior class led to greater simplification, and by 1467, after the burning of Kyoto, the house existed in its present form, unsymmetrical, with paper windows, built-in cupboards, and mats spread uniformly in all the rooms. The introduction of tea led to the development of a new room, often a separate pavilion, and the masters of tea ceremony became the architects of these as well. The 17th century shows class distinctions in full force, with stringent laws to determine the type, size, and furnishings of the house a person in a given class might build. With the rise of the bourgeoise this standardization increased and became a tradition. The advent of Western culture in the 19th century shook the country to its foundations, and there began that phenomenal transition whose implications are only now becoming apparent. The house at the present time divides into three types: traditional, mixed, and European. The first is still the dominating style.

The author of this book, Tetsuro Yoshida, is a young architect, well-known in his country, and in something less than two hundred pages he has compressed one of the most exhaustive studies of the Japanese house ever published. All the influences which molded the house form, its historical evolution, a study of materials, construction, landscaping, ventilation, heating, plumbing, decoration, city planning and housing problems are gone into with a thoroughness which, if not Japanese, is most certainly German. Excellent and numerous illustrations show the house, past and present, its garden, structural details, plan, and interior treatment. In spite of the fact that the German text will be unintelligible to many, its illustrations alone make it a complete and most valuable document.
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Today's house is a machine for living
AND TELEPHONE CONVENIENCE
MAKES IT MUCH MORE LIVABLE

Built-in conduit and four outlets provide for telephone convenience in the residence of Mrs. J. H. Nash, 987 Creston Road, Berkeley, Cal. Mark Daniels, Architect.

NOT NEW, but given new significance by today's push buttons and thermostats, is the concept of home as a machine-to-be-lived-in. And telephone convenience is very properly an important part of it.

Pre-planned in the blue prints, included in walls and floors during construction, telephone conduit helps make any home a smoother running machine. It permits outlets to be placed at strategic, step-saving points. It prevents exposed wiring and certain types of service interruptions.

Outlets may be installed in excess of immediate needs to provide for future requirements. Then telephones can be moved without piercing walls or woodwork—and portable instruments plugged into sickroom, guest room, game room or other "occasional" quarters.

Your telephone company will be glad to help you develop efficient, economical conduit layouts on any of your projects. Just call the Business Office and ask for "Architects' and Builders' Service." There is no charge, no obligation.

* For further information on Bell System telephone services and equipment, see Sweet's catalogue.

JANUARY - 1936
The end of storage space problems

THE CRANE CORONADA

- All Steel Cabinet, For Ample Storage
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- Chromium Towel Bars

Porcelain enameled cast-iron lavatory with rectangular basin. Cabinet all of steel with baked enamel finish, side hinged doors, chromium towel bars, and exclusive shelf-in-door feature which provides excellent accommodation for toiletries. Similar to the LAVINET is the COLORADO CABELO cabinet lavatory—a COLORADO wall-type lavatory with a steel cabinet base. Single door with shelf-in-door feature—LAVINET 20" x 24". CABELO 17" x 21".

The CORONADA LAVINET is Crane's answer to the perplexing lack of storage space in small bathrooms and lavatories, particularly in remodeling jobs, where space usually is at a premium.

For the architect and the building manager, the LAVINET solves many problems. Clients and tenants clamoring for lavatory and bathroom storage space can have all they want—practically without cost. For the LAVINET—while beautifully designed and made—is inexpensive. No walls to be opened up, no corners to be sacrificed. The result is a bathroom unmarred by cluttered-up shelves and closets, always neat and tidy.

Typical of Crane Co. ingenuity in providing plumbing fixtures specifically to fill a need, the LAVINET likewise represents the basic quality which distinguishes every bath, lavatory or closet bearing the Crane stamp. The public knows the name as the finest in plumbing. The plumbing and heating contractor knows the thorough-going service that backs it up. To your clients and tenants, you can offer Crane fixtures with complete assurance that regardless of their moderate cost, you can offer no better.

CRANE QUALITY IN EVERY HIDDEN FITTING

Look at a Crane bathroom through an X-Ray and you find Crane quality in every hidden fitting. No matter how fine the fixtures appear, it takes Crane quality valves, fittings and brass goods—the "working parts" behind the scenes—to assure dependable service and long life at low cost. It is important to include pipe, valves and fittings in your specifications.

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PLUMBING AND HEATING MATERIALS

THE ARCHITECTURAL FORUM

28
THE last decade has seen almost incredible advances in the electrification of business and industry. You have merely to look around your own office with its electrical devices to realize this. And as a result of this expansion in the use of electricity, many buildings, although structurally sound and relatively new, are fast approaching the end of their profitable life... because their floor systems will not permit them to meet the growing demand for increased electrical facilities.

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The facts about the Robertson Steel Floor System are fully dealt with in our new brochure "New Life for Buildings" and in our special technical bulletin. We are confident you will find this literature of vital interest to you right now. Write for free copies. H. H. Robertson Company, Pittsburgh, Pa.
ALL THE BEAUTY OF WOOD
PLUS...
SAFETY FIRE-PROOF—ROT-PROOF
TERMITE-PROOF
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ECONOMY NO PAINT OR UPKEEP EXPENSE REQUIRED

RUBEROID presents exteriors for model homes that architects and builders have long awaited. Charming cypress-textured asbestos-cement shingles for roofs and sidewalls have been developed, that are long-lived, fire-proof, rot-proof and termite-defying. No stain or paint is required to prolong their life. Their trade name is Eternit Timbertex.

Both Timbertex roofing and siding shingles faithfully reproduce the choicest designs of wood graining in popular "wood" colors. The color pigments are built-in—an integral part of the material.

Eternit Timbertex Shingles are made 8x16 inches, tapered for the American method of application, or in the 16x16 inch size for Dutch Lap

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ONE FAIR IN SEARCH OF AN AUTHOR

The world is being treated to a frenzy of Fairs. Paris, Vienna, Rome, Madrid, Stockholm, almost any city which boasts a railroad terminal, either recently has held or is now planning a Fair. Not to be outdone in the art of exploitation which the United States has long claimed for its very own, America, starting with A Century of Progress, wearily plods its way through a panorama of terrestrial and celestial wonders, colonnades, terraces, moving gears, neon tubes, hot dogs, and quivering ladies. All of which is to reach its climax with a Fair to end all Fairs in New York, 1939.

Fairs have been reduced to formula. And the formula is the glorification of the mechanical age, with a few side shows thrown in for sugar.

With three short years in which to produce his Fair to end all Fairs, Father Knickerbocker rubs his eyes and gazes wistfully at a large tract of land in Flushing, an awesome committee of notables, a large assortment of hopeful architects, industrial designers, landscapers, town planners and concessioners and prepares to go to work.

If there ever was a time to examine the whole question of Fairs—why Fairs are held, what Fairs accomplish, what has made the great ones great, what has made the poor ones awful, what does the current formula leave to be desired—this is the time.

At the moment the New York Fair has no theme. Its announced excuse, the 150th Anniversary of the inauguration of George Washington, etc., will undoubtedly furnish a suitable vehicle for a tableau on the opening day, and then very properly be forgotten. It needs a formula, perhaps a new formula, urgently.

If this "greatest of all Fairs" is to be something more than a large-scale revival of all the recent and current efforts, someone will have to produce the big idea. The Architectural Forum has no divine means of identifying that individual or group. It has, however, a firm conviction that this challenge to imaginative people will not go unanswered, and that when the right answer has been found, that person's fame will not go unsung.

The Forum therefore and herewith tenders its services as a place where any inspired contributor may send the idea for the Fair, pledging to each and every one not only the consideration of The Forum's staff but the attention of those responsible for the adoption of the Fair's theme. There are no restrictions of geography. There are no restrictions of age. There are no restrictions regarding the manner of the presentation but The Forum is tempted to observe that big ideas do not necessarily occupy many pages.

It is assumed that participants in this symposium will permit publication of their ideas in the pages of The Architectural Forum and perhaps elsewhere in the press. Address The Editor, The Architectural Forum, 135 East 42nd St., New York.
Medieval "machines for living in," these houses were suitably planned and logically constructed to express a way of living. As long as this way of living continues such houses can be built honestly—and no longer. Suburbia, USA is not a Cotswold village. If excuse there be for reproducing a bygone age, if excuse there be for houses which ignore modern ways of living, modern ways of planning and building, what is that excuse?
SMALL HOUSES FOR CIVILIZED AMERICANS

BY

ALLMON FORDYCE AND WILLIAM I. HAMBY

Architecture is space enclosed for a reason. And the reason is all-important. Recognizing the absence of any coordinated, scientific data on the "reasons" behind small house architecture, this study examines the house room by room, defines its space in terms of use. It makes no attempt to re-create the social order to fit the house, but, rather, re-creates the house to fit existing needs. Thus from the "reasons" are established criteria of minimum standards. No patent medicine formula. No magic. Fordyce and Hamby have treated the house as a commodity—as merchandise.
In theory, small house real estate development is a cooperative effort of architect, financier, and salesman toward a common end. But usually there is no common end. There is not even a common language. The salesman talks about "good real estate;" the financier, "good investment;" the architect, "good architecture." As a result, there is a great deal of discussion, but no perceptible improvement in the houses.

Architect, financier, and salesman are each a little bit right but a great deal wrong. The public doesn't really want to buy real estate or investment or architecture. The public wants to buy a house and that house must be "good merchandise." Good merchandise is something that tickles the buying urge, and contains a great deal of tickling substance for the money. Any sound business man recognizes this utterly simple truth. In general, however, real estate development seems to have ignored it, apparently preferring to remain a muddling process rather than become a business.

That may seem to be overstatement, but here are the facts: after five years of economic catastrophe, of tremendous psychological change, of incredible advance in automobiles, motion pictures, home refrigerators and almost everything else, the great majority of current developments are hardly distinguishable from those of 1930. The salesman asks for 1930 merchandise for the 1936 market. The financier produces his 1930 figures to prove what the 1936 house should be and cost. The architect dusts off his best 1930 houses and revises them somewhat. Such progress is something less than dazzling.

If real estate development is to be a business and not a four-way gamble, architect, financier, and salesman must forget about the lush years 1920 to 1930, and face three realities:

1. Developments were once successful on individual convictions of what would sell—but in the last five important years there has not been enough building to constitute reliable experience in what will sell. Thus developers must borrow from industry the scientific technique of finding out what the buyer wants.
2. Developments were once successful on nothing more than REAL ESTATE VALUE, GADGETS, and VISUAL ARCHITECTURE—the last meaning the cute, quaint tricks of real architecture—but no one familiar with other industries will support the proposition that these three characteristics alone will continue to sell houses.

3. Real estate development has an unsavory reputation to live down. Sound business builds on honest value, satisfaction, repeat business. The huckster lives by the single sale. Real estate development in the majority of cases apparently has not yet learned to follow the example of sound business in this respect.

Having faced the realities, architect, financier and salesman must think creatively toward houses that are good merchandise, and must unify the planning, financing, and selling in a single coordinated program. In order to do that, each must overhaul his own viewpoint and bring it up to date.

WHAT THE ARCHITECT SHOULD REALIZE

When a football team fumbles, it is drilled in fundamentals. Architects are fumbling the small house. They should go back to fundamentals.

All architects insist that they are functionalists, and to tell one differently is the same as telling an ordinary citizen that he has no sense of humor. But there is little evidence of functionalism in current houses. Kitchen equipment has been better arranged, but that seems to be regarded as about the limit of possible accomplishment. If there is nothing more the architect can do, he might as well close his office and go fishing. Utility, flexibility, circulation and orientation are treated like step-children. Everything is subordinated to charm. Charm, unsupported by architectural essentials, is a seducer. Good merchandise has honorable intentions and does not seduce.

It should be remembered that house gadgets and equipment are part of the architect’s job. If, for instance, available fixtures do not fit a desirable solution, they can be redesigned. Industrial design will probably be as great a factor in house improve-
ment as architecture, chiefly because the industrial designer's technique at present em-
braces merchandising to a greater degree than does the architect's. The solution pre-
sented in this article is the result of collaboration between architect and industrial
designer.

WHAT THE FINANCIER SHOULD REALIZE

The financier holds the whip hand and the responsibility for getting good merchandise
will ultimately be his. At present he often encourages, sometimes demands, weak mer-
chandise. Unwittingly he finances bad houses and refuses to lend on good ones. He
won't touch flat roofs, but he doesn't seem to mind terrible circulation or atrocious
orientation. One reason for this is that his appraiser's standards are weird. The apprai-
ser assigns dollar value to brass plumbing, slate roofs, number of bathrooms, cubage.
But he ignores the guts of the plan—utility, flexibility, circulation, exposure—the
relationships that make a house livable. Someone ought to inform the appraiser that the
value of a good house is greater than the sum of the values of its parts.

Houses sold on charm alone are not good places to live in and have a way of bouncing
back. This phenomenon leads the financier into looking for houses that will re-sell eas-
ily. Naturally, he should be looking for houses that will stay sold. He should be the
first to kick against too much emphasis on charm.

The financier must learn what a good house is, and to that end he should not gaze out
the window when the architect talks about utility, circulation, flexibility, orientation.
If he is to get good merchandise he must make more than a superficial examination of the
plans. And he ought to think twice before tossing out a feature that will make a house
more livable but which lacks the trick to bowl the customer over and close a sale.

The financier must learn to respect his customer, his architect, his salesman. It is
characteristic of the average financier to refer to his customers as "they"—"They don't
want this; they don't want that." As to the architect: the financier seems to be paying
him little if any more for original work than the price of second-hand drawings. The
architect-industrial designer with the business viewpoint holds the key to quality of
merchandise, costs, profits. Chiseling the architect is no economy. As to the salesman: the financier must listen to the salesman's demand for variety, even though identical houses may be cheaper to build. And that goes for prefabricated as well as conventionally-built houses.

**WHAT THE SALESMAN SHOULD REALIZE**

In too many cases real estate selling has resorted to High Pressure to fan the customer to buying heat. High pressure salesmanship is obnoxious and unnecessary, and the customer flare-back is terrific.

If a house has a station on one side and a school on the other, it can probably be sold on the basis of Real Estate Value and nothing else. But most locations require good merchandise and good salesmanship. The essence of good salesmanship is the ability to present as effectively as possible the selling points of the merchandise. Good merchandise outsells inferior merchandise by the number and weight of its selling advantages. Given good merchandise, the salesman's job is fundamentally that of presenting the selling points so that they ring the bell.

The run of real estate salesmen, however, is at present unable to do this kind of selling. Historically they are land rather than house salesmen, and consequently are well informed on less than half of the product. If the advantages of a house are to be presented convincingly the salesman must understand their true significance. Utility, flexibility, circulation, orientation should have meaning to him, and not merely be words that architects use.

Every element of the solution which follows has been developed with its possible use as a selling point in mind. The salesman should realize that his prospects are the same people who are demanding a great many features in automobiles, refrigerators and many other products. The greater the number of features, the easier the selling.
THIS IS PART TWO TELLING HOW TO ANALYSE THE SMALL HOUSE TO MAKE IT GOOD MERCHANDISE

Real estate development has become sterile largely for lack of an orderly method of approach that will produce, economically, a lot of houses all of which vary and all of which are good houses. This article presents such a method of approach, and illustrates its general application to houses for a particular market. It does not pretend to give detailed solutions to be filed in haste and incorporated in drawings at leisure. The method described here is basic—it can be used for any development, no matter what size the houses or what class the market.

The analysis strips the small house to essentials, most of which seem, or should seem, too obvious to be written down. But for all their obviousness, few small houses seem ever to have heard of them.

This analysis and general solution are aimed at a homogeneous market of civilized Americans who have some refinement, are in white-collar, professional, or semi-professional callings, and have moderate incomes. Each house has a cubage of approximately 20,000 cubic feet with three bedrooms and no maid’s room, and in many localities can be bought complete with land on an income of $3250. Obviously, much of the solution can be applied with advantage to a single, non-development house.

Good House Merchandise Means Three Things

1. BETTER LIVING FACILITIES — Each house must, insofar as possible, be tailored to the family’s living, working, recreational and entertainment habits. This means more than a polite bow toward functionalism.

2. PERSONALITY — This house must awaken the impulse to buy not only by attractive appearance but also by its quality in such matters as cheerfulness, comfort, security, labor-saving, child-rearing, sanitation, up-to-dateness.

3. LOW COST — The house must fit the family’s pocketbook. It must show its money value against competition, meet the family’s conception of sound investment, and be in tune with the family’s idea of its place in the economic scheme. And however much some architectural souls may writhe, the house must satisfy the financier.
Of all architectural principles those giving Better Living Facilities have most often been ignored. Almost all customer objections to small house architecture have been leveled at living facilities.

Better Living Facilities Are The Result Of:

A. UTILITY
   Primary Living Activities
   Secondary Living Activities
B. FLEXIBILITY
C. CIRCULATION
D. ORIENTATION

The architectural approach to the problem of providing better facilities for family life has run chiefly to extremes. Either it assumed that conventional plans were quite good enough and tampered not at all, or else, decrying the lack of opportunity for individualized living, it devised a plan requiring the family to be individual or bust.

The architect with a business viewpoint will try to split the difference, being neither a rubber stamp nor a crusader.

Designing a house for a family you have met and whose way of living you know, is rather simple compared to designing a speculative house for an unseen family. The latter is a little like shooting at a very thin bird on a dark night. The shot must have a wide pattern. In any case Utility should be analyzed in the same manner.
A. UTILITY - OR FITTING THE SPACE TO THE FUNCTIONS

THE PRIMARY LIVING ACTIVITIES THE HOUSE SHOULD PROVIDE FOR ARE:

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<tr>
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Cooking is the only activity which enjoys a solution based on analysis. As a result, the domestic science type kitchen is an efficient workshop.

In practically all families of the chosen market dining takes four forms. Speculative houses should provide space or spaces adaptable to all of them. Dining space should be warm in winter, cool in summer, never stuffy. Should be spared cooking odors, kitchen noises.

"dog wagon" meals

(1) Commuter's breakfast, children's meals, part-time servant's meals, Sunday supper, early-movies supper, midnight snacks. Should be quick and easy, as close to the stove as is practical.

polite meals

(2) Family meals, small dinner parties and luncheons for friends, customers, boss. Some guest breakfasts. Accent should be on intimacy, service.

occasions

(3) Holiday dinners, garden club luncheons, birthday dinners, wedding breakfasts. Accent should be on hospitality. For Garden Dining (4) convenient access should be provided from kitchen to yard—preferably on the garden side. For Buffet Suppers see Entertainment.
**RELAXATION**

Relaxation requires space separate and apart from the hubbub and clutter of household work. In current houses other functions encroach on the sanctity of evenings at home, the Sunday paper, afternoon tea, conversation, visits, reading, letterwriting, stamp-collecting, cocktails, radio, sitting in front of the fire, thinking. Essential requirements of relaxation space are comfort, cheerfulness (sunlight) and enough room for several people to relax at one time. Remember that the living room is the show place of the house. It should be impressive.

**CHILD PLAY**

Child Play requires, from the first creep to about the fourth year, space within view of an overseer—generally the kitchen worker. Supervision is most effective when the child isn’t conscious of it.

**overrunning**

The play of a healthy, normal young child should consist of physical and at times rather noisy conduct: running, climbing, crawling, hammering, block-building, with obligato of steamboat whistles and fire sirens. What is right for the child is annoyance for the adult. In most plans Child Play overruns the entire first floor and becomes a major family scourge.

Ideally, there should be separate Child Play space, but that is too expensive for these houses. Since Child Play is not a permanent activity, it must, for economy, share space without impairing the space’s use for its permanent activity.
practical

One solution with definite advantages is to enlarge the dining room somewhat and make it serve both Dining and Child Play functions. This solution 1) affords the kitchen worker convenient supervision; 2) makes the dining room—usually the least used space in the house—do double duty; 3) helps civilize the young American by defining his play area. If there is an objection to using a traditional dining room suite in this solution, special furniture can be obtained. Child Care is to be distinguished from Child Play. The speculative house cannot offer much more toward complete provision for Child Care than a covered outside area, accessible to and within view of kitchen.

ENTERTAINMENT

Most current plans slice Entertainment into little pieces, and to the despair of the hostess men usually go into a huddle in one room.

sliced

The function of Entertainment divides into four types, each with a different social texture, and hence requiring different space allocation.

intimate

One or two tables of bridge, visiting, afternoon tea. Space as large as that for any other living activity is needed.

gay

Cocktail parties, buffet suppers, large bridges and teas, games, soirees, dances, musical and children's parties. These require larger unified space than that for any other activity.

Probably combination of living and dining rooms.
polite whoopee

The more space the merrier. It is not so long a time between drinks and the atmosphere is freer, if kitchen is a definite part of the entertainment space.

serious whoopee

Should not take place on first floor because it jeopardizes furniture and decoration. If people must break things to have a good time, room in basement may be provided.

young people

"Should she ask him in?" Small houses have done virtually nothing to help the youngsters entertain their friends. The Dining-Play space is an excellent spot for Daughter's bridge game with her girl friends, Son's poker game with the gang, and for the Daughter and the Young Man to talk things over in. The Daughter, having played here as a child, feels at home in it. It should be noted that this solution does not contemplate use of a conventional suite of dining room furniture. Properly designed furniture can give atmosphere of attractive living room.

sleeping space

SLEEPING

Families of this market require three separate sleeping spaces, each to accommodate two beds.

As for ventilation: people are keenly aware of it in the bedroom.

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TOILETING

The functions of Toileting are in general reasonably well solved, considering available equipment, in several current bathroom designs. It should be remembered, however, that the highly compressed bathroom does not provide fully for dressing or elaborate primping. Real improvement in bathrooms will come only from functional analysis and redesign of the equipment in conjunction with the space.

LAUNDERING

Laundering is usually not considered an obligatory first floor activity and is banished to the basement. It should be on the first floor for these reasons:

**damp!**
**dark!**

Laundering is a wet affair and requires clean, dry, agreeable, day-lighted work space for the health and comfort of the worker, protection of clothes from mildew, and for general sanitary reasons. Since it is not a continuous activity, convenience to kitchen permits worker to carry on with kitchen duties between laundering operations. Facilities for incidental mending should be provided. Laundering, of course, requires mechanical aids.

**daylight!**

Daylight doesn't breed germs; dark cellar space does. Besides, civilized American women are not fond of working in cellars.
Each living activity has its own storage requirements. This is too large and detailed a problem to embark upon here. Several analyses of storage have been made. Had these been carried into solutions and built into houses, it is probable that current storage facilities would be as efficient as the domestic science type kitchen. 

Caution: The way to improve storage is to analyze both the individual article and its reason for existence, and then fit the storage to both of them. Don't start with hooks, bars, shelves, etc.

**garage**

The garage is really storage space, and these things must be borne in mind: the car is a greasy article; space around it is required for access and tinkering. The garage doors must be easy to operate because they are so often opened by women.

**CHORES**

Chores, such as housecleaning, breaking up crates, washing the dog, are and should be spread all over the house. There are a few chores, such as furnace tending, which must have definite space. The character of this space is unimportant and its size should be kept to a minimum. Half a basement is all that is needed. A full basement is waste.

**Note on Housecleaning:** The old-fashioned method is to keep each room shut off from the rest of the house until dust re-settles. The modern method is to open up the house for easier wielding of vacuum cleaner.
A. UTILITY - 2
OR FITTING THE SPACE TO THE FUNCTIONS

THE SECONDARY LIVING ACTIVITIES THE HOUSE SHOULD PROVIDE FOR ARE:
CONCENTRATION  ADULT RECREATION  PANTRY WORK  ADDITIONAL ACTIVITIES

CONCENTRATION

Quiet has been set up as essential for relaxation. This, however, is not enough for reading, balancing checkbooks and doing work brought home from the office. Secluded space, which may take one of four forms, is needed for concentration:

- First Floor Alcove
- Second Floor Alcove
- Study
- Combination Guest Room and Study

**guest room - study**

Utility weighed against cost makes combination guest room-study attractive. It functions well as a study when there is no guest.
ADULT RECREATION

Adult recreation breaks down into two classes, hobbies and games. For these a finished room in the basement can be provided, although first floor space is desirable.

PANTRY WORK

Facilities outside kitchen space are desirable for such activities as cleaning up after large meals or parties, cleaning silver, arranging flowers, soaking minor wash, informal parties where guests help with dishes. When laundry is on first floor these facilities can be provided by building a metal sink with drainboard into laundry tub cover, using same taps as tub, and draining through tub.

ADDITIONAL ACTIVITIES

There are a number of additional activities which can be provided for specifically if the traffic will bear the cost. Some of these are: Entering and Leaving the House, Listening to the Radio, Child Homework. Speaking generally, most of these can be taken care of by such things as fireproofing, soundproofing, acoustical treatment, built-in furniture.

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B. FLEXIBILITY
OR MAKING SPACE SERVE OVERLAPPING ACTIVITIES

FLEXIBILITY IS CONTROLLED BY TWO LINES:
the line dividing Cooking space from Dining-Play space, AND, the line dividing Dining-Play space from Relaxation space.

If the house is to be good merchandise it should appeal to a great many families. It should, therefore, try to fit each family's living requirements as if it had been custom built. A first floor that permitted all space allocations discussed under Utility would fit every family. But obviously, many living activities when translated into function overlap and are in conflict. (See Cooking, Dining, Relaxation, Child Play, Entertainment.) Either these conflicts must be resolved or compromises must be made. In other words, Flexibility must be a major consideration of the plan.

The overlapping and conflict in function can be solved by three methods: 1) drawing houses for construction with variation in treatment of the two controlling walls and consequently in the emphasis the house places on various living activities; 2) when houses are sold from samples, constructing or omitting walls according to buyer's preference; 3) folding partitions.

Of these three methods, the one using one or more folding partitions instead of walls is the only one capable of giving proper space allocation for all First Floor Primary Activities after the house is built. Folding partitions permit the house to be arranged in any one of four plans at any time.
traditional three roomer


suburban plan


two zone


open house


With folding partitions, the family can play tunes on the plan to coincide with its whims, or with hourly, daily, or seasonal needs. Or it can experiment until it finds the arrangement it likes best. Or it can alter the plan to take care of future developments—the arrival of a baby, the departure of a grown child. To a lesser extent this also applies when one folding partition is used.
C. Circulation
Or Short, Straight, Desirable Routes From Here to There

Considerations of Utility and Flexibility establish the number, sizes, and general shapes of the various living spaces and of the equipment in them. Were family life a static thing these would tell the whole story. But family life is not static; it is flowing. Hence the need for good circulation. Good circulation has three essentials: straightness, shortness and separation of overlapping activities. Circulation within spaces is as important as circulation between spaces. Which means that furniture arrangement must be considered. In the case of overlapping functions the utility of any space can be destroyed by bad circulation. This is too often the case as you will see if you compare development houses with the reasonable minimum requirements shown in the diagrams.

First Floor

You ought to be able to enter house and sneak upstairs without walking through tea party. Part time maid should be able either to open front door or go upstairs without entering living or dining room. Kitchen should lead directly to dining-play room, yard. Coat closet and lavatory should be off stairhall.

The above are the minimum requirements. The first extension of these should be: stair hall direct to Dining-Play room.
second floor – one bath

It is a crime to make anyone enter someone else's bedroom to reach own bedroom or bathroom, or towel closet. Or to send him out into hall to get at his clothes closet.

second floor – two baths

One bath off master's bedroom. One bath off hall. With modifications master's bath can also connect two bedrooms—can connect through a dressing closet.

VERTICAL CIRCULATION

Stairs and stair halls should be clean, open, direct, and straight for comfort and safety—especially when moving around in the dark. There are three types of Vertical Circulation. Note: When entire house is on one level, living and sleeping sections are joined by a hall.

2 Floors

1 \frac{1}{2} Floors (A)

1 \frac{1}{2} Floors (B)
Most past and present small houses in real estate developments fail miserably in regard to orientation. Good orientation means the proper placement of rooms in relation to sun, wind, topography, and outlook, at the same time providing convenient access from street for family and car. The importance of good orientation has led to an architectural maxim, "Never sketch before you see a plot plan." In sub-divisions, however, plots face in all directions, so in developing a planning system for houses that can be used on any plot in any sub-division, plot plans are of little help in getting good exposure.

Minimum orientation requirements for houses for civilized Americans are: Southern exposure for living room, Southeastern exposure for dining room, Southern exposure for master's bedroom.

Usual development practice fails to fulfill these requirements in about three houses out of four. Stock plans are rotated, turned to face the street no matter what the exposure of plot or the position of rooms.
all orientation requirements can be fulfilled, however, if, instead of rotating the entire plan, only the garage and entrance motives are rotated. This permits every house, whether on front or back of plot, to face in the proper direction for access from street without altering the exposure of a single room. Note that relation between living room, dining room and sun is the same in all cases.

**RECOMMENDED PRACTICE IN ORIENTATION**

street shown in solid black

**all houses have proper exposure because sun and wind determine orientation**

**Topography** and outlook vary with each set of sun, wind and street conditions. Choice of plans is necessary to take care of these added variables. This solution has five such plans.

**Landscaping** should be an important consideration in the placement of the house on the plot, for house and plot should function as a single unit. In planning house and yard, the relation of kitchen to Child Outdoor Play space and Outdoor Dining space must be considered.
PERSONALITY

Personality is the sensory appeal which arouses the buying urge.

Its general aspects are TYPE OF APPEARANCE, SELLING GAGS, COLOR.

TYPE OF APPEARANCE

This article purposely sidesteps the question of "style" because it is complicated and philosophical. The following, however, should be pointed out: To the average financier, salesman and consumer, style means the Type of Appearance—English, Colonial, Modern, etc. By this definition, Appearance is distinct from the rest of the house. This is a wrong notion. Style really means the combined result of the way the plan works, the way the plan builds into a mass, the way the mass is constructed, the way materials are used. Appearance is the visual result of all those things. The "Type" idea can produce good merchandise; it can never produce good architecture. Today's burning question is: "Should speculative houses be of Traditional or Modern Type?" And that requires a definition of Modern Type. The clearest way to give it is to say that in this solution Modern Type means houses that look something like those in the pictures on pages 32, 33. House B is considered to be just about on the modern side of the line dividing Modern Type from Traditional Type. House A is definitely of the Modern Type. (House E is just on the traditional side of the line. House C is a little more so. House D is definitely of Traditional Type.) The answer to "Should speculative houses be of Traditional or Modern Type?" is simple. The answer is: "Both." Not because it is an easy way out, but because part of the market wants Traditional Type and part wants Modern. During the five year gap in house building, public taste in design of almost all products has swung to the modern. Most significant of these is furniture, which is blood brother to the house. Modern design revitalized the furniture industry. The question is not whether people want Traditional or Modern Types, but how many people want each type. The answer should be a reasonable indication of the number of houses to be built in each type. The results of The Architectural Forum 1935 House Survey offer a working basis. 35 per cent of the replies expressed a definite desire for uncompromising Modern Type—like that of House A. 42 per cent wanted Early American, 17 per cent English. These results are most interesting compared with the results of the 1934 Architectural Forum Survey in which only 11.6 per cent wanted Modern Type.
the architectural forum surveys of 1934-1935
on house style preference compared

1934

1935

One house means 4 per cent of total returns in survey.

Therefore, it is considered conservative to say that 43 per cent of the Houses built should be of Modern Type, varying in shade from House B on page 34 to House A on page 32.

Obviously, as houses are built and sold, a close study should be made of the appeal of the various types.

SELLING GAGS

The buying public has demonstrated beyond argument that it invariably succumbs to selling gags—that is, things like powder rooms, bars, front door chimes. There are few greater tragedies than to design and build a house as well as you know how, and then have a customer lured away by a competitor's trivial gags. A sufficient number of gags to match the competition should be built in each house. (For illustrations see page 30.)

Conventional house elements can be made to serve gag duty—for example: by making kitchen cabinets look sanitary inside, painting cellar pipes red, putting bullnose corners around baseboards, using shiny metal bars instead of drab wood ones in clothes closets, and so on, and so on.

COLOR

Color is one of the most important characteristics of a house, and is a full-sized problem in itself. The best solution would be to help the buyer select the final interior colors he wants. After all, he is the one who has to live with them. But this practice would probably mean that when he first sees the house the walls would have to be blank white or a neutral shade. Blank white and neutral shades would sacrifice the selling punch that color, skillfully used, can give. The customer's first impression of the house should be something of a thrill. The use of color to make a house both more livable and easier to sell presents a conflict to which no solution is offered here.
Houses based on the analysis thus far could be expected to appeal to the market more strongly than usual development houses. But to be good merchandise they must also cost no more than competition houses and must fit the family's pocketbook. Attention should be given to a systematic method of keeping costs low. This obviously must be considered as independent of normal bargaining.

When houses are built in groups and when house variation is necessary, costs can be kept down by PREFABRICATION and HOUSE MULTIPLICATION.

**PREFABRICATION**

Prefabrication has come to mean factory fabrication of the whole house. The totally prefabricated house has been slow to develop and probably will not be fully practical for some time. The principle of prefabrication, nevertheless, promises to reduce costs. A large part of the total house cost is represented by elements which can satisfactorily be prefabricated today because no extensive research is required before manufacture. Obviously, prefabrication of these elements will produce definite cost reductions. These elements are: Plumbing skeleton; Heating; Laundry; Closets; Stairway.

**plumbing skeleton**

Assuming that a one-bathroom house has a stack and a vent or that a two-bathroom house might have two stacks, it is possible to set up, empirically, standard distance between vent and stack or between two stacks, and to establish a fixed set of outlets.
It is, therefore, possible to vary the location of any group of fixtures—bathroom, lavatories, sinks, laundries—within the house without varying the actual pipe system. If the water lines follow the same principle almost any number of plans can be devised from an economical prefabricated plumbing skeleton. This can be made in any plumber's shop.

heating

Assuming that the heating system consists of a vertical duct connecting a minus plenum chamber and a plus plenum chamber, equipped with a blower for circulation, and either a standard hot air generator connected to the vertical duct by horizontal direct duct, or a standard hot water generator connected by pipe to radiators in the vertical duct, it is possible to standardize the distance from generator to vertical duct. Thereby, the plus plenum chamber can be located so as to touch and supply heat direct to every room in the small house. The minus plenum chamber acts as a return, and the generator can be located near any available flue. This system can be very easily adapted to full air conditioning.

laundry

Laundry equipment consists of two tubs, electric ironer, electric iron, ironing board, washing machine, and clothes wringer. All laundry equipment can be made and delivered on site as a unit. This offers distinct advantage inasmuch as when all this equipment is designed as a unit it requires very little floor area. The job can be executed from architect-industrial designer's drawings and specifications. Stock equipment can be adapted to the design.
closets
Three different closet sizes will satisfy all requirements in all houses of this solution. These can be prefabricated complete with fittings, and with an attractive finished look. Prefabrication is simplified if closets are made of wood, because they can be made by any mill from working drawings and specifications.

stairways
In this solution's houses only three types of stairs are contemplated. Completely built stairs can be ordered and erected as units and if properly protected will serve construction purposes. This standardization of stair types offers an advantage in ease of making stairways fireproof.

HOUSE MULTIPLICATION

Houses built in groups are cheaper than houses built singly. By usual methods of design it is impossible to make all houses in a development good houses and individual ones, without going to the expense of designing and building each house separately. Economic necessity has seemed to dictate that low cost houses be repeated, thereby sacrificing many desirable features. This is not necessary, for individuality with low cost may be obtained if all elements that do not affect individuality or living facilities are repeated.

house multiplication works this way
A plan which gives the prospect desirable living conditions and which suits topography of the plot is oriented for proper exposure.
 multiplication by rotation of access

ROTATION OF GARAGE MAKES MASSES WITH SAME PLAN LOOK DIFFERENT
(And see Orientation on pages 20 and 21.)

By rotation of the garage and entrances to face the street, this plan can be placed on any lot and still have proper orientation. At the same time the change gives the house four different masses—which means different appearance—and, if carefully done, this may be accomplished without sacrificing a single planning principle.

 multiplication by skin treatment

CHANGE OF SKIN TREATMENT—BY ARCHITECTURAL TYPE OR WITHIN A TYPE—MAKES HOUSES WITH THE SAME MASS LOOK DIFFERENT. For each of the four masses the skin of the house can be treated in several architectural types or variations within a type. This solution produces 100 houses. There are five plans, on each of which are generated four masses. The surface of each of the resulting 20 masses is treated in five styles or variations of style. The same technique can produce several hundred houses by increasing the number of original plans or the number of style variations, or both.
The houses of this solution are intended to appeal to this family. A house must have personality and cost may also change; the form of analysis need not change.
THESE ARE SELLING GAGS-
THE SORT OF THING THAT HELPS CLOSE A SALE

Selling gags are selling inducements and should catch the eye and go straight to the heart. Nevertheless, there is no reason why they cannot be both useful and attractive. Properly conceived and designed, they can improve the quality of the merchandise. (See page 23)

kitchen with table
Table can be used for feeding children or maid, or for midnight snacks. Because it is between kitchen and laundry it also serves for laundry mending.

study-alcove
A pleasant, somewhat secluded place for work brought home from the office, letter writing, balancing the family budget, reading, and intimate conversation.

dressing table
Built in a niche in an oversized bathroom. Lined with mirrors and indirectly lighted. Gags like this which affect dressing and primping have particularly strong appeal to women.
THIS IS PART THREE
SHOWING HOUSE DESIGNS BASED ON THE ANALYSIS

EACH HOUSE IN THIS SOLUTION HAS THE FOLLOWING-

Approximately 20,000 cubic feet
Living room
Dining room
Domestic science type kitchen
Two sinks
Laundry adjacent to kitchen
First floor lavatory
Bath
Three bedrooms, each accommodating two beds
Attached garage with storage space
Sun decks when design permits them
Possibility of emphasizing the facilities for various activities by wall treatment along the two lines controlling Flexibility
Circulation as good or better than the minimum requirements given on pages 18 and 19
Proper Orientation
Standardized distances for prefabricated heating system and prefabricated plumbing skeleton
Completely prefabricated, unified laundry equipment
Prefabricated, outfitted closets of unit sizes
Prefabricated stairs
Selling gags
Orientation of house proper remains constant; garage and access only rotate with street.

BY using the basement cubage on the first floor, and by the planning itself, this plan produces, in feeling and in fact, an unusually large and open first floor. This is only possible at sacrifice of maximum provision for Relaxation, Child Play, Intimate Dining, Young People's Entertainment, and Adult Recreation. Upstairs study guest room compensates for encroachment on first floor Relaxation and Young People's Entertainment. Separate laundry-mending room.

VARIATION OF MASS BY ROTATION
Orientation of house proper remains constant; garage and access only rotate with street.

This plan exiles noisy activities from quiet ones by putting each type in a separate space. Sacrifices maximum provision for Occasions, Gay Entertainment, Polite Whoopie. Uses half of 2-car garage for Child Play or Adult Recreation. Has proper storage without basement. Two baths—master's bath has dressing room facilities. Laundry is next to dining room to make it available as pantry, but, with sacrifice of pantry work, can be at other end of kitchen.

From one plan and one mass

Variation of Skin Within
AN ARCHITECTURAL TYPE

JANUARY 1936
Orientation of house proper remains constant; garage and access only rotate with street.

**Here** is a small house with a great big room on the first floor. This is accomplished at the expense of Relaxation, Polite Meals, Child Play, and Young People's Entertainment. Because this house has a basement the first floor space is small, and therefore flexibility between dining and living rooms is limited. To compensate for loss in Relaxation, this house has a master's bedroom suite whose sitting room can be used as study or part-time guest room. Room for Serious Whoopee or Adult Recreation in basement. Kitchen table for Dog Wagon Meals.

**From one plan and one essential mass**

**Variation of Skin by Change**
OF ARCHITECTURAL TYPE
DESIGN D

Orientation of house proper remains constant; garage and access only rotate with street.

THIS plan accentuates Concentration. Good for Intimate and Gay Entertainment, fairly good for Occasions, Child Play and Polite Whoopee. Not so good for Dog Wagon Meals, Relaxation Young People’s Entertainment. A first floor study can be treated as a study-alcove to enlarge effective size of room. Serious Whoopee or Adult Recreation in basement.
DESIGN E

Second Floor

First Floor
Orientation of house proper remains constant; garage and access only rotate with street.

THIS can function as an Open Plan or as a Two-Zone Plan. It has centralized, direct circulation off stairhall. Has two baths, an upstairs, study-guest room, and a basement room for Serious Whoopee or Adult Recreation. Note especially that the plumbing stack is the same as those in the other plans.
THIS IS AN OUTLINE OF SMALL HOUSE THINKING
THE HOUSE SHOULD BE "GOOD MERCHANDISE"

1. BETTER LIVING FACILITIES

A. Utility

PRIMARY ACTIVITIES

COOKING
DINING—dog wagon meals, polite meals, occasions
RELAXATION
CHILD PLAY—overrunning, perfect, practical
ENTERTAINMENT—sliced, intimate, gay, polite whoopee,
serious whoopee, young people
SLEEPING
TOILETING
LAUNDERING—dark or daylight
STORAGE—garage
CHORES

SECONDARY ACTIVITIES

CONCENTRATION—guest room—study
ADULT RECREATION
PANTRY WORK
ADDITIONAL ACTIVITIES

B. Flexibility

traditional three roomer, suburban
plan, two zone, open house

C. Circulation

first floor, second floor (one or
two baths) vertical circulation

D. Orientation

usual practice, recommended prac­
tice, topography, landscaping

2. PERSONALITY

PREFABRICATION

PLUMBING SKELETON
HEATING
LAUNDRY
CLOSETS
STAIRWAY
FRAME

HOUSE MULTIPLICATION

BY MASS (rotation)
BY SKIN TREATMENT

3. LOW COST

Fordyce and Hamby wish to acknowledge
the editorial collaboration of
Adrian Murphy in this article.
With little money to spend on construction, the Westfield Building and Loan Association built this compact, clean building at the surprising cost of $3,500 including architect's fee, exterior and interior and all furnishings. The building avoids ornament, uses as decoration only such useful features as the highly raised lettering and the black and aluminum clock over the entrance. The facing is Micarta with aluminum strips. The width of the front elevation is only 15 feet.
Despite the limited area, the architect has captured a feeling of space. Counter screens have been kept low. The illusion of space was carried further in the treatment of the directors' room at the back which is separated from the work space only by sliding, unframed glass partitions on wood tracks. The public entering the lobby can therefore see almost the entire length of the building. The lobby has a green and black terrazzo floor with gum wood wainscoting stained soft green. The two economical and well-designed wall check desks are in the same wood and color. The directors' room makes a bow to tradition with oak furniture set off by needle-point oak wainscoting and tan beveled insulating boards above. Plan and full construction outline on page 44.
COUNTER

DIRECTORS' ROOM

COUNTER SCREEN

JANUARY - 1936
With a 15-foot frontage there was little to do with the plan except line up the required spaces one behind the other. In spite of this apparent simplicity of problem and solution, the plan has been worked out with considerable ingenuity. The vestibule, always an awkward motif, has been placed between two benches, becoming a part of the room. The windows, obviously of little use in a plot of this shape, have been well supplemented by an excellent lighting system.
On 95th Street and Ashland Avenue, Chicago, this small theater is flanked by four stores, the two adjoining the theater entrance being set back 3 ft. to give prominence to the entrance, and further accented by color: an insistent Chinese red for the entrance and doors and dark blue for the glass cube above which encloses the projection booth and fan room. Other colors are comparatively neutral; polished black granite for the base of the stores, chocolate brown for the parapet, buff for the walls of the house proper. The corner lot is irregular with 100 ft. on 95th Street, 187 ft. on Ashland Avenue and 162 ft. on the east line. The lobby is a 26 ft. square which opens into a 14 by 57 ft. foyer.
At each end of the foyer is a circular stair to the upper level of the loge with smoking and toilet rooms at one end for women, at the other for men. The manager's office, a small checking room and stairs to the basement are between the foyer entrances to the parquet. Between the photographs hung on the foyer walls are two transparent mirrors about 3 by 30 in. framed to match the photograph frames. By opening a small door behind these the manager can observe the foyer, lobby and ticket booth without being seen. On the opposite side of his office is a small wood door, 12 by 18 in. which opens into the auditorium at the center line and affords a complete view of the stage and most of the auditorium while he operates a control board which opens and closes the curtain, dims auditorium lights, controls switches. Thus the manager can direct his theater without leaving his office. Auditorium lighting is by an elaborate system of separate controls, all however subject to a master switch so that center trough, side cove, column, and stage lights may be operated independently or in unison. The building is air conditioned throughout.
The plan is well laid out for a moving picture house, and is unusual in several respects. The balcony, which is reached from the same level as the orchestra, is an excellent arrangement, creating one large seating area, with an effect of more spaciousness than is customarily obtained in a theater of this size. The simplicity of the plan reflects this same quality in the decorative treatment of the interior.

**CONSTRUCTION OUTLINE**

**EXTERIOR**
- **Front Elevation**
  - Stores: Base—polished black granite.
  - Store fronts: alumilited aluminum.
  - Parapet over stores—chocolate brown Macotta with a stainless steel coping.
  - Surrounding the parapet—2 ft. projecting parapet of white cast stone.
  - Theater: Marquis—alumilited aluminum facing except for attraction signs.
  - Soffit—steel plates, light warm gray, with alumilited aluminum dividing bar.
  - Entrance—Chinese red Macotta with doors to match.
  - Poster cases: alumilited aluminum.
  - Glass stops: alumilited aluminum.
  - Floor: shades of gray terrazzo with Chinese red perforated rubber mats to match Macotta.
  - Ticket booth—alumilited aluminum.
  - Over marquis—dark blue glass cube in back of which is projection booth and fan room.
  - Fresh air—introduced through louvers at bottom of cube.
  - Exposed metal work of the cube—alumilited aluminum.
- **Other Elevations**
  - Walls—light gray slag brick with white cast stone coping.

**INTERIOR**
- **Theater Lobby:**
  - Walls—Notre Dame marble.
  - Ceiling—gold leaf.
  - Carpet—dark maroon, 4 in. black and 2 in. white terrazzo border at all edges.
  - Trim—off white.
  - Doors—maroon (match carpet).
- **Foyer and Stairs to Loge:**
  - Walls—white.
  - Ceiling—gray.
  - Light doors—off white.
  - Carpet—rust.
  - Moldings:
    - Trim—gold.
  - Drinking fountains—white, mounted on pink mirrors.
  - Furniture—covered with Zebra fabric, white and brown, arms—alumilited aluminum.
  - Tables—light brown mahogany.
  - Chairs and davenport—burgundy moha  
    - hair with white piping and chrome frames.
  - **Auditorium:**
    - Walls—above wainscot, warm gray acoustic material (Absorbex).
    - Joints covered with metal snap-on moldings.
    - Wainscot—antique silver Fabriciana.
    - Ceiling—plastered off white finish.
    - Center fin is acoustical plaster to match side walls.
    - Curved walls at stairways—acoustical plaster, lemon yellow.
    - Fluting at column of proscenium—silver.
    - Columns—off white.
    - Carpet—dark gray.
  - **Seats:**
    - Upholstered, deep wine colored material.
    - Seat standards—light gray with very dark brown striped mold to match wood arm.

**Men's Smoking Room:**
- **Walls:** subdued yellow.
- **Floors:** two shades of brown rubber laid in 18 in. wide strips alternately.
- **Ceiling:** matches dark brown of floor.
- **Furniture:** brown and white linen fabric.
- **Ladies' Toilet:**
  - **Walls:** pink Tennessee marble.
  - **Partition doors:** dark burgundy and half light.
- **Men's Toilet:**
  - **Walls:**
    - Toilet partitions: white marble.
    - Partition doors—half dark gray, half off white.
  - **Floor:** black ceramic tile with white inserts.
  - **Ceiling:** white.
- **Auditorium:**
  - **Walls:** above wainscot, warm gray acoustic material (Absorbex).
  - **Joints:** covered with metal snap-on moldings.
  - **Wainscot:** antique silver Fabriciana.
  - **Ceiling:** plastered off white finish.
  - Center fin is acoustical plaster to match side walls.
  - **Curved walls at stairways:** acoustical plaster, lemon yellow.
  - **Fluting at column of proscenium:** silver.
  - **Columns:** off white.
  - **Carpet:** dark gray.
  - **Seats:** upholstered, deep wine colored material.
  - **Seat standards:** light gray with very dark brown striped mold to match wood arm.

**The American Architectural Forum**
EAST LIBERTY PRESBYTERIAN CHURCH
PITTSBURGH, PA.

CRAM AND FERGUSON, ARCHITECTS
Seldom in the case of great churches are the architects permitted to see their highest ideals carried out after a complete and definitive fashion. Usually these churches of the larger sort are either constructed piece-meal, the operation covering a long term of years, or else the fabric of the church itself is finished, with no funds remaining for furnishings and embellishments, which have to be added later as opportunity offers. Meanwhile the church must stand barren and unimpressive...

The East Liberty Church is a rare and welcome exception to this rule. Here the donors had a vision of adequacy and completeness; the architects that ideal which is so seldom to be realized; and the coalition of these two factors has resulted in a monument that reveals the working out of this complete community of desires and ideals. It is doubtful if there is anywhere in this country a church of similar magnitude where every detail of utility and artistic quality has been achieved in so full a degree. In saying this, the architects make no estimate of the esthetic quality of the work, only of the completeness which has been achieved.

In this they have had the cordial cooperation of those allied artists without whom mere architecture would fail of its effect. Sculptors, craftsmen in stained glass, metal workers of every sort, cabinet makers, wood carvers, all have been of the highest standard of capacity the time affords. Their work speaks for itself.

Architecturally, a sincere effort has been made to achieve again something of this same unity, consistency and significance. The general style is Gothic, of course, for this was the supreme expression of Christian civilization... on the other hand, no effort has been made to obtain archaeological exactitude. The design follows no definite precedent nor is it based on any ancient church already existing. You may find in it, if you like, suggestions from France, England, Spain, indeed from any place where Gothic was a living force—but suggestions only. These qualities have been used only as, so to speak, building material out of which something new, the architects believe, has been developed; something new that is also, in its essential quality, the old. This is a statement of intent and aspiration, not necessarily of accomplishment.

We have here, and in furtherance of the wise desires of the donors, both a church for public and private worship, and all that is imaginably required for the operation of the religious impulse in social, secular and cultural fields, yet the just balance between the two has been maintained. Of course, the great church, of cathedral dimensions and design, completely dominates the whole composition. Cruciform, with a spacious chancel, and built throughout, even to its vaulting, in solid and enduring masonry, it declares this dominance in the face of all the world. In intent it declares not only the unity, consistency and continuity of Christian art, but that 'unity of the spirit in the bond of peace and in righteousness of life' so eternally desirable, and never more so than at the present time.

This quality is especially manifest in the great chancel with its Communion table as the focus of the whole composition, its towering reredos of ivory-colored stone with the great marble bas-relief of the Last Supper and its significant statues, its canopied stalls for clergy and elders, its elaborately carved pulpit on one side, its lectern on the other. This also is to be observed in the complete furnishing of stained glass windows, recording God's dealings with man from the Creation of the World, through the revelations of the Old and New Testaments to the Apocalypse and the vision of the Heavenly Jerusalem, down to the varied manifestations of saintly life in later times, the protagonists of the Reformation and the evangelical and missionary worthies in the U.S. and it can be said particularly in Pennsylvania. All Christian history is there, even as it was in the olden days: in very fact 'the Bible of the People'.

RALPH ADAMS CRAM.
COURT

The imposing courtyard, looking toward the main body of the church. One of the simplest and most monumental portions of the group, the great court is strongly reminiscent of some of the Gothic work in the south of France, such as the church of the Jacobins in Toulouse. The combination of planted and paved areas gives the composition warmth and richness. The court, designed for use as an outdoor congregating place, with a pulpit set down a few steps from the open passage, can be entered from the narthex of the church, or directly from the street.
NAVE AND CHANCEL

A view of the nave looking toward the chancel. The effect of richness is due more to an effective placing of the ornament than to its lavish use. Quadripartite vaulting, similar to that in the early English cathedrals, covers the nave, with the typical arrangement of clerestory window, triforium gallery, and arcade for the walls.
Clerestory

Ten large clerestory windows light the nave. Closely patterned after the stained glass windows of medieval cathedrals, they illustrate episodes of both Old and New Testaments. They were designed by Charles J. Connick and executed under his direction.
AISLE

The simplicity of the side aisles is in effective contrast to the richness of the nave. Emphasis is laid not upon highly ornamental detail, but upon the quality of the stonework and upon the interplay of forms. The architects' complete familiarity with the style in which they elected to work is well illustrated by the vigorous and knowing treatment of this portion of the church.
Two details of the chancel, showing the elaborately carved stalls and reredos. The latter contains a panel representing the Last Supper, a relief occupying the most important place in the church, surrounded by rich carving in the late Gothic manner. John Angel was the sculptor. The reredos is in Alabama limestone with the exception of the panel which is in Hauteville marble. The five figures in the niches above are Peter, James Major, Paul, John the Apostle, and Andrew.
REMINGTON RAND BUILDING
WASHINGTON, D. C.

HOLABIRD AND ROOT, ARCHITECTS

PHOTO: F. S. Lincoln

JANUARY - 1936
The upper floors of the Remington Rand building are sales, not office space, and the client considered it essential somehow to express this fact on the exterior. The result, as shown in the illustrations, was arrived at because the show windows not only carried out the sales space idea, but also permitted the display of the manufacturer's products. On the interior the large floor areas are divided up into show spaces, with access for the public by stairs and elevators. The first floor, given over to shops, was designed to permit maximum flexibility in planning. Exterior metalwork, both in the shops and show windows, is of bronze. Floodlights are placed between the two-story units for night advertising.
Built to meet an emergency, this relief building is planned eventually to serve as a school or community center. Plywood has been used for the exterior finish, with the design based upon a four-foot module, or the width of a single panel. Plywood, with the advent of waterproof binders, has become an eminently suitable material for exterior use, and this example is of particular interest because it is one of the first of its kind. With the exception of the front entrance, where stone-like monumentality is inappropriate, the building has a pleasantly simple wood character, and such details as the corner windows and the unassuming shelter over the freight door are excellent. Battens cover the joints of the panels, with smaller strips set between them; ostensibly for decoration, these superfluous members serve only to complicate the design and to disguise the actual size of the panels used. It is also questionable whether the windows are adequate for lighting the interior; should the building become a school they would certainly not meet the requirements for classroom use. Relief labor was used in the construction of the depot at prevailing union wages. The total cost of the building was $12,438, of which $6,190 was for materials, $6,071 for labor, and the remainder for office overhead. Due to delays in the allocation of funds, and to the rotation of work among various groups, the cost was probably higher than it would have been under a private contract.
TYPICAL CORNER WINDOW DETAIL

CONSTRUCTION OUTLINE

FOUNDATION
Walls
Columns or piers
 Frames—steel
EXTERIOR SURFACE
Veneer panels, 1/4 in. thick, 5 ply.
ROOF
Flat—4 ply tar and gravel
 Flashing
 Down spouts
 Galvanized iron
DOOR AND WINDOW FRAMES
Sash and frames
Doors and frames (interior)
 EXTERIOR PAINT
Siding
 Trim
 Sash

LATH AND PLASTERING
Lathing
Metal—boiler rooms only
Wood—balance
Plastering
Patent plaster—Standard
Finishing coat—Hardwall

INTERIOR WOODWORK
Fir

INSULATING
Outside walls—building paper over sheathing.

INTERIOR PAINTING
Floors—oiled
 Trim
 Doors
 Sash

WIRING
Cable—BX
Electrical fixtures—commercial units,
 General Electric.
Switches—flush, Bakelite

LIGHTING
Direct

PIPES
Steel

HEATING
Coal
 Boilers—low pressure steam, Kerrghard
 Radiators—unit heaters
 Piping—steel
 Valves—Crane
 Hot water heater—coil in boiler
 Stoker
 Thermostat and regulators

AIR CONDITIONING
Unit

THE ARCHITECTURAL FORUM
BUILDING MONEY

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

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Man of the Month Senator ROBERT FERDINAND WAGNER (see Page 64)
NEW LEGISLATION FOR BUILDING

Congress convenes to decide, among other matters, what size the Government's stake in Building will be. A look at the docket.

During the last three years the U. S. Government has appropriated to itself, directly through construction and indirectly through financing, a stake in Building whose size is without precedent in the history of the country. This very size has already pushed the question of Government-in-Building into a national issue, will dump it smack on top of the docket when Congress convenes on January 3. There it will incubate while Congress weighs pork and reform, finally to latch Laws.

Traditionally the pre-election session of Congress, with demagoguery in season and the minorities out of hand, presents an unhappy occasion for the passage of major legislation, is more adaptable to the dangerous business of back-scratching and log-rolling.

Agreed. There is, however, one reform in Government-in-Building about which almost everybody is already agreed: it should be disassociated from Relief. Time and again mud thrown at Relief has spattered its bunk-brother, Government Housing; and inefficient relief labor has weakened the case for low cost housing.

Already evident at the close of the last session and sure to predominate in the coming one is a general desire to limit bureaucracy by decentralizing as many Government functions as possible. On the housing front this will take the form of an effort to return to local authority the supervision and construction of local projects; on the financial front in a wider extension of credit to private enterprise by the Federal Housing Administration.

Peter Grimm. To present their side of these questions the real estate and mortgage men of the Building Industry have earnest, industrious Peter Grimm. Early last year President Roosevelt lifted him from the real estate business in Manhattan to perform just this function, and so shield Administration policies from the charge that they were framed without professional aid. Since that day Grimm has become deeply enmeshed in the complexity of Washington procedure, and has only just emerged into view once more, this time as Presidential liaison man with an assistant directorship in the all-embracing National Emergency Council.

Behind him as accomplishment Peter Grimm has left a series of Home Shows dotted over the U. S. With him, nearly ready to produce, he has a plan cast in the form of a recommendation to the President.

Prime point will be that all emergency agencies be tapered off as rapidly as possible, and that, conversely, the FHA policy of boosting private initiative be enlarged. A great deal less likely to catch Presidential approval will be his plan to reduce building costs. One method outlined is to offer exemption from the Sherman Anti-Trust Laws as an inducement to the formation of large units in the building industry, and to encourage these units to effect price agreements. The second method consists of turning the first neatly inside out by threatening to lower the tariff if building material prices are not cut.

PWA. Most immediate of all questions to be faced by Congress will be the disposition of the Public Works Administration. With the deadline for its contract-letting set at December 15, and then extended only to accommodate laggards, it has not a penny left to disburse. But adequately to supervise those contracts already let PWA must continue in existence for at least two more years. These are the considerations which weigh against the Administration's ardent desire to rid itself of an enterprise which had the misfortune to become too closely identified with Relief and so become the object of some of the country's most caustic criticism. That the Administration is unhappily not able to bury PWA at present is discernible in the announcement that the President will recommend to Congress that it extend PWA's life with an extra $850,000,000. However, none of this fund is presumably to be spent on new housing construction, is to be confined largely to the completion of contracts already let.

Government Housing. On June 25, 1935 Austrian-born Henry Ellenbogen introduced into the House a bill providing for a Government-finance, low cost housing program. Representative Ellenbogen was a Democrat, he had already attracted attention by trying to pass a rent regulation law for the District of Columbia, he likes to broadcast to his Pittsburgh constituency by air, and he had received the help of members of the National Association of Housing Officials in framing his bill. Despite these meaty considerations, the Ellenbogen Bill attracted only casual note; for in the same session Senator Robert F. Wagner, that redoubtable champion of social rights, had offered his own Housing Bill.

However, it developed that the Wagner Bill was a piece of request legislation. It had been framed by Helen Alfred, idealistic Secretary of the National Public Housing Association, an organization somewhat less practical than Representative Ellenbogen's. The Senator had offered it as a favor, did not like many of its provisions. During the summer he searched for something nearer his mind, was frequently and mistakenly accused of blowing up Housing for a political football.

Senator Wagner's search finally led him to the broadcasting Representative Ellenbogen. He looked over the Ellenbogen Bill, found it good, decided to back it. And this bill, with a few modifications for temperament, will be the most important and the best-sponsored piece of legislation to be brought before the coming session. Temporarily known as the Wagner-Ellenbogen Bill, it has been practically assured White House backing, already has the glamorous support of every responsible social planner in the U.S.

The Bill, in its present form, calls for a tax-free, 4 per cent bond issue of one billion dollars to be issued by a newly created Federal Housing Authority. With this money the Authority is to embark on a ten-year, Government-financed, low
cost housing program. To facilitate administration, the Federal Authority is to be supplemented by local Housing Authorities* whose personnel must conform to a minimum standard at the discretion of the Federal Authority. These local Authorities will probably be empowered to enter into direct contracts with the Federal Government, will also probably be empowered to engage directly in building. Money, in the form of loans and grants, will flow from the Federal Authority to the local Authorities. Grants are not to exceed 45 per cent of the total cost of the project, and together with the loans are to be applied against the cost of land and building only.

Interesting and highly indicative of a Washington trend already noted is the bill’s delegation of large powers to the local bodies, a delegation made on the theory that local housing is too complex an affair to be managed by a central bureaucracy.

Just where, on the Washington scene, this Authority would be hung is still a matter of conjecture. Best bet, however, is that it will be aimed at the Department of Interior, where it will be warmly welcomed under the Ickes wing. Because this bill has the earnest backing of Senator Wagner, perhaps the greatest social legislator in the U.S., because it will embrace with a Presidential Godspeed, because it is so all-important to so many people, its introduction into Congress will be the high sign for log-rollers, pork-barriers, and zanies to produce, for inclusion-at-a-price, their favorite ideas. Heaviest claims will come from rural Congressmen, who will demand a provision for low cost housing outside urban centers in return for their support.

FHA, FHLB. By far the lustiest of the new crop of Government agencies are the Federal Housing Administration and the Federal Home Loan system. Under the able administration of promotion-minded Stewart McDonald, FHA has progressed from the insurance of home mortgages, has lately begun to insure low cost housing projects. Meanwhile it has established itself as a first-class national mortgage system.

The Home Loan Bank, that independently-minded relic of the Hoover regime, is today equally well-accomplished. Administrator John H. Fahey, the hard-headed businessman who can boast of close to $100,000,000,000 worth of loans turned to building and loan banks, whose HOLC has worked so neatly that it has lately turned from a bank to a management corporation.

In these two agencies lie the hopes of the Administration for Building recovery, and to them more and more power will go. Title I of FHA, which guarantees lenders against loss in refinancing all types of remodeling, expires on April 15. Its renewal is expected.

Title II, which insures mortgages on houses and low cost housing projects, is probably to be enlarged to include commercial buildings.

Under the Act creating the Home Loan Bank system, the banks were empowered to issue debentures. Today, with capital flowing heartily through its corporate veins, HLB is thinking seriously about being the high sign for log-rollers, pork-barriers, and zanies to produce, for inclusion-at-a-price, their favorite ideas. Heaviest claims will come from rural Congressmen, who will demand a provision for low cost housing outside urban centers in return for their support.

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Representative Ellenbogen... fathered Wagner’s baby.

Thick as burrs on a sheep are the rumors that cling to these two agencies. Among the most seriously considered is one to the effect that PWA will eventually wind up under FHA. More spectacular, but none the less worth consideration is the whisper that FHA and HLB will merge into one omnibus force for Recovery. But while theirs are in the thoughts of the House, the function of the Permanent Board is expected to offer an amendment to the Home Loan Act reducing the rate of interest from the current 5 per cent to around 3% per cent.

Ickes. A powerful factor in gauging the success of many Recovery measures is the sometimes enigmatic, always strong-minded Harold Ickes, Secretary of the Interior, Chairman of the Advisory Committee on Relief Allotments, and PWA Administrator. His philosophy and his inclinations are by now well-defined: he is a long-planner. And his recent feud with WPA Administrator Harry Hopkins reveals with what fervor he is willing to battle for his ideas. Highly indicative of the type of legislation he favors are two bills which have already been introduced at his request.

The first calls for a permanent Planning Board, modeled on the planning boards which have been set up all over the country to help administer his PWA money. Acting in concert with these already existing boards, the function of the Permanent Board would be to compile approved lists of Federal projects, these projects to be held over as labor reservoirs against the next Depression.

The Ickes okay also lies on a bill to create a permanent Department of Public Works in the Department of the Interior, to serve in effect as the executive arm of the Permanent Planning Board.

Orphans. The eye of every Congressional session finds many a widely advertised measure still searching for responsible backing. Most noteworthy of these now is the proposal to limit mortgage interest to 4½ per cent, cash payments to ten. An old demand, this measure was recently revitalized by its inclusion in the recommendations made by the big-wig Committee for Economic Recovery. FHA and HOLC have already turned thumbs down on the idea.
WASHINGTON'S BUILDING BATTALION

MOVES OF THE MONTH

2. Frank Walker resigned his directorship to join the uncle’s chain of Pennsylvania theaters. Lyle C. Alversen, formerly solicitor for the Council, named acting director.

8. Deadline passed, with $675,000,000 provided in all for Building (see p. 77).

11. Returning from a tour of RA’s offices, Administrator Turner replaced his organization from four sections (suburban resettlement, rural resettlement, management and land utilization) to two: resettlement and construction. The latter sped work on its four satellite communities.

20. Deputy Administrator Catharine resigned to join a Brooklyn savings bank. Faint rumors talked of a split with those seeking to expand FHA’s low cost housing section. A next-in-line succession was predicted.

18. Insured remodeling notes and mortgages selected for appraisal passed the half billion dollar mark.

26. Prepared to issue rules for management and sale of its foreclosed property (see p. 77).
$6.05 PER ROOM IN MANHATTAN


Two years ago New York's ebullient Mayor Fiorello LaGuardia dedicated the New York Housing Authority to the construction of low cost housing. High land prices immediately hog-tied this body, and would have killed it aborning had not Vincent Astor come along with an offer to sell 35,000 sq. ft. of lower East Side slums for $35.50 the sq. ft. The Authority snapped up the bargain and thereby saved its life.

Last month the Authority, hale with accomplishment, opened eight red brick units on Astor's acre, and named them First Houses to mark their significance as New York's curtain-raiser on Government-financed low cost housing. Vastly titillating was the price-tag placed on First Houses: $6.05 per room, per month, lowest in urban U. S. housing history.

The story of the $6.05 room properly began with the Astor sale. For his land, priced at $189,000, the Authority gave Landlord Astor its 65-year purchase money bond and mortgage, an encumbrance bearing 1½ per cent interest the first year, 3½ per cent thereafter, and exempt from all taxes. To Bernard Baruch went $30,000 of the same for an island tract of 6,000 sq. ft.

First problem was the disposition of 38 bejaked tenements on the land. Empowered to build, the Authority elected instead to remodel, and made a start by tearing down every third tenement, dismantling a further group, gutting the rest. Land-in-use was reduced from 64 to 41 per cent.

The original bricks were used to build on the remaining foundations. New steel was used for center supports of all spans, for all main staircases. New twenty-year roofs were installed. Walls were made soundproof, doors fireproof. Three buildings were carried to four floors, five to five floors, all walk-ups. Heating and hot water are supplied from two central plants. These eight units were split into a total of 370 rooms, making 120 three- and four-room apartments. Average room sizes: living room, 11 x 18 ft.; bedroom, 11 x 12 ft.; kitchen, 7 x 14 ft. Amenities include built-in bathtubs, overhead showers, aerial outlets, electric refrigeration, high-oven gas stoves, incinerators. A definite luxury is the No. 1 white oak used for flooring. A large garden to the rear of the units is being landscaped.

Labor and material costs had originally been figured at $411,000 by the Authority. But by last month impartial pencils agreed with the New York Times in putting the construction bill over $775,000. To the Authority, intent only on providing Government-in-Housing pays Vincent Astor but not the S. and proves nothing. A look at First Houses, and some comparative costs.

First Houses: Old Backyards (bejaked—center rear) and New Construction. Above, Comparative Costs.
good quarters at rentals cheap enough for the lowest income group, this was of no concern: the $775,000 construction was being met by the Government. Income from rentals will pay interest and amortization on the land bond, maintenance, not bread, with its dough. For those interested in the possibilities of the breadscale, The Forum appends a cost-comparison of First Houses with Brooklyn Garden, a five-story walk-up apartment house with an average rental of $8.40, erected under the supervision of the New York State Board of Housing. (See table, p. 67.)

A building from which the last wisp of smoke was last month blown was Knickerbocker Village, Manhattan's $8,000,000 effort at privately promoted low cost housing (ARCH. FORUM, Nov. 1934, p. 386). Because its books carried an $8,000,000 RFC loan, Knickerbocker Village accounts were opened wide to the scrutiny of the Department of Labor, and that body was thus able to give the public its first look at the cost schedule of a large apartment building. (See tables.) Basic comparisons lie in the respective costs-of-building-per-room, and the square feet of land per room.

Knickerbocker Village was built by the Fred F. French Co. Completed in September, 1934, it consists of two twelve-story rectangular units containing 6,000 rooms at an average rental of $12.50. Construction, materials, and labor cost $8,216,899. Labor costs as developed in the tables include only that labor performed at the site of construction. Material costs cover material laid down at the site of construction.

These data are based on fireproof, multiple-story, elevator-equipped apartment house construction.

### FIRST HOUSES

**A typical floor plan**

<table>
<thead>
<tr>
<th>Class of work</th>
<th>Total cost</th>
<th>Labor at site</th>
<th>Material</th>
<th>Overhead and other</th>
</tr>
</thead>
<tbody>
<tr>
<td>All classes of work</td>
<td>$6,216,899</td>
<td>$2,019,838</td>
<td>$2,636,179</td>
<td>$1,580,882</td>
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<td>273,372</td>
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<tr>
<td>Masonry</td>
<td>931,830</td>
<td>466,281</td>
<td>435,376</td>
<td>61,173</td>
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<tr>
<td>Carpentry</td>
<td>392,315</td>
<td>131,101</td>
<td>288,553</td>
<td>46,901</td>
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<tr>
<td>Plumbing</td>
<td>578,998</td>
<td>178,996</td>
<td>314,376</td>
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<tr>
<td>Heating and ventilating</td>
<td>281,288</td>
<td>82,721</td>
<td>176,598</td>
<td>21,909</td>
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<tr>
<td>Lathing and plastering</td>
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<td>235,245</td>
<td>93,709</td>
<td>39,900</td>
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<tr>
<td>Roofing and sheet-metal work</td>
<td>39,091</td>
<td>19,070</td>
<td>19,538</td>
<td>5,483</td>
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<tr>
<td>Structural steel</td>
<td>616,300</td>
<td>66,947</td>
<td>376,167</td>
<td>153,093</td>
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<tr>
<td>Electrical work and fixtures</td>
<td>230,872</td>
<td>94,441</td>
<td>110,630</td>
<td>27,201</td>
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<tr>
<td>Painting and decorating</td>
<td>156,160</td>
<td>83,828</td>
<td>36,524</td>
<td>30,303</td>
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<tr>
<td>Lath &amp; plaster</td>
<td>157,180</td>
<td>25,555</td>
<td>109,866</td>
<td>720</td>
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<td>Tile, terrazzo, and bathroom fittings</td>
<td>90,178</td>
<td>40,194</td>
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<td>Weatherproofing</td>
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<td>29,410</td>
<td>23,582</td>
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<td>92,070</td>
<td>51,280</td>
<td>134,537</td>
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<td>15,382</td>
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<td>Architect's fee</td>
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<td>Financial and other charges</td>
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### Overhead and Profit

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<th>Class of work</th>
<th>Percentage spent for—</th>
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<td>Labor</td>
<td>Material</td>
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<tr>
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<tr>
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<tr>
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<tr>
<td>Carpentry</td>
<td>30.36</td>
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<tr>
<td>Plumbing</td>
<td>39.83</td>
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<tr>
<td>Heating and ventilating</td>
<td>99.41</td>
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<tr>
<td>Lathing and plastering</td>
<td>63.81</td>
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<tr>
<td>Roofing and sheet-metal work</td>
<td>44.83</td>
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<tr>
<td>Structural steel</td>
<td>14.11</td>
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<tr>
<td>Electrical work and fixtures</td>
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<tr>
<td>Painting and decorating</td>
<td>35.48</td>
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<tr>
<td>Elevators</td>
<td>16.86</td>
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<tr>
<td>Tile, terrazzo, and bathroom fittings</td>
<td>44.57</td>
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<td>Weatherproofing</td>
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<td>Manufactured metal products</td>
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<td>Equipment</td>
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<td>84.79</td>
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<td>Miscellaneous</td>
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### Manhours at site

<table>
<thead>
<tr>
<th>Class of work</th>
<th>Construction cost per cubic foot</th>
<th>Manhours at site per 1,000 cubic feet</th>
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<td>Miscellaneous</td>
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<tr>
<td>Financial and other</td>
<td>.000</td>
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**Knickerbocker Village: $6,000,000 Itemized**
REMODELING FOR PROFIT

WITH last year's revival of new construction, remodeling has lost some of its front page news value, has become instead a staple product of the current building industry. Solvent owners are remodeling their properties in numbers and with an ingenuity without precedent. This activity has produced, for the first time in U. S. building, an impressive accumulation of remodeling data, facts and figures which justify now recognized architectural practises.

In this and succeeding portfolios, The Architectural Forum will present remodeling case histories where the motive has been profit, where the architectural criterion is measured in dollars and cents. Too often these solutions show disregard of architectural quality. Improvement in remodeling technique will undoubtedly bring with it a realization that better designing brings better profits.
When the Brooklyn Savings Bank fell heir to this old Brooklyn mansion, it had long since decided that the best medicine for buildings of its type was to cut them up into smaller units. Architects Slee and Bryson modified this thesis by making duplex apartments of the third and fourth floors, thus eliminating that extra flight of stairs up which many a prospective tenant declined to trudge. Mortgage at foreclosure, $17,500; rents at foreclosure, none. Cost of remodeling, $20,000; rents after remodeling, $6,120.

So far as it went, the bank was logical in its treatment of the building's exterior. But new landscaping, elimination of the old stoop and substitution of a basement entrance for the bay window left the building not much more attractive than it was before.
The price of frontage in small apartment-and-store buildings habitually squeezes the apartment entrance to a dark, unlovely hole. To get prospects upstairs undiscouraged remodelers of urban property have frequently installed garden courts to dress up the alley-cursed rear entrance. Such a device was used at Floral Park, L. I., in the tight-packed row whose remodeled rear is shown above. Architecturally the results are not worth mentioning. But noteworthy is the fact that the East New York Savings Bank of Brooklyn has, for perhaps the first time, applied an urban solution to a suburban problem. Mortgage at foreclosure, $70,500; income at foreclosure, $7,536. Cost of remodeling, $41,200; income after remodeling, $15,300.
A Complicated Layout Problem Well Solved

A shift in fashion has drained wealthy tenants from many a multi-roomed apartment, left divided among those who can afford but a single room. Such was the fate of this block of Manhattan's Riverside Drive. To rescue it from the uneconomical tenancy of the single-room tenants, the Dollar Savings Bank had its layout redesigned in units sized to an income between that of the and the single-room tenants. The economical division of the long hallways is interesting. Rents at foreclosure, $161,500; rents at foreclosure, $28,000. Cost of remodeling, $64,000; rents a modeling, $43,000.
New Materials at Their Best in Commercial Remodeling

Remodelers have often shied at using new materials on the assumption that costs are too high. Yet in remodeling the exterior of this combined store and theater in Chicago, Architect B. Leo Steif secured for Owner O. E. Wilke a 33 per cent increase in income at a cost less than a third the value of the store part alone. The result demonstrates not only the potency of contemporary materials as an architectural adjunct, but also an excellent adaptation of the existing structure. Original cost of land and building, $75,000; rents before remodeling, $8,450. Cost of remodeling, $40,000; rents after remodeling, $10,600.
Bankers still shy notoriously from the modern in property. But the logic of economy has led Manhattan’s Franklin Savings Bank and F. P. Platt and Brothers, architects, straight to the plumbed line, the facade without embellishment. Paint and formica have been combined in a manner as inexpensive as it is appropriate. The increased height is largely illusion: the cornice has been raised less than a foot. The substitution of a transom for glass on the second floor is debatable. Mortgage at foreclosure, $33,000; rents at foreclosure, none. Cost of remodeling, $15,556; rents after remodeling, $5,900.
A HALT ON OVER-BUILDING

is called by New York's Mortgage Conference. A formula for guiding building money flow in practical application.

In ten out of fifteen recorded instances, stagnation in building has preceded a depression. Ergo, building stagnation is a prime cause of depression.

So runs a widely held theory. Among those who hold it, many think that what stops building initial is contraction in the flow of building money. When depression comes, the inhibiting factors multiply. Thus the fundamental question is why, quite seasonally over a period of years, do lenders close up shop and refuse to lend? I.e., why are building stagnation is a consequence of over-building, and over-building obviously resulting from the restriction in building money?

But last month there was concrete evidence that the ambivalent plan was working. In flatbush, the section of Brooklyn where construction centered, the figures were even more impressive. There the increase in the number of elevator apartment buildings and of 82 per cent in the number of 820 apartments.

Looking up the records, McKean found construction of such buildings proceeding at a rate over two-and-one-half times as great as in the next most active borough (the Bronx). For Brooklyn as a whole, there was a net addition of 9.7 per cent in the number of elevator apartment buildings and of 32 per cent in the number of 820 apartments.

In flatbush, the section of Brooklyn where construction centered, the figures were even more impressive. There the increase in the number of elevator apartment buildings figured 26 per cent, and in the number of 820 accommodations 55 per cent.

Following that, the Conference dug deep into what data it had, to find out what sort of demand there might be for the new apartments. Immigration and births were dismissed as unimportant factors for the immediate future. Into other possible sources of new tenancy, though, it probed, and with these results:

1. Migration from other boroughs. No evidence that it was taking place. The Real Property Inventory in September, 1934, counted fewer people residing in Brooklyn than did the Federal Census in 1930.

2. Shift in rent-paying levels. Business recovery seemed not well enough established to warrant the conclusion that a substantial number of families in Brooklyn would within a few months move from cheaper quarters to 820 apartments.

3. Marriages. In 1934 there were 24,747 marriage licenses issued in Brooklyn. In Brooklyn as a whole only about 2.1 per cent of the total families live in apartments of the 820 class. Applying this ratio to the 1934 newlyweds, it was estimated that there are only about 500 prospects for the new 820 apartments.

Exploring further, the Conference finally gave the records a thorough combing to find out how the new buildings were being financed. Mortgage financing was found to have made possible 52 of the 86 new buildings. Heading the list with twelve mortgages, totaling $81,314,000, were two local building loan companies. In twelve cases out of the 52, trustee institutions were financing the improvements to realize upon land on which they had foreclosed. In the other 40 cases, the loans represented in large part institutional investment in "building and permanent" mortgages.

In putting these facts before his constituents in August, Secretary McKean was careful to do so quite as matter-of-factly as he could. Purposefully he omitted making reference to Brooklyn's two U. S. housing projects: the Williamsburg PUB-financed slum clearance project, and the Joseph P. Day FHA-financed Brooklyn Beach apartment job. But so conclusive were his figures that he was led to state that "from the available facts it would seem probable that the new apartment buildings may not be rented without adversely affecting the tenancy in the existing compareable buildings."

Results. Not content to drop the matter thus, the Conference last month offered its members conclusive proof of its mind. This clinching evidence it gathered by making a survey comparing rentals and vacancies in October, 1934, with October, 1933. The study was presented as one "sufficiently broad in coverage to serve as a check on advance opinions." Its claim of this was in its coverage of approximations 100 new and old apartment buildings with accommodations for 4,533 families.

Summing up the survey's results, Secretary McKean worked slowly to a potent point:

"With certain exceptions, the new buildings completed this year have been renting reasonably well.

"Walk-up" apartments are better rented than in 1934 . . .

"The older elevator apartment houses priced at under $18 per room have fewer vacancies and better income than in 1934 . . .

"The older elevator apartment houses renting for $18 to $20 per room in areas where there has been little construction have fewer vacancies than in 1934 . . .

"But contrasting sharply with the improved conditions in the other types, rentals are about 7.2 per cent less and vacancies about 2.3 per cent more in the older houses renting for $18 to $20 per room in the areas where construction has been concentrated."
The tabulated facts (see box) showed a fall in monthly receipts for buildings in the construction areas from $35,912 to $30,033, or a drop of $5,879. Meanwhile in all the other types of buildings receipts rose during the year. As proof conclusive, the Conference was able with justice to call the check an illustration of "how accurately the effect of new construction can be foreseen—even before costly vacancies, rent reductions and concessions appear."

Conference members already have shown disposition to act constructively upon the facts and figures revealed. One quick to do so was Manufacturers Trust Company, big among Manhattan Commercial banks. Last Spring Manufacturers announced that it had set up a $5,000,000 fund for making temporary building loans, is one of the most active lenders in New York today. As a result of the Conference report, Manufacturers has definitely shut down its lending on Brooklyn elevator apartments.

Thus for the first time on any such scale has an attempt been made to measure the need for new building, and the results been called accurate enough to warrant positive action.

**Pattern.** The ideal community mortgage conference would be an organization spon-

<table>
<thead>
<tr>
<th>Type of Bldg.</th>
<th>Number of Blgs.</th>
<th>Total Apts.</th>
<th>Monthly Rent of Occupied Apts. 1934</th>
<th>Monthly Rent of Occupied Apts. 1935</th>
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<td>Walk-up Apts.</td>
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<td>428</td>
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<td>Elevator Apts.</td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>Rent less than $18 per room</td>
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<td>34</td>
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<tr>
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<td>3</td>
<td>325</td>
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<td>In Construction areas. Rent $18 to $20 per room</td>
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<td>815</td>
<td>33,912</td>
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<tr>
<td>Totals</td>
<td>75</td>
<td>3,285</td>
<td>$160,126</td>
<td>$158,421</td>
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</table>

**The Effects of Brooklyn's Over-Building Tabulated**

sored by every type of mortgage lending agency which is actually making building possible in that community. In Utica, N.Y., such concert as this has once been achieved (Arch. Forum, March, 1934, p. 240). In other centers it has only been approximated. New York's Mortgage Conference conspicuously omits building and loan associations, a group which has never shown much desire to participate, To Brooklyn's new and famed Group Five Mortgage Information Bureau (Arch. Forum, Aug. 1935, p. 159) as to the Greater Lawrence Mortgage Information Bureau, newly organized in Lawrence, Mass., only savings banks belong. Philadelphia's incipient Property Service, Inc. has a more heterogeneous group of sponsors, but is narrowly concerned with foreclosed property problems. New York's Westchester (county) Real Estate Conference has a roster likewise incomplete.

Like Brooklyn's Group Five Mortgage Information Bureau, the activities of which The Architectural Forum has outlined in detail, the Mortgage Conference in day-to-day chores offers many a service. Such detail work has proved quite logical, and undoubtedly is necessary to demonstrate at once the usefulness of such an organization as the Mortgage Conference to its members.
At present the Mortgage Conference's routine work divides up thus:

**Monthly Report on New Mortgages**

All new mortgages and assignments, made in New York, with rates of interest, terms, location, and former mortgagee are reported monthly to members. In addition to the detailed report monthly, new loans are summarized by interest rates so that members can be informed on current trend of rates.

**Monthly Report on Sales**

Card records of sales made in New York are maintained at the office of the Mortgage Conference, and transactions on which all information is available are reported monthly.

**Record of New Construction and Alterations**

All building activity in the five boroughs of New York is recorded at the office of the Mortgage Conference. Maps showing location, type, size and number of family quarters have been prepared and are kept up to date. A special card file is kept on remodeling jobs, which records their old and new layouts, their financial outcome and the names of the owners, architects and contractors.

**Reports for Use in Analysis of New Projects**

A special form of report which covers population data, nationalities, vacancies, rents and other new construction has been worked up and is being frequently prepared for use by institutions who are considering applications for financing new construction projects. Another form of report, outlining the experiences had by life insurance companies, a cash value, nor salable in the current market at a price equal to ledger value plus costs

**Card Record of Mortgages Held and Properties Owned**

Card forms are now being prepared by the institutions on which they are supplying information on each mortgage and each parcel of real estate owned. The completed cards will contain the information necessary for analyses of the exact status of mortgages on each type of property in any part of the city. Considered in relation to a possible new mortgage investment, the record cards make it possible for the prospective investor to have at his disposal a complete record of what has happened to similar investments on the same type of property made in the particular area under consideration. Through periodic revision they will provide a constantly up-to-date picture of the effect of changing conditions on mortgages.

**Monthly Bulletin**

By means of a monthly bulletin, the reports on new mortgages, sales and building activity are distributed to members. Legislation affecting realty and mortgages, special studies made from card records on mortgages held and properties owned, and evidences of over-building indicated by the records of building activity are special topics covered.

**HOLC PREPARES**

management regulations for its 3,500 foreclosed properties.

**PWA RESUME**

as Administrator Ickes reaches the end of a $4,150,000,000 tenet.

Last Fall the President set December 15 as the dead-line for all contracts to be awarded by his prime spender, the Public Works Administration. Contractors' offices were immediately swamped by under-the-wire projects, forcing an extension of the dead-line for laggards. But the end of 1935 to all intent, marked the end of PWA's second phase. Unless its till is replenished by Congress in the coming session (see p. 64), PWA will never spend again, will exist only long enough to supervise the completion of all its projects. In three and one-half years PWA has spent 4.15 billion dollars, just where and how only a handful of bureaucrats can say.

"I recommend that all building and construction activities of the Government be consolidated into an independent establishment to be known as the 'Public Works Administration'," said President Hoover late in 1931. Roosevelt slipped his predecessor's idea into the NRA under Title II, gave it a $3,300,000 birthright, and pledged it to relief.

Since that day, PWA has:

- Been replenished to the extent of $400,000,000 by the Works Relief Bill of April, 1935.
- Given $400,000,000 to CWA, $323,000,000 to CCC, many million to stray bodies.
- Undertaken 23,500 projects, of which 18,400 are completed.
- Sold $220,000,000 of its bonds at a profit of $2,300,000.
- Changed vice-heads three times, from the owlish Henry M. Waite, to the driving Philip Fleming, to the plain-speaking Horatio M. Hackett.
- Disbursed a total of 4.15 billion dollars, on everything from Boulder Dam to White House additions.
- Spent 675 million dollars in the building industry.

These 675 million dollars were spent over a 32-month period and represent about two and a half times as much as the Treasury Department used to spend on U. S. building, over an equal period. Of that sum, four-fifths have been allocated in loans and grants to cities and municipalities for building. One-fifth has been allocated for low-cost housing. It will take at least another two years before the final penny is used.

**Ir's job of ridding the U.S. of its $3,000,000,000 foreclosure headache 95 per cent done, the Home Owners Loan Corporation last month prepared to say just how it planned to solve its own foreclosure problem. Ever since John H. Fahey, a high-principled Boston banker, became its head late in 1933, HOLC has made good on a promise to proceed along strictly business-like lines. One result: 3,500 foreclosures upon delinquent mortgagors, up to November 30.**

To administer its foreclosed property, HOLC month before last set up a Property Management Division, installed Col. Harold Lee, former title company executive of New York City at its head. Thus finally came into existence the agency which, to the reality world, is the most important of any formed in Washington since creation of HOLC itself. For with the thousands of properties of which HOLC will inevitably become possessor it could easily disturb the market which IOHC was created to restore.

Last month a preliminary draft of the Property Division's regulations, slated for probable acceptance in its entirety, disclosed these facts:

A property readily salable at a price equal to or greater than its ledger value plus costs, will be placed on sale.

A property not readily salable in the current market but promising future sale at a price at least equal to its ledger value plus costs will be held off the market and rented, its operating statement reviewed semi-annually for sale.

A property not salable in the current market at a price equal to ledger value, nor salable in the current market at acceptable prices, but promising sufficient advances to justify holding will be rented and reviewed semi-annually for sale.

A property not salable at its ledger value in its present condition and not worthy of repair will be sold or demolished.

Certain brokers will be picked locally to manage properties before and after rental. Other brokers will be picked locally to sell properties.

In accordance with a method commonly used by life insurance companies, a cash payment of at least 10 per cent, with the remainder covered by a fifteen-year mortgage, will be the most lenient sales plan allowed. Only where this 10 per cent fails to cover re-foreclosure costs will the charge be higher.
**$20,000,000 FOR HOME MORTGAGES**

is Investors Syndicate's schedule for 1936 as it keeps up with 240,000 investors.

One day last month a Minneapolis concern named Investors Syndicate brought itself forcibly to the attention of the Building Industry with the announcement that during the next twelve months it had every intention of investing in home mortgages to the tidy extent of $20,000,000. Anyone curious enough to wonder how an institution which was obviously not an investor could make such a pronouncement at such a time might turn with profit to the story of John Tappan and his Idea. It's worth the telling.

**Beginnings.** It was the year after the panic of 1893 when John E. Tappan, a bright and cautious citizen of Minneapolis, put up most of the $2,600 capital for Investors Syndicate and modestly installed himself as secretary and treasurer.

Briefly and baldly John Tappan's idea was to sell to the general public certificates with a guaranteed income. The money derived from the sale of these certificates, he invested in the customary channels of bonds, loans and mortgages, but with this basic variation in proportion: 90 per cent went into residential mortgages. In the next 20 years that idea accumulated for Tappan's Syndicate resources of $88,000,000 while the investments in residential mortgages climbed to that unconventional high of 90 per cent of the portfolio. In 1914 Investors began to expand beyond Minneapolis. It opened offices in both Dakotas, then in Iowa, Kansas, Missouri, and Colorado. By 1934 resources had climbed to a total of $10,090,000 in a portfolio topheavy with 75 per cent mortgages. And presently the unbalanced portfolio began to teeter.

The word went around that Investors Syndicate has 240,000 investors today, has new ones rolling in at the happy rate of 15,000 a year. Its 42 offices straddle 28 states, Alberta, and British Columbia. Their money currently costs Investors 4.4 per cent and up until now has been promptly invested at an average rate of a little better than 6 per cent. Last year this resulted in a net profit of $250,000. As of December 31, 1934, resources stood at $61,800,000. A breakdown shows:

- **Cash** ...................... $ 3,747,454
- Bonds and marketable securities .................. 20,279,380
- Total liquid assets .......................... 24,086,775
- First mortgages on real estate .................. 23,372,456
- Capital, surplus, reserves ...................... 6,947,833
- Cash value contract liability ................... 44,412,093

**Modus Operandi.** One thing every investor in the Syndicate's so-called "contracts" (they used to be certificates, a term which now for obvious reasons is taboo) is made conscious of is that his company is out of cash. It now has been promptly invested at an average rate of a little better than 6 per cent. Last year this resulted in a net profit of $250,000. As of December 31, 1934, resources stood at $61,800,000. A breakdown shows:

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- Cash value contract liability ................... 44,412,093

In the face of such criticism, Investors Syndicate remains unmoved. Behind it, during a Depression which cracked wide open many of its competitors, Investors has an excellent record. In 1932, its foreclosed property was being sold on a fifteen-year basis. Investors' Syndicate remains unmoved. Beliind it, during a Depression which cracked wide open many of its competitors, Investors has an excellent record. In 1932, its foreclosed property was being sold on a fifteen-year basis.
CREDIT FOR BUILDING LOOSENS

as Home Loan Bank and insurance funds march to work. Profit prospects continue high, with rising rents and stable costs.

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Write for Complete Data and New Catalog of Dumb Waiters and Elevators.

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140 West 15th Street, New York, N. Y.
LOW-BRACKET HOUSES BY BOEING

renew Seattle's interest in the airplane maker's mid-depression subdividing venture. The houses and the realtor who conceived them.

A HIGHLY resourceful man is William Edward Boeing of Seattle. At the close of the War which made his name synonymous with airplanes, there was a considerable lull at the Boeing plant. Air mail was young; air transport unborn. Aviation's Boeing took a long jump; began to manufacture furniture. He was just about to diversify further and manufacture toys when the return of airplane orders put him back into the aviation business.

Last month came news which proved that Mr. Boeing was still able and willing to diversify. In a pleasant subdivision near Seattle the last of fifteen houses was sold. Owner and developer of the land was William Edward Boeing.

Inception. To plane-maker Boeing early last Spring went Realtor Hugh Russell. With him he brought a development program. Alert to the possibilities of the Federal Housing Administration finance plan, Hugh Russell had carefully studied Seattle Real Property Inventory figures, had spied an opportunity. On two very pertinent facts from the RPI he built his hopes: (1) 80 per cent of the residences in metropolitan Seattle cost their buyers less than $5,000; (2) 70 per cent of these low-priced houses were ten years old or older. Realtor Russell saw in this a ready market for the builder who could keep his prices down.

Of at least one mistake in overshooting this Seattle market he was well aware. Blue Ridge, a subdivision northwest of town, bore five brick houses which, built in 1928 and priced at $20,000 to $23,000, had failed to sell. Learning that houses and land belonged to the famously open-minded Mr. Boeing, Russell saw his chance—a tract, a backer and an argument for low-priced houses.

Although a flat failure, Blue Ridge was otherwise greatly blessed. Mr. Boeing had bought its 170 acres in 1928, had proceeded in 1930 to build his five expensive houses. As U.S. speculative houses went in 1930, these were good houses. Easy to see in their quality materials and good construction was the fine hand of the manufacturer whose airplane works are plastered with an admonition all too little heeded by the ordinary subdivider: "Don't Cover Up Your Mistakes!"

Looming high above it from across adjacent Puget Sound, the Olympic Mountains provided a backdrop fit to warm the cockles of any subdivider's heart. The acreage had a variegated terrain and trees aplenty. Well-located within convenient distance of downtown Seattle, a golf club, a park and schools, it was completely platted, and all utilities were installed. Everything was lovely, except that the five houses hadn't sold.

Sensing that only by erecting more houses could Mr. Boeing ever reawaken interest in Blue Ridge, Realtor Russell also realized that if houses were going to be inexpensive, they would have to be well designed, in order to preserve the property's potentialities. This requirement led him to his architect friend, George Wellington Stoddard. Accompanied by the latter's sketches, Realtor Russell's idea, packed into a brief, was shortly thereafter submitted to Mr. Boeing. Mr. Boeing was definitely interested.

There resulted from that idea not only ten of the most acceptable speculative houses ever built in Seattle, but, more important to those concerned with subdivision practices, a new and increased interest in Blue Ridge, conforming in almost every particular with Realtor Russell's predictions.

Houses. Ten houses, all from simple English and Colonial designs save two of a restrained Modern type (see cuts), comprise the summer's building in the

$6,500 Each in Seattle's Blue Ridge
Boeing subdivision. Realtor Russell felt that "on this market there is a greater opportunity to sell homes at a price between $8,500 to $8,500 than in the range from $8,500 to $8,500, as the families in the market for lower priced homes have not yet adjusted themselves financially after going through the Depression." He therefore aimed his campaign at the group most likely to possess the necessary 20 per cent "down" by building houses in the higher price class.

Each house was carefully planned, with every short-cut and saving Architect Stoddard could devise to furnish a well-built home at minimum cost. Taking satisfaction in the fact that "we are selling these completed residences for at least $8,000 under what the purchasers could duplicate them for," Realtor Russell could show prospective buyers such a luxury as an oil-burning heating and air conditioning unit, providing filtered air and automatic humidification, in every house. Other features: Standard plumbing fixtures, Imperial washable wall papers, hardwood floors throughout and fully shrubbed front yards.

Opened for inspection early in June, the first of the houses drew 8,000 visitors, 1,000 of whom were asked to indicate their likes and dislikes for guidance in future building. A large majority liked the no-basement feature, desired at least one bedroom downstairs, were not particular about two bathrooms, but wanted an extra toilet and lavatory. Practically all wanted a two-car garage, and a breakfast room as well as a dining room. The majority desired a den in preference to a recreation room. Almost with unanimity they registered their desire for some type of community club development.

Only one point on which experience has proved the voters over-bullish was the no-basement feature, which had been incorporated in the first house to test out what seemed a national trend. Looking into construction costs, and sounding out people further, Messrs. Boeing, Russell and Stoddard decided to give the remaining houses basements.

"No more no-basement houses for us," says Realtor Russell. "On first inspection they appeal highly to the public, but when a family is serious in purchasing a home they have many problems such as drying clothes in winter-time, storage of garden tools and garden furniture, where am I going to put my workshop, and will the floors be damp and are they hard to heat? We have found that in the properly constructed no-basement house you have to carry your grading and concrete work down to solid bearing, when in most cases a very little extra cost these same footings can be carried sufficiently deep to provide a full cement basement."

**Results.** With all ten small houses sold last month, Blue Ridge's sponsors planned to build another ten for next year's sale. Most of the houses sold were financed by fifteen-year FHA loans covering 80 per cent of the purchase price. Among the first to be sold were the two incorporating Modern features, and others like them are planned for the next crop.

In the houses already built, profits were subordinated to the task at hand—that of finding occupants and creating the highest possible standing for Blue Ridge at the slightest cost. The homes to be started in January will be of the $8,000 class, should prove more profitable to their builders. Particularly pleased was Subdivider Boeing with the final sale this summer of all five of his original brick houses.

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Webster Moderator System
Improves Service in N. Y. Commerce Building
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REALTY CORPORATION

Heating Costs in 31-Story Building Reduced $3,651
In Single Season

**SYSTEM PAYS FOR ITSELF**

New York office building owners have discovered that the Webster System pays its way in a multi-family rental building and an advantageous tenancy. Here are the facts:

- Aupal Heating System, part of the Webster System, is an energy conservation device that reduces steam consumption.
- The System cuts down on service calls, providing a more reliable and comfortable living environment.
- The reduction in heating costs translates into a lower monthly rental price, making the building more competitive in the market.

**Contact:**

Webster Heating, Inc.
444 Madison Avenue, New York 17, N.Y.

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**Building Money**
Critics thought it likely that the great American school of design, if and when it comes, would be found at one of the older universities or in a center like Cranbrook rather than in a WPA-financed project. To these Mr. Rohde could point out with satisfaction that during the first week of its existence his school was over-enrolled by 75 per cent.

FORDYCE-HAMBY HOMES IN CONSTRUCTION

Wychwood, a Westfield, N. J., subdivision which advertises itself as the most progressive town on the Central Railroad of New Jersey, has, in common with most U. S. subdivisions, not been particularly progressive in its architecture. Most of its homes have been romantic remembrances of Europe or straight, although good, U. S. subdivision architecture. Lately, however, Wychwood has been developing further and in so doing has turned to newer architecture. Two of the Fordyce & Hamby designs discussed in the main body of this issue of The Architectural Forum, Plans B and E, are scheduled for construction in Wychwood this year. Plan B will go into a group of twelve houses which will also include a "Wychwood Good Housekeeping House" designed by Dwight James Baum and appearing in the January issue of that magazine, and the first prize winning house which J. André Fouilhoux designed for the New York Chapter of A.I.A. competition (Arch. Forum, Aug., 1935, pp. 12 and 22). On this latter house Fordyce & Hamby made certain alterations. The Plan B house, in this group, will be used in several variations of position and exterior. The Plan E house will be built as the first of a new group in the development.

Arthur R. Rule, president of the Wychwood Corporation, hopes to build his new Fordyce-Hamby houses at approximately 35 cents a cubic foot. This should bring the costs of the houses to about $8,525 for Plan B and $8,750 for Plan E. With construction slated to begin this month, Wychwood promises to afford one of the year's most stimulating experiments in current subdivision practice.

AMERICAN IN LONDON

From England, land of the lusty Royal Institute of British Architects and of the equally lusty slogan, "Buy British," came surprising news last month. In Earl's Court, long known as a London amusement center, was going to rise a $9,250,000 auditorium, financed by British capital but designed by U. S. architects and built by U. S. contractors. Bearer of the news was Gilbert P. Hall of Holabird & Root who returned to Chicago last month from three months spent in London. With him he brought the sketch for the auditorium's facade which he designed at the request of C. Howard Crane of Detroit, architect for the building. Mr. Hall designed both exterior and interior of the triangular building which will contain 42,600,000 cu. ft. and will accommodate 25,000 spectators at sporting events and such big expositions as the forthcoming British Industries Fair, Ideal Home exposition, Motor show—all scheduled for 1937. Contract for the building was awarded to Hegeman-Harris of New York and Chicago. The building will be of reinforced concrete with a finished surface, painted a light stone color and floodlit. It will have a roof garden, two to five floors of office space over the three entrances, a swimming pool under the convention hall, escalators and cantilevered restaurants along the sides.

Gilbert P. Hall on his U. S. return last month accepted an appointment in charge of design in the Housing Division
Macbeth "Monax" white diffusing glass cylinders and rolled flat sheets afford the widest opportunity for uniquely beautiful designs in lighting fixtures and special installations. Not only are they adaptable for beautiful, original models but they also assure even diffusion and adequate efficiency without spotty illumination. "Monax" Cylinders and Sheets are available in a wide range of diameters and lengths. Write today for complete details.

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During the past five years, the general public very definitely has become "temperature conscious."

Anticipating that this growing desire for greater personal comfort was soon to mark a new popular trend in building design and appointments—the Fulton Sylphon Company, four years ago, began a planned program of development:

1. To redesign and further refine all existing Sylphon control equipment serving this field.

2. To materially enlarge this line so that they might offer the architect and heating engineer the most complete assortment of instruments of advanced design from which to select the exact solution to each individual temperature control problem.

The result is evidenced in a series of bulletins which should be in your files.

Ask for your copies.

INDIVIDUAL ROOM TEMPERATURE CONTROL
Bulletins AA-255, AA-519.


SERVICE HOT WATER SUPPLY CONTROL
Bulletins AA-29, AA-569.

DRINKING WATER TEMPERATURE CONTROL

FULTON SYLPHON CO.
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OWENS-ILLINOIS GLASS MASONRY

Combines the important functional advantages of light transmission and insulation with new and modern design opportunities.

- Something new—something better—something inspiring—fashioned from a time-tried material. That's why Owens-Illinois Glass Block is being so enthusiastically accepted everywhere. Whether used for residential, commercial or industrial building, glass masonry affords new properties unobtainable in any other one building material.

Until now, buildings designed for the most possible natural light meant high heat loss—while buildings with walls of low heat conductivity required much artificial light. With diffused light transmission and effective insulation, Insulux Glass Block has excellently solved that problem—and in addition gives the architect a building material which allows him to open up new channels of architecture and design.

Owens-Illinois Glass Block has many other important characteristics. For reference you'll want the full details in your file. Write for the new Insulux Glass Block brochure.

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offices and an industrial design manufacturing plant at 244 West 23rd Street, New York City. In 1930 he won a $5,000 Westinghouse Electric and Manufacturing Co. prize for the design of a radio cabinet.

Named Director of City Architecture of Philadelphia was Miss Georgina Pope Yeatman. A Democrat appointed by a Republican mayor, Miss Yeatman is the city's first woman cabinet member. Her job carries a salary of $8,000. She was graduated from the University of Pennsylvania in 1909, took a Bachelor of Science degree in architecture at M.I.T., practiced architecture in the Philadelphia firm of Bissell & Sinkler, of which one of the partners, John P. Sinkler, was Director of City Architecture until her appointment. Miss Yeatman, a licensed aviator, announced her readiness "to cooperate with the Federal Government and all other agencies in advancing slum clearance, housing projects and modernization of ancient and decrepit dwelling areas." Philadelphia's new housing consists of the Carl Mackley Houses (apartments), W. Pope Barney, architect, a limited dividend project; and PWA's Hill Creek Park project for one- and two-story row houses and two-story flats, W. H. Thomas, architect, for which the foundation contract has been awarded.

NOW OR NEVER...

THE HOUR is at hand. Opportunity is at the door. Engineers and architects, contractors, distributors and manufacturers are on the threshold of renewed prosperity through the latest and greatest developments in heating, ventilating and air conditioning. The extent to which you and your associates profit, depends upon the care and thought with which you view, study, analyze and compare the exhibits at this Fourth International Heating and Ventilating Exposition, — America's greatest AIR CONDITIONING EXPOSITION.

Keep abreast of progress. Be a leader in the race. The pace is swift with many able contenders. The prizes are large and numerous. Now or never! To stay in the race, head for Chicago in January:

The Architectural League of New York, 115 E. 40th St., will hold its fiftieth exhibition in February. This year the American Institute of Decorators will join in the exhibition.

Christopher Grant La Farge, architect for the Cathedral of St. John the Divine, has been named 1935-36 lecturer for the Charles T. Mathews Foundation, Columbia University.

New York University is offering a series of courses on building laws in New York City, plan reading and estimating, specifications, air conditioning, new materials. Information from Dean E. R. Bossage.

The University of Illinois announces the twenty-third competition for the Francis J. Plyn Fellowship in Architecture. This is open to all architectural graduates in the University who are U. S. citizens under 30 as of June 1, 1936. Fellowship value is $1,200.

H. B. Meller, authority on air who since 1923 has headed the air pollution investigation at Mellon Institute of Industrial Research, has been appointed managing director of Air Hygiene Foundation of America, a group formed to conduct research into all problems of air hygiene. Assisting him will be Dr. F. F. Rupert, physical chemist, and Dr. Samuel R. Haythorn, professor of preventative medicine at the University of Pittsburgh.

EXHIBITIONS, COMPETITIONS, SCHOOLS

Under the auspices of the American Society of Heating and Ventilating Engineers.

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Fourth International Heating & Ventilating Exposition

Forty-fourth International Heating & Ventilating Exposition

Come. Examine. Compare. Discuss. Assimilate

The Architectural Forum

Erratum

In the section of the December issue devoted to prefabrication, p. 573, the unit panel construction system was erroneously attributed to Biting, Inc. The firm name is Bitting, Inc.
Largest thoroughly air conditioned structure of its type

...is the St. Louis Auditorium shown above which seats over 17,000 people and in which Sturtevant Fans and Air Washers are used. Including supply and exhaust air, as well as air supplied by the Sturtevant Unit Ventilators, a total of about 2,000,000 cubic feet of air per minute will be handled by the Sturtevant Equipment.

14 Sturtevant Fans supply 980,500 c.f.m. of fresh air, 2200 tons per hour.
32 Sturtevant Fans exhaust 840,000 c.f.m. of air, 1825 tons per hour.
14 Sturtevant Air Washers have a total capacity of 980,500 c.f.m.
27 Sturtevant Unit Ventilators supplement the above equipment.
101. LIGHT INTENSITY GUIDE

The H. H. Robertson Co., skylight manufacturer, has developed an ingenious method of demonstrating to industrial prospects the difference in intensity between any stated number of foot-candles. In industrial buildings a skylight installation must be planned with great care due to costs and

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AEROFIN
FAN SYSTEM HEATING AND COOLING SURFACE

TREASURES of incalculable value must be protected against risk of damage. That was one of many reasons why government engineers selected Aerofin, the dependable light-weight fan system heating surface, for the Congressional Library. Long experience had proven that they could rely on Aerofin to give superlative performance. Professional technicians everywhere have found so, too. They know that Aerofin is the last word in modern heating service.

Whether in the imposing edifices of the government in Washington, famous public buildings and auditoriums or more simple installations, Aerofin always lives up to the most exacting requirements.

A complete line of equipment for heating and cooling is at your service. The home office in Newark or any of our branch offices will gladly send complete descriptive literature or render prompt personal and efficient technical co-operation. Simply write to the address below.

102. STRIP OUTLETS

A new system of surface wiring has been developed by the National Electric Products Corp. The trade name of this product is “Plug-In” Strip. It can be run along the wall at any required height and provides outlets at intervals of six inches throughout its length. It consists of a zinc-treated channel with a bakelite cap which has plug openings every six inches. It is manufactured in one to five foot lengths, each unit being complete and ready for installation. Fill-In strips are also provided so that any size room may be wired conveniently. Elbows, couplings, and a junction box complete the system. The thickness of the strip is that of ordinary baseboard and may readily be incorporated in the baseboard.

103. PUMP

Centrifugal pumps for handling solid materials in suspension, gritty liquids, and liquids containing stringy material are now being made in a number of sizes by the Worthington Pump and Machinery Corp. They are small in size, the greatest overall length being not more than twenty-three inches. They are available in iron and bronze and for special services, as in chemical plants, special materials such as stainless steel are obtainable. These pumps are recommended for use in chemical plants, breweries and distilleries, canneries, for sewage and irrigation, and for sump pumping.

104. CONTROLLED ZONE HEATING

The Hoffman-Talmadge Zoned Control Heat System operates on the principle that large amounts of steam can be saved by eliminating the over-heating of buildings. It modu
When you specify Brigsteel Beautyware Bathtubs you have the satisfaction of knowing that you are giving your customers many advantages they can get in no other bathtub.

Only on Beautyware can you get two colors, or three colors— or as many as you want. Only on Beautyware can you get the patented one-inch Lip Flange which makes tiling-in or plastering simple and easy, perfectly water-tight and permanently satisfactory. Only on Beautyware can you get the

Embossed Serpentine Bottom, with the patented wave-like tread that permits a foothold and reduces accidents—ideal for shower purposes.

And only in Beautyware can you get light weight, an important point, both in remodeling and new building.

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We will gladly work with you. Be sure you see the new Brigsteel Beautyware before you specify any plumbing fixtures.
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- The rustlessness and tarnish-resistance of stainless steel trim keeps the store face clean and attractive. 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 gleaming beauty. Modernization of store fronts with this metal brightens the customer's outlook as well as the store's... For twenty-nine years Electromet has pioneered in the field of ferro-alloys and alloy steels. The information on stainless steels and other alloy steels thus developed, together with the further help of Electromet Engineers in selecting suitable materials for your designs, is yours for the asking. A request today on your letterhead will bring it without obligation.
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an economical, distinctive floor for small homes

The variety of patterns, colors and qualities available in Sloane-Blabon Linoleum gives you an opportunity to create a really distinctive floor, no matter how small the room. Illustrated are a few small-home rooms which owe their distinctiveness in large part to the use of Sloane-Blabon Linoleum. For pattern reproductions, samples, etc., write Sloane-Blabon Corporation, 577 Fifth Ave., N. Y.
Know that the 
fireplace
will be built
as You Design it!

SPECIFY Heatilator construction for your fireplaces and insure their success.

The Heatilator is a metal form for the masonry, including correctly proportioned firebox, damper, down-draft shelf and smoke dome. Smokeless operation is assured. Construction is greatly simplified—practically standardized. And, being hidden in the masonry, the Heatilator does not limit mantel design or the type of materials used.

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The Heatilator is the ideal spring-and-fall heating unit for homes and camps—year 'round in mild climates. The firebox of the Heatilator is a hollow heating chamber, with air ducts at top and bottom on both sides. Cold air is drawn from floor level into this heating chamber—warmed—then circulated to every corner of the room and to adjoining rooms. The result is greater efficiency, greater comfort, and a worthwhile saving in fuel bills in both spring and fall.

There are thousands of Heatilator Fireplaces now in successful use in all parts of the country. Heatilators are sold by leading building-supply and lumber dealers—with stocks in principal cities for quick delivery. Available in a wide range of sizes. Write for complete information.

HEATILATOR COMPANY
541 E. Brighton Ave.
Syracuse, N. Y.

Heatilator Fireplace

PRODUCTS AND PRACTICE
(Continued from page 40)
lates the steam to each section or zone separately, but also heats the far and near radiators uniformly regardless of whether little or full heat is necessary to fit the requirements of comfort. A number of these types are available thermo-

satically, centrally, or manually controlled. Control boards are provided and can be used with automatic clock operated systems which arrange the program of operation of each zone weeks ahead of time, if required.

105. AUTOMATIC SPRINKLER
The Grinnell Co. announces the Dura Speed Convector Type Sprinkler, a device claimed to be exceptionally durable as well as fast in action. Only a small amount of solder is ex-

posed, and that is protected by a coating of corrosion-proof wax. A new feature called a heating collector has been intro-
duced which gathers convected heat, conducts it to the solder, thereby hastening its melting.

106. PLASTER
Granitex, a new white finishing plaster, has been an-
nounced by the American Building Products Corp. This preparation contains no lime, acids, or magnesite, and its primary advantage is that it can be painted or papered within four to seven days after plastering without damage to the decorative material. It is claimed that this material is easier to work than customary finishing plasters, and that it has a high resistance to cracking.
AIRCO WELDED PIPING is a blessing to any building ---

Welded throughout with AIRCO gases, apparatus and rods, the steam piping in this magnificent church is free, for all time, from the slightest possibility of leaks and the trouble and damage they cause.

And with this most desirable result go these other physical and economic advantages of welded piping: tremendous reduction in the weight of pipe and fittings; fewer fittings required; work of insulating greatly simplified with large savings in time, labor and material; lower operating costs due to the smooth, obstructionless interior and the long, graceful turns which minimize friction and turbulence.

All of these advantages are explained in our booklet "The Facts About Welded Piping", which also contains complete Pipe Welding Specifications. We'll be glad to send you a copy on request.

AIR REDUCTION SALES COMPANY

GENERAL OFFICES: 60 East 42nd Street, NEW YORK, N. Y.
DISTRICT OFFICES and DISTRIBUTING STATIONS in PRINCIPAL CITIES
MANUFACTURERS’ PUBLICATIONS

Among the manufacturers’ publications recently received, of interest to the architectural profession, were the following:

107. GLASS
Data sheets on the physical properties of Aklo glass, and dealing with its practical application for refrigeration, domestic work, etc., have been received from the Libbey-Owens-Ford Co.

108. VALVES
A series of folders have been received from the James P. Marsh Corp. describing its new air and vacuum valves.

109. CAST STONE STANDARDS
The Cast Stone Institute has recently issued a recommended commercial standard for cast stone, and colors and finishes for the material.

110. FIRE ALARM
The Gamewell Co. has issued a new booklet describing the Dualarm system for schools which, in one operation, gives the signal which empties the school of children, and calls the Fire Department.

111. MICARTA
A new catalogue has been received from the Westinghouse Electric and Manufacturing Co. describing in detail methods of application of this material, with many photographs of actual installations.

112. STAINLESS STEEL
The “Stainless Prince of Steels,” a very complete treatise on stainless steel with photographs of various types of applications and comprehensive lists of its uses, has been published by the Chemical Foundation, Inc.

113. VENEERS
The American Walnut Manufacturers Assn, has put out for distribution to architects a booklet on various types of veneers, and illustrated with typical photographs.

114. GRADUATOR SYSTEM
A bulletin from the Sarco Co., Inc., has been received which describes the company’s new system of automatic temperature control for large buildings.

115. GENERATORS
The Allis-Chalmers Manufacturing Co. offers a new catalogue, No. 1163A, on engine type generators, switchboards, and other auxiliary equipment.

116. MASONRY ANCHOR
A folder has been received from the Kalman Steel Corp. illustrating the use of this company’s anchors between concrete surfaces, and masonry veneers.

117. CONVEYORS
Free catalogues have been received from the Standard Conveyor Co. describing its pneumatic tube systems, and various types of conveyors.

118. AIR CONDITIONING
The Fox Furnace Co. presents its line of home air conditioning equipment in a new catalogue.

(Continued on page 48)
PAINT MILEAGE, and lots of it, is assured to your clients when Aluminum Paint is used for the first coat on their new homes. This extra mileage comes from the longer life in Aluminum Primer itself and the longer life it gives to the top coats of paint.

Aluminum Primer, by the "leafing" of its millions of tiny flakes, forms a continuous coat of metal protection which blocks the destructive action of the sun's rays and retards moisture penetration. The top coats retain more oil and have greater weather resistance. Specify this extra PAINT MILEAGE.
119. CONCRETE
Two new catalogues from the Armored Concrete Corp.,
offering suggested new uses for this well known product,
and containing data sheets for all types of use.

120. BELTING AND HOSE
From the B. F. Goodrich Co., a catalogue designed to aid
in the selection of belting and hose of all sorts and their
accessories.

121. AIR CONDITIONING
From the Westinghouse Electric & Manufacturing Co.,
a release describing the proper methods for the spring servicing
of air conditioning equipment in which the cooling and re­
frigerating parts have been shut down for the winter.

122. INTERIOR PARTITIONS
Two new catalogues from Johns-Manville, describing their
Transite Walls and giving results of sound transmission tests
and suggested specifications. One of these booklets has a
new file number, A.M.A. No. 28-K-1.

123. CONVECTOR
The National Radiator Corp. announces the new aero-­
convector as a concealed heating unit of cast iron, sci­
etically designed to heat by convection. The catalogue
describes the complete convector line, gives dimensions, con­
struction details, performance data and information on
special applications.

124. TUBULAR RAILINGS
A folder has been received from The Fabricated Steel
Products Co. describing a new development in pipe railings.
These are assembled by welding and have jointless steel
posts instead of the usual tubular fittings.

125. INDIRECT ILLUMINATION
From the Edwin F. Guth Co. comes a new catalogue
No. 28 showing the latest developments in indirect lighting
fixtures manufactured by this company.

126. LIGHTING FIXTURES
The Lightolier Co. has issued a new catalogue, entitled
"Correct Lighting for American Homes," in which a variety
of fixtures is illustrated.

127. HEATERS AND VENTILATORS
The B. F. Sturtevant Co. has issued two new catalogues
on unit ventilators and steam heaters.

128. AWNING ENCLOSURES
From Newman Brothers, Inc., a catalogue on store fronts
with details of glass setting molds and awning enclosures.

129. BLOWERS
A booklet on furnace blowers, air washers, and furnace
fans, with specifications and prices, has been received from
The Emerson Electric Co.

130. SOUND CONTROL
From the Johns-Manville Company, a new booklet, "Sound
Control of Mechanical Equipment."

131. PAINTING
A new booklet "101 Questions About Painting and Deco­
rating" distributed by The Lowe Brothers Company.

(Continued on page 52)
**Safety Water-Mixing Valves**

*For Shower Baths*—Powers mixers prevent scalding caused by failure of cold water supply, or by pressure changes due to use of nearby showers, faucets or flush valves. They keep the temperature of the shower where the bather wants it without any "shots" of cold or scalding hot water.

*Group and Gang Showers*—Powers mixing valves are also used for the control of water temperatures of showers in groups of from 2 to 20 showers. They may be used to establish a maximum temperature in the hot water supply so as to protect the entire group from danger of scalding or to place the entire group of showers under the control of an attendant.

*Zone Showers*—Where compulsory bathing is required before entering swimming pools, lane showers are divided into four zones, each controlled by a Powers valve. First zone is maintained at 105° F; second at 90° F; third at 75° F; and fourth at 60° F. Because of its efficiency and its hygienic and sanitary advantages, this type of shower is rapidly increasing in popularity.

*Hospital Hydrotherapy*—In infant baths, continuous flowing baths, control tables, douche baths, arm and leg baths, colonic irrigation apparatus, photographic baths, and hot water line control, Powers mixing valves are indispensable because of their safety features.


---

**Trane's tailored Air Conditioning Systems**

**PROVIDE THE PROPER CONDITIONS IN ANY SIZE OR TYPE OF BUILDING**

Year 'round air conditioning systems for buildings must function properly to provide comfortable weather conditions during the summer as well as during the winter. Because of the flexibility of equipment and the multiplicity of unit sizes you can select a Trane Air Conditioning System that will meet your most exacting year 'round requirements.

You have the Trane Climate Changer System for residences and small buildings—with the modern Trane Convection Heaters for installation in little used rooms if your clients desire a split system; you have a complete range of sizes of large air conditioning units; and you have a complete range of sizes of cooling coils for central systems using either direct expansion refrigerants or water as the cooling medium. Complete data on the 1936 line will be mailed for your files on request. Use the coupon or your letterhead.

*The Trane Company*  
La Crosse, Wis.

The Trane Company  
La Crosse, Wis. Dept. F1  
Please send complete data on Trane Air Conditioning Systems.  
Your Name  
Street  
City  
State
What have you done with your 1935

ARCHITECTURAL FORUMS?

Did you
save the January School Reference Number with its portfolio of foreign schools, its chart of U. education, the school solutions Architects Neutra, Lescaze, Hansen, Barney?

Did you
save the April issue which contained more than 125 pages devoted to the $21,000 Home Electric Competition which brought forth 2,000 submitted designs? This issue had to be reprinted four times.

Did you
save your issue of the famous October Small House Reference Number with its 101 small houses completely described in critical text, photographs and plans? 45,000 copies printed; not a single copy left.

Did you
save your December issue, companion to the October? A reprint of this issue had to be ordered before subscribers had even received their copies.

THESE FOUR GREAT ISSUES are now out of print. You will want to save them and the other eight which made 1935 the greatest year in the history of The Architectural Forum.

Available now are natural tan Web Studio cloth binders, stamped in black letters as in the illustration, and specially designed to hold the 1933 January-June and July-December issues. The rods which slip through the spines, the binding and the inside back strip of chrome plate. Complete issues easily removed and returned. Price $2.00 per binder, f.o.b. New York City.

Send $2.00 to Van Courier, 33 Greene St., New York City, for the binder illustrated at left which will keep your irreplaceable 1935 January-December copies of The Architectural Forum.
With the average person spending at least half a lifetime between four walls, the need for generous fenestration is apparent and the importance of the utmost quality in glass is something not to be taken lightly.

Libbey-Owens-Ford Glass Company, Toledo, Ohio manufactures and distributes a complete line of flat glass, including Flat Drawn Window Glass, Polished Plate Glass, Heavy Sheet Glass, Greenhouse Glass, Safety Glass, Tuf-Flex tempered plate glass, Vitrolite opaque structural glass, Aklo heat absorbing glass, and the Figured and Wire Glass manufactured by the Blue Ridge Glass Corporation of Kingsport, Tennessee.
To Be Sure Of
A WEATHER-TIGHT
Building
Be Sure To Calk All Door
And Window Frames With

Pecora Paint
Company
Inc.
Fourth and Venango Sts.
PHILADELPHIA
Est. 1882 by Smith Bowen
Also Makers of
SASH PUTTIES
MORTAR STAINS
SUCTION MASTIC
for Structural Glass

Whether it is a new college addition as pictured above, or any other type of building, experience has proved that health, comfort and operating efficiency demand a weather-tight structure. Heat losses, dust and moisture seepage, an increased rate of deterioration, must prevail when door and window frames are not caulked.

Experience has also proved that best caulking results are assured when Pecora Calking Compound is specified and used. When properly applied it will not dry out, crack or chip and it is equally effective when sealing joints in similar or dissimilar materials.

For further details see Sweet's Catalogue or write direct to us.

MANUFACTURERS' PUBLICA
(Continued from page 48)

132. CEMENT PAINTING
Medusa Products Co., a subsidiary of Medusa Cement Co., has issued a few folders for architects on the proper methods for painting cement and concrete of all sorts, as well as brick and any other masonry, exterior or interior. This discusses in detail the necessary control in the cleaning and drying of masonry before paint is applied, as well as the questions of mixing and application of the paint itself.

133. PIPE INSULATION
From H. W. Porter & Co., a new catalogue illus-
ter O-Tile steam conduits.

134. PREFABRICATED FLOOR UNITS
From the H. H. Robertson Co., a new catalogue suggested uses for their prefabricated floor units.

135. AIR-OPERATED CONTROLLERS
A new catalogue has just been published by the Instrument Co. and it illustrates the construction and details of the operated controllers and their uses for the control of temperature, pressure, flow, and liquid level.

136. UNIT HEATERS
From the Trane Co., a new catalogue of Floor Line Unit Heaters, with specifications and capacity data.

137. STEEL ROOF DECKS
From the Universal Metal Sections., a new book with data on steel roof decks and construction details.

138. ASPHALT TILE
From the Johns-Manville Co., a catalogue of their asphalt tile flooring, with color plates showing the available colors and patterns.

139. REFERENCE BOOK
From the Portland Cement Association, "Cement and Concrete Reference Book, 1935."

140. WIRE NAILS
From the Republic Steel Corp., a catalogue of wire rods, and other products with list prices.

REQUEST FOR DATA
To obtain any of the publications reviewed on the pages, indicate the number and send coupon to:

ARCHITECTURAL FORUM, 135 East 42nd St., New York

Name
Street Address
City and State

Please check here if engaged in Architectural Practice

THE ARCHITECTURAL FORUM

52
All woodwork in the chancel and nave of the main church, and in the chancel of the chapel of the East Liberty Presbyterian Church, designed by Cram & Ferguson, Architects.

Executed by
IRVING & CASSON—A. H. DAVENPORT CO.
37 Newbury Street
Boston
379 Park Avenue
New York

Factories, East Cambridge, Mass.

"21% NET SAVING IN FUEL ALONE"
SAYS SUPT. H. C. HALL

Hundreds of such experience letters from users will back up your Automatic Butler Coal Stoker recommendations. May we assist you in working automatic heating at its best into your plans?

THE AUTOMATIC BUTLER COAL STOKER

CUTS HEATING COSTS 15% TO 50%

ELIMINATES THE SMOKE NUISANCE

Two of the above Automatic Butler coal stokers performed so efficiently after installation in 1934 that the second pair was installed this season in the Senior High School, Ft. Dodge, Ia.

BUTLER MANUFACTURING COMPANY
1248 EASTERN AVE., KANSAS CITY, MO.

For 1936, Ric-wil

Offers the Modern, Complete and Outstanding Line of Underground Steam Conduit

See the Ric-wil Exhibit—

Booths 133-5 International Heating and Ventilating Exposition — Chicago January 26-31

Shown here are a few representative types of Ric-wil Underground Conduit. We also manufacture a full line of all necessary accessories for these systems. Installations may be for single or multiple pipe. Insulation is the famous Ric-wil Waterproof Asbestos Dry-paper. Descriptive Bulletins of any or all types of Ric-wil Conduit furnished on request.

Ric-wil
The Ric-wil Co.
CLEVELAND, OHIO

CONDUIT SYSTEMS FOR
UNDERGROUND STEAM PIPES

NEW YORK • CHICAGO
SAN FRANCISCO
Agents In Principal Cities

JANUARY - 1936

53
THE MODERN ECONOMICAL HEAT-POWER UNIT
Portable return tubular fire box power boilers for 100 to 150 lbs. pressure. Send for Form 9090-AAF.

TITUSVILLE
SERIES "RP" RIVETED HIGH PRESSURE BOILERS
THE MODERN ECONOMICAL HEAT-POWER UNIT
Portable return tubular fire box power boilers for 100 to 150 lbs. pressure. Send for Form 9090-AAF.

THE TITUSVILLE IRON WORKS COMPANY
Division of Struthers Wells-Titusville Corporation
TITUSVILLE, PA.

THE ARCHITECTURAL FORUM
135 East 42nd Street
New York, N. Y.

SAMSON SPOT sash cord
Look for the colored spots which identify this cord. If it hasn’t the spots it is not Samson Spot Cord. One quality—the best we can make. The cheapest in terms of service cost.

Write for specification sheet showing sizes and actual wear tests.

SAMSON CORDAGE WORKS
89 Broad Street, Boston, Mass.

BOOKS
For the convenience of our readers, books may be obtained from the Book Service of THE ARCHITECTURAL FORUM by sending the amount of the regular list price with the order. Information regarding prices, authors, and titles may be obtained from the same department.

Book Service Department
THE ARCHITECTURAL FORUM
135 East 42nd Street
New York, N. Y.
BUILDERS of the Cunard White Star super-liner "Queen Mary", have thought it worth while to import Formica for many decorative uses because material with comparable qualities was not available abroad.

Formica is being installed as wall panelling in 250 deluxe bath rooms. The color chosen was a white pearlescent, trimmed with white metal.

Formica of the special blisterproof grade is being used on all stateroom furniture: bedside table tops, dressing table tops and chest of drawers in all first, second and third class staterooms.

There will be Formica wall covering and table tops in the first, second and third class hairdressing shops. And blisterproof Formica table tops will be used in the lounges, galleries and public rooms throughout the ship.

This is recognition of which we, and our distributors for Great Britain, Roanoid, Ltd., of Glasgow, are proud.

THE FORMICA INSULATION COMPANY
4620 Spring Grove Avenue, Cincinnati, Ohio

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A MAN may build a home in which he intends to dwell indefinitely. This home may contain all the different improvements that appeal particularly to him and his family—a regular show piece of ideas that he has accumulated over a number of years. He may be quite decided in his own mind that he never will have occasion to sell or rent this property. Experience teaches us that this seldom ever happens. Circumstances arise which are beyond the owner’s control.

He, or perhaps his heirs, may have to realize on the investment and they may consider themselves very fortunate if the property has remained “young” enough to command a satisfactory return or resale price.

This is a point to which the architect should give serious consideration when specifying the materials to be used for the plumbing or heating system.

There is nothing which lowers the resale value of property to such an extent as a corroded, leaking and clogging piping system.

If the architect specifies STREAMLINE Copper Pipe and Fittings he may rest assured that he is giving his client a modern, efficient plumbing or heating system that will actually outlast the building, and will continue to give the same problem-free service year after year—a system that is just as usable after a lifetime of service as the day it was first installed.

Resale value is just as important as sale—in many instances, more so. The architect who specifies STREAMLINE is safeguarding the present and future interests of all concerned.

Send for A. I. A. File 29 B4 or a list of recent installations and architects who specified STREAMLINE.

Specify STREAMLINE PIPES AND FITTINGS

STREAMLINE PIPE AND FITTINGS
PORT HURON, MICHIGAN
DIVISION OF MUELLER BRASS CO.
**IMPORTANT FACTS**

Truscon Open-Truss Steel Joist floor construction should be used in all types of light occupancy buildings. Here are the reasons why:

**QUICKLY INSTALLED**—They are made to exact job requirements and are as quickly and easily installed in mid-winter as during the summer. Thus, the dangers involved in frozen concrete are eliminated.

**VERSATILE**—Water and soil pipes, and electrical conduit can be installed through the open webs of the joists in any direction. This results in lowered costs to plumbing, electrical and lathing contractors. A convincing example of this is the 35-story Grant Building in Pittsburgh, home of station KDKA. Located in the heart of the city, this building, with every floor of O-T Joist construction, was found ideal for radio station purposes. Thousands of feet of conduit interlace the webs of the O-T Joists in every direction. This factor was importantly considered when KDKA decided to move into the Grant Building.

**FIRESAFE**—O-T Joist construction is firesafe and is approved by insurance rating bureaus everywhere—also by the building departments of practically every city in the United States.

**ECONOMICAL**—Truscon O-T Joists provide the most economical type of fireproof floor construction. Their use speeds the completion of the building and results in quicker returns to the owner on his investment.

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**TRUSCON STEEL COMPANY**

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Where operative requirements of a building demand wide floor areas unobstructed by columns, Truscon Clerespan Joists are the answer to the architect's problem. These light, fireproof and strong structural steel members embody all the advantages of Truscon Open-Truss Joists, plus the added feature of meeting every possible span condition up to 64 feet.

**OTHER TRUSCON PRODUCTS**

Steel windows and doors of every description. Metal lath, including the original Doublemesh Herringbone. Truscon Casements that make every house a home—for complete list see "Sweet's"... 80 pages of specifications and details placed there for the convenience of architects.

*YOUNGSTOWN, OHIO*
FOR little if any more than the cost of ordinary equipment, any home builder or home modernizer can now have a beautifully modern and efficient General Electric Kitchen. Prices of complete G-E Kitchens, including G-E Refrigerator, G-E Automatic Electric Range, G-E Automatic Dishwasher, work surfaces and cabinets, are now as low as $475 *(price varies slightly according to locality).

When you include a General Electric Kitchen in your building or modernization plans you know it will not be obsoleted in a few years. The modern trend is definitely to the all-electric home and no room is more important than the kitchen—none more in new modern electrical home servants will save time, work and money for housewife. General Electric Cont Appliance and Merchandise Depart Section CG1, Nela Park, Cleveland,

FREE Planning Service for Architec Builders, Home Owners

The General Electric Kitchen Insti offers you free and very helpful service in the planning, building or modernization of single or multiple residential dwellings. Consult the G-E Refriger Distributor near you for complete deta