PENCIL POINTS

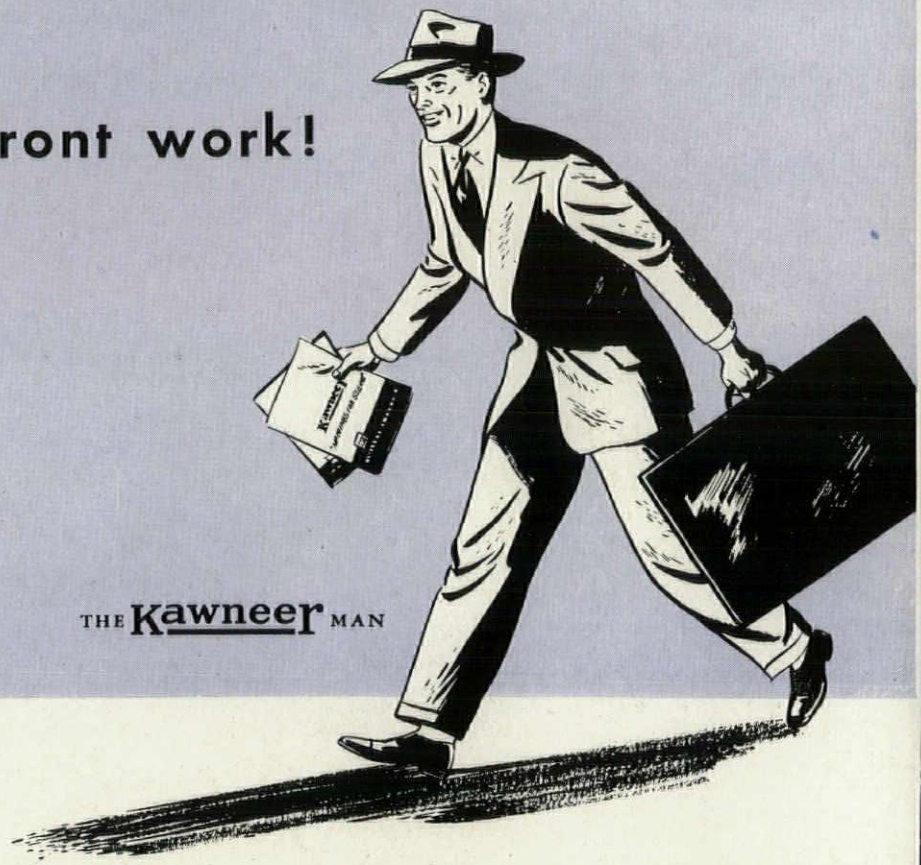
PROGRESSIVE ARCHITECTURE

3

March 1945

Meet your new assistant

on Store-Front work!



THE Kawneer MAN

THE KAWNEER MAN in your territory is in a position to give you valuable assistance on store-front work. Over 300 Kawneer distributors cover the entire United States—there's one near you.

These men have been supplied with many new tools to help you in your work. They have been trained in the merchandising problems of various types of retail stores—so that in a consulting capacity they can help you solve the store-front problems of any particular store.

They offer you a limited line of pre-war construction, available now—and will soon show you the entirely new Kawneer line which includes practical and important new developments. They have an important part in the Kawneer Program which is creating a tremendous demand for Kawneer "Machines For Selling" among all types of retail merchants.

Get acquainted with the Kawneer man. Write the Kawneer Company, 303 Front Street, Niles, Michigan, today.

✓THERE'S NEW OPPORTUNITY FOR ARCHITECTS IN THE STORE-FRONT FIELD!

Kawneer
STORE-FRONTS

MACHINES FOR SELLING!

PENCIL POINTS
PROGRESSIVE
ARCHITECTURE

Environment For Work

Places of work have been among the last sectors of the human environment to receive the serious attention of architectural thinkers. There was a time, early in the Industrial Revolution, when all workers were apparently regarded by their employers as so many useful animals, willing to put up with any degree of neglect in return for the privilege of being permitted to sweat out a meager living. Any old kind of buildings would do to house industrial and even commercial activities. Nobody bothered to do much more for the workers than to provide the barest necessities.

Fortunately, the world has so progressed that those days of working amid darkness, dirt, danger, and discomfort are gone forever for a substantial part of the race. Now, it will be a job for the present generation, aided by its architects and engineers, to push up the percentage of well-appointed modern establishments. As every architect knows, we are still far short of providing for all workers the kind of decent conditions the twentieth century world is capable of creating and supporting.

As science and technology have been applied to increase productivity and raise the standard of living, it has become generally accepted that it pays to provide a high degree of comfort for those who do the producing. People, it has been proven, work more efficiently in good surroundings, and the industry or business that wants to succeed must compete with those that provide the best conditions, not the worst. Thus, the urge to profit accomplishes ends that simple humanity could not reach!

We show, this month, several examples of how architects and their clients have, by taking thought, created satisfactory environments for a variety of types of work. Heavy and light industry, merchandising, commercial offices, and maintenance are represented. In all of them we find cleanliness and order, well-distributed light and air, convenience and safety. There is also much esthetic merit—that intangible quality which affects beneficially the lives of those exposed to it, even when it is unrecognized and unacknowledged by them. Obviously, these projects have been designed by men who have understood the function of Architecture in the world.

When we enter, not too far in the future, the era of Total Peace we seek, we will find that it cannot be supported without a positive effort to make *all* places of work as pleasant as possible. The economics of an age of high production and full employment will necessitate that this effort be made. This does not mean paternalism or coddling but simply a recognition of the dignity of the human being—who will, we hope, become the all-important consideration. Architects who undertake to plan tomorrow's environment for work will be, whether they know it or not, helping to shape the future course of history. As they do their job well or ill, so will the quality of society go up or down and so will its behavior be affected.

Kenneth Reid

BUSINESS

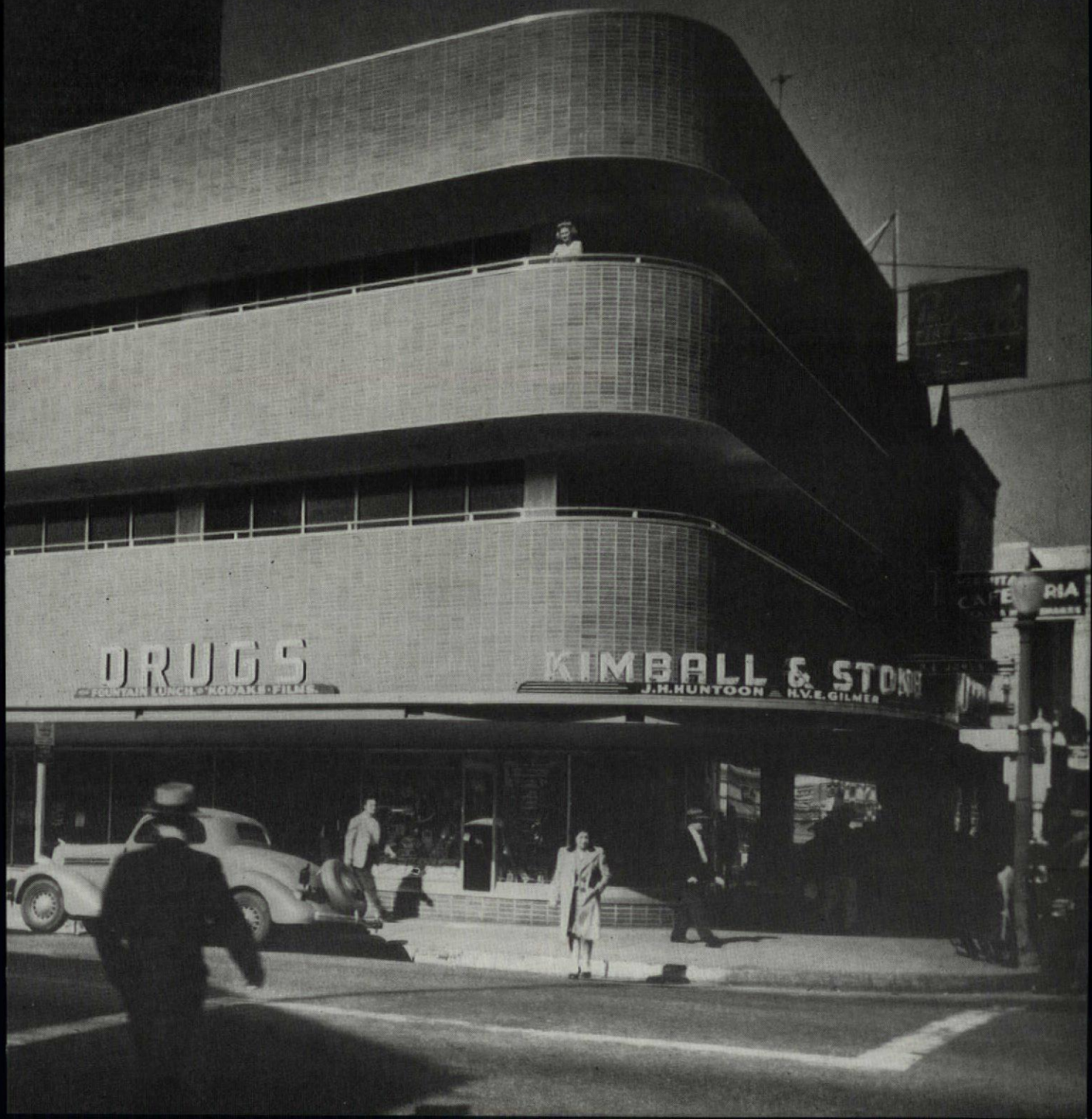
RETAIL SALES

SILL BUILDING, Bakersfield, California

FRANKLIN & KUMP & ASSOCIATES, Architects

A. A. Coddington, Mechanical Engineer

Mark Falk, Structural Engineer



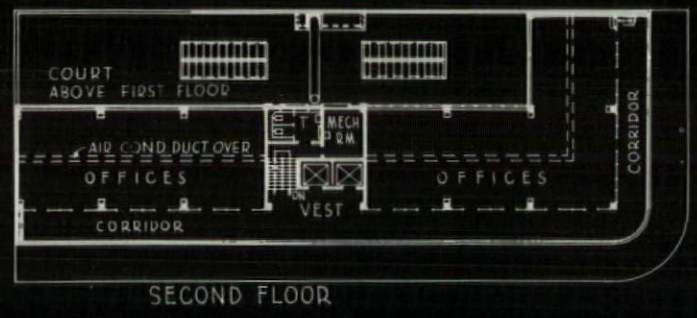
SILL BUILDING

FRANKLIN & KUMP & ASSOCIATES

Architects

Photography by

Roger Sturtevant



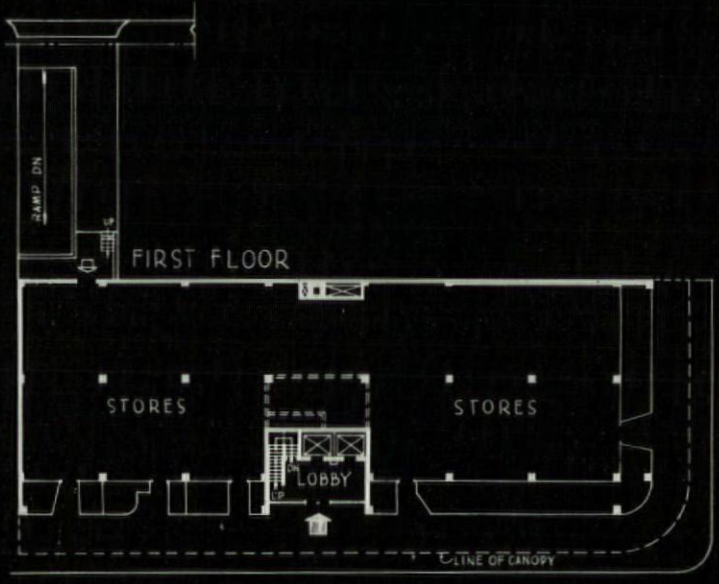
SECOND FLOOR

PURPOSE:

To provide rental office space on upper floors

To provide store space on ground floor

To provide off-street parking for tenants' cars



CLIMATE:

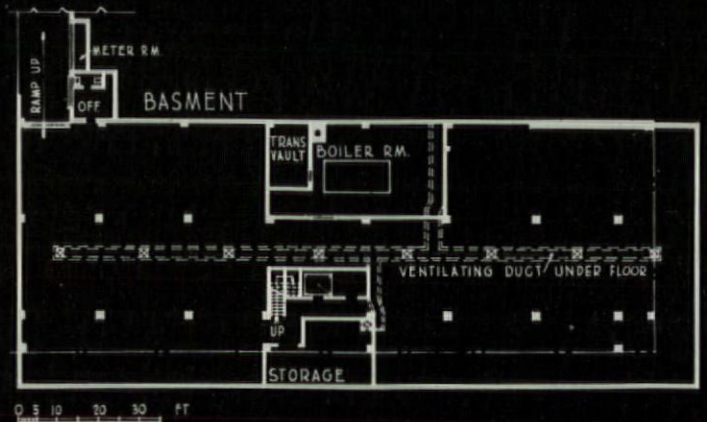
Unusually hot in summer, with glaring sun

Quite cool in winter

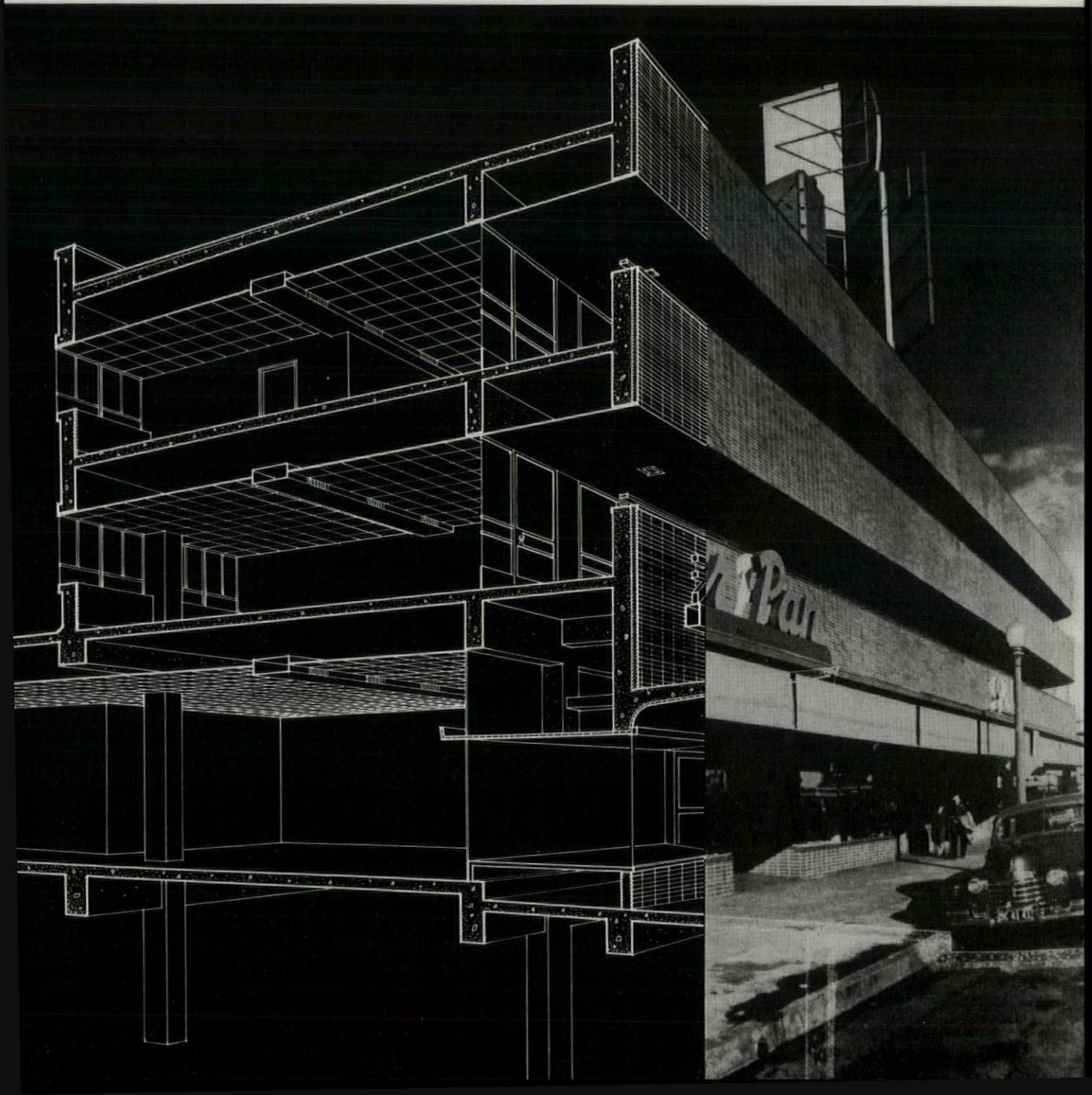
DESIGN CONSIDERATIONS:

Ample controlled daylighting for office space

Flexibility, to make office alterations easy



The Sill Building occupies a site at the intersection of Bakersfield's two main streets, 18th and Chester, and has a 25-ft. right of way to a rear alley. The plot is 157 ft. 9 in. by 66 ft. 9 in. The building was planned for six floors above grade, with a seventh-floor superstructure to house recreational and athletic facilities. Three floors were built in 1940; tentative plans call for construction of the remainder as soon as war restrictions are lifted. The basement is principally garage space for tenants' cars.



SILL BUILDING

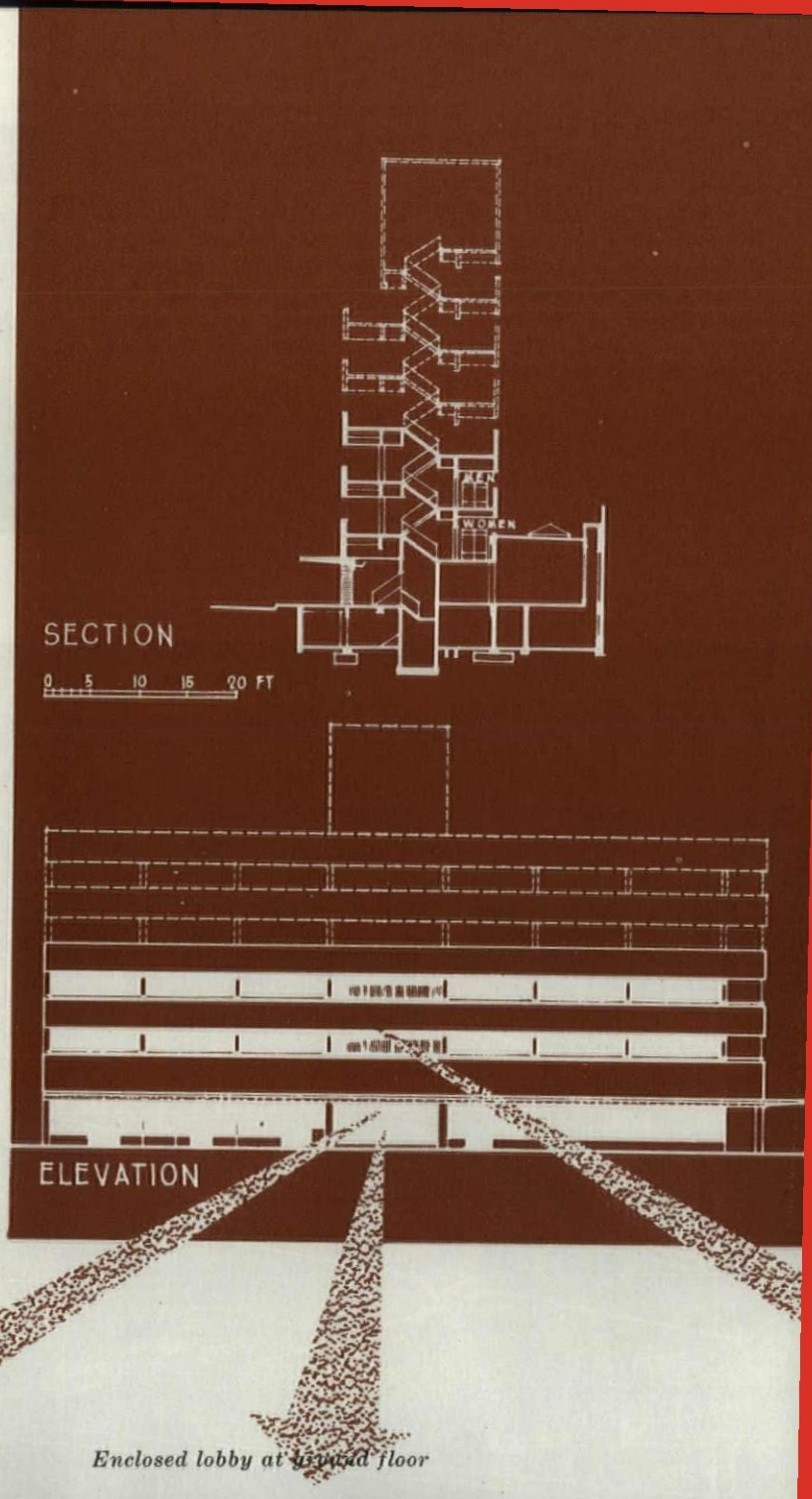
FRANKLIN & KUMP & ASSOCIATES, Architects

CIRCULATION and SUN CONTROL

No one solution to any of the design problems encountered in the Sill Building can be satisfactorily isolated for study; all are as thoroughly intermixed as the ingredients of a good loaf of bread.

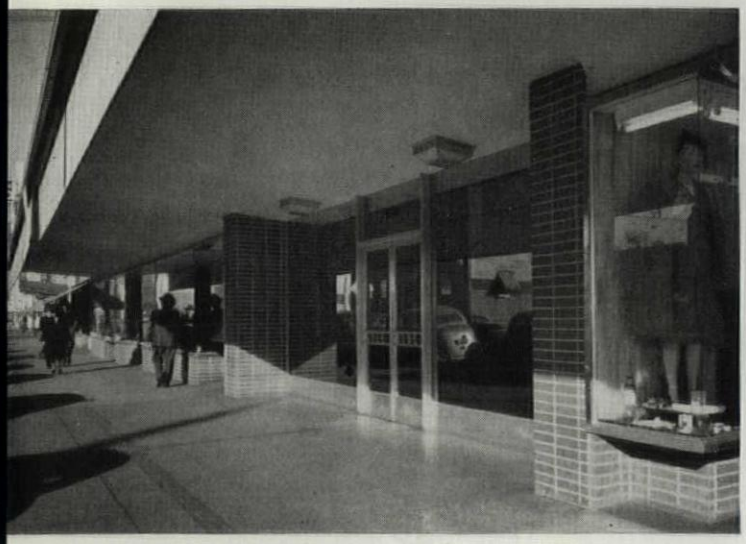
One of the basic decisions determined that the office floors should not cover the entire plot. A light court on the North (interior) side above the first floor reduces rentable area per office floor, and the total rentable office space deemed economically desirable is to be obtained by building vertically after the war. Out of this came a design which affords ample daylight for all offices; and which, by eliminating the usual dark internal corridor in favor of exterior sidewalks at all floor levels, made it possible to glaze the south and east walls from floor to ceiling at each office level. Such a procedure would not have been possible except for the fact that the cantilevered sidewalk above shields each glazed office wall from the uncomfortably hot sun.

Noteworthy is the location of men's and women's toilets, which alternate, one per floor, at the half-story stair landings. This device permitted substantial savings by making it unnecessary to include both on every floor.



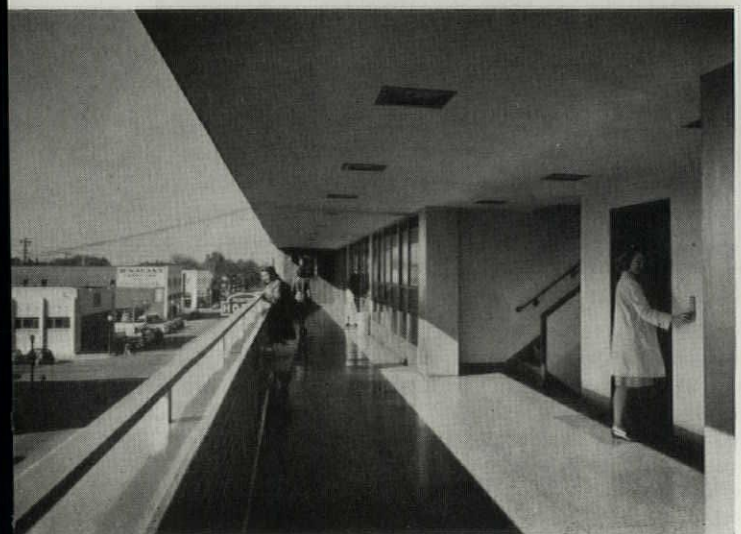
Street entrance to building lobby

Enclosed lobby at typical floor



A cantilevered sidewalk around the south and east sides of each office floor replaces the usual interior corridor and provides shade for the office wall below. East and south walls consist of metal-framed panels of obscure glass. All photos were taken about November 20 and show nearly maximum sun penetration.

vator and stair lobbies at upper floors are merely wider portions of the balcony-corridor



CONSTRUCTION

The simple structure, a reinforced concrete frame with flat slab floor decks, is designed to provide a true skeleton into which exterior walls and interior partitions can be variously fitted to suit any tenant's needs. The cantilevered aerial sidewalks, extensions of the floor slabs, permit the use of a flexible exterior wall. The furred-down ceiling, intentionally hung with ample space between it and the slab above, is continuous; so is the asphalt tile floor surfacing; interior partitions are wedged into place between finish floor and ceiling. The manner in which all this is accomplished is detailed on subsequent pages.

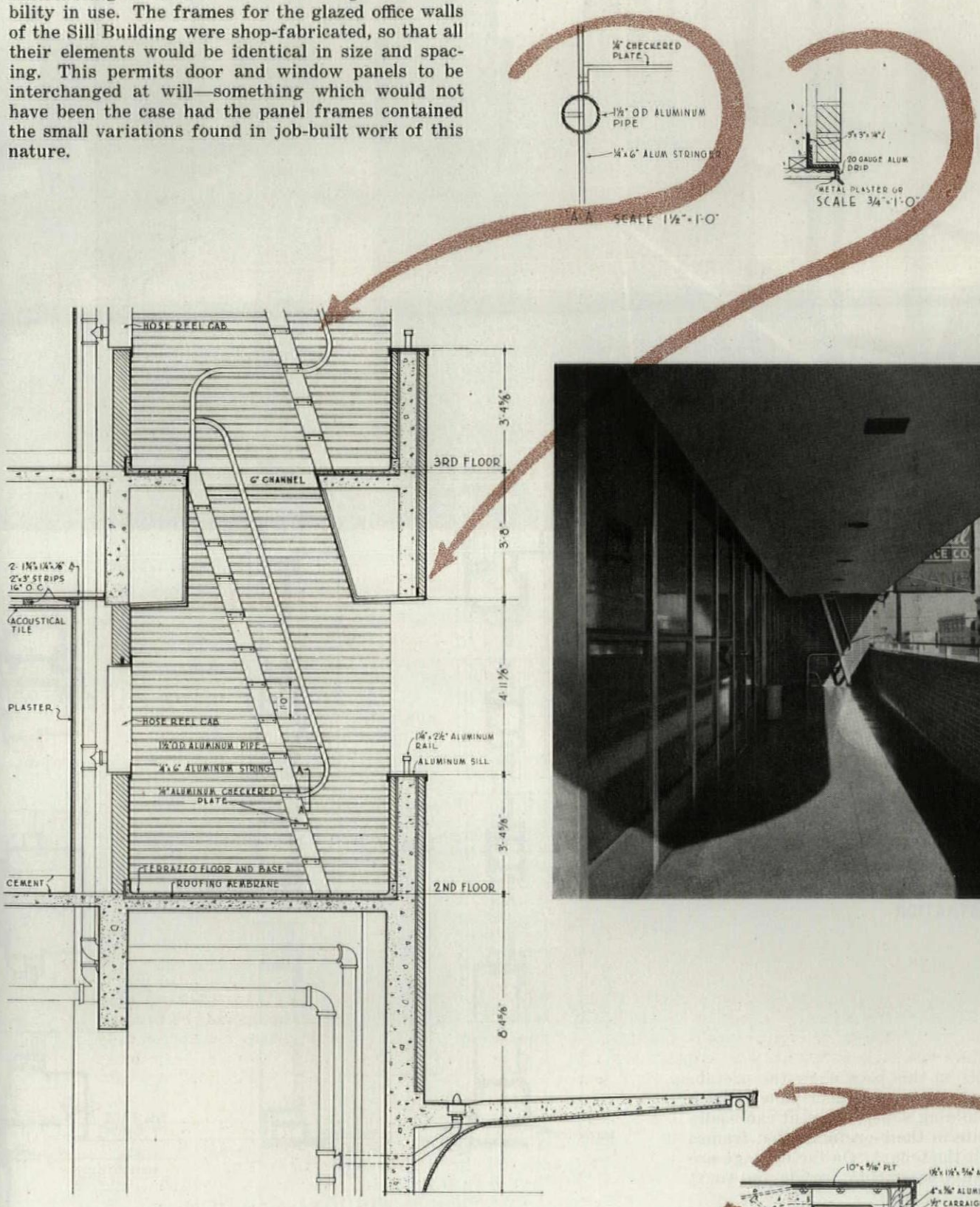
Street facades (and interior faces of balcony parapets) are surfaced with a local, hard-burned soap brick, 8″ by 2″ by 2¼″ in size, Pompeian red in color, and laid up with ⅜″ joints in alignment horizontally and vertically. Exposed brick faces are very dense and smooth. Metal trim, handrails, etc., are aluminum throughout.

Merely to rehearse the materials used in this building would be to miss much of its importance. Like most of the work from Franklin and Kump's office, the Sill Building is dedicated to the proposition that the structure should satisfy the changing needs met throughout its life; that it should never restrict the activities it houses. "The only truly permanent building," says Ernest Kump, "is one flexible

enough—*demountable*, if you will—to change with the times." The architects try to apply that principle to all the work they turn out, from the smallest structure to the grandest area plan.

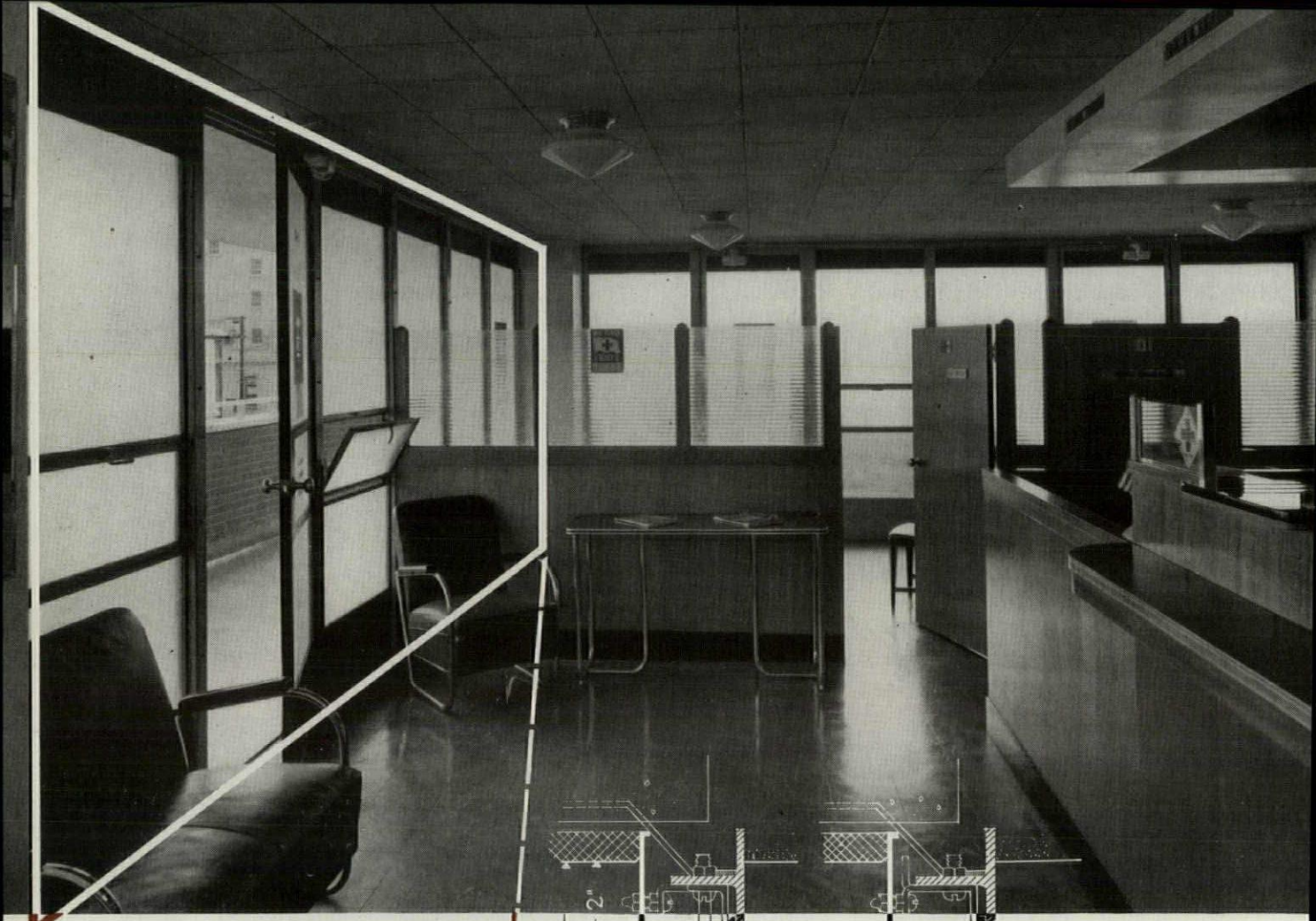
In another aspect their work carries, to a further accomplishment than most contemporary design, the stamp of what we call prefabrication. But in their hands this modern practice is no stricture at the throat of the artist. Rather, it is a liberating force, contributing to both freedom of design and flexibility in use. The frames for the glazed office walls of the Sill Building were shop-fabricated, so that all their elements would be identical in size and spacing. This permits door and window panels to be interchanged at will—something which would not have been the case had the panel frames contained the small variations found in job-built work of this nature.

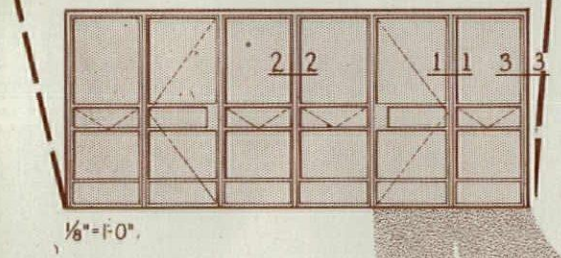
SILL BUILDING
FRANKLIN & KUMP & ASSOCIATES
Architects



DETAILS, ELEVATED SIDEWALKS SCALE 3/16"=1'-0"

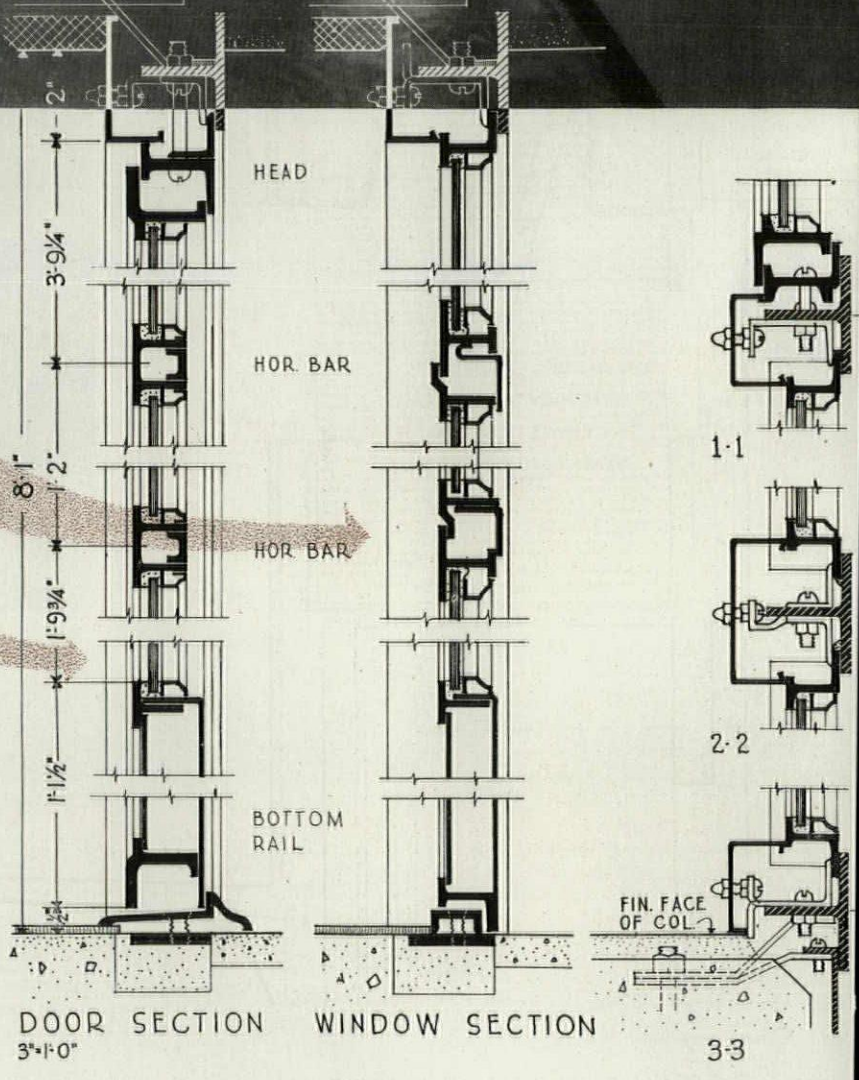
AWNING BOX SCALE ¾"=1'-0"

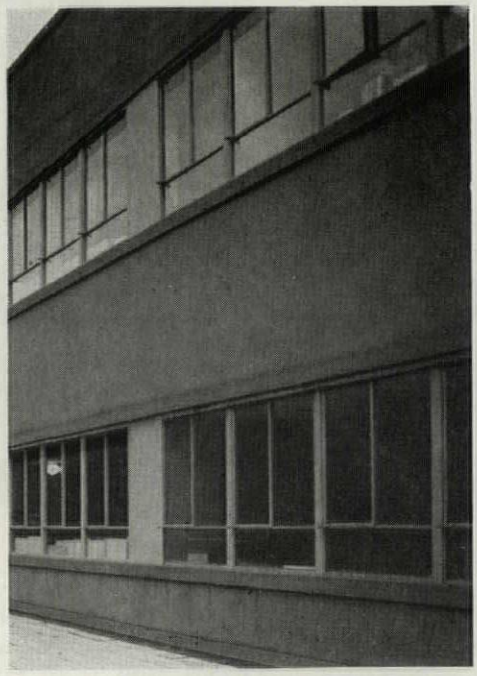




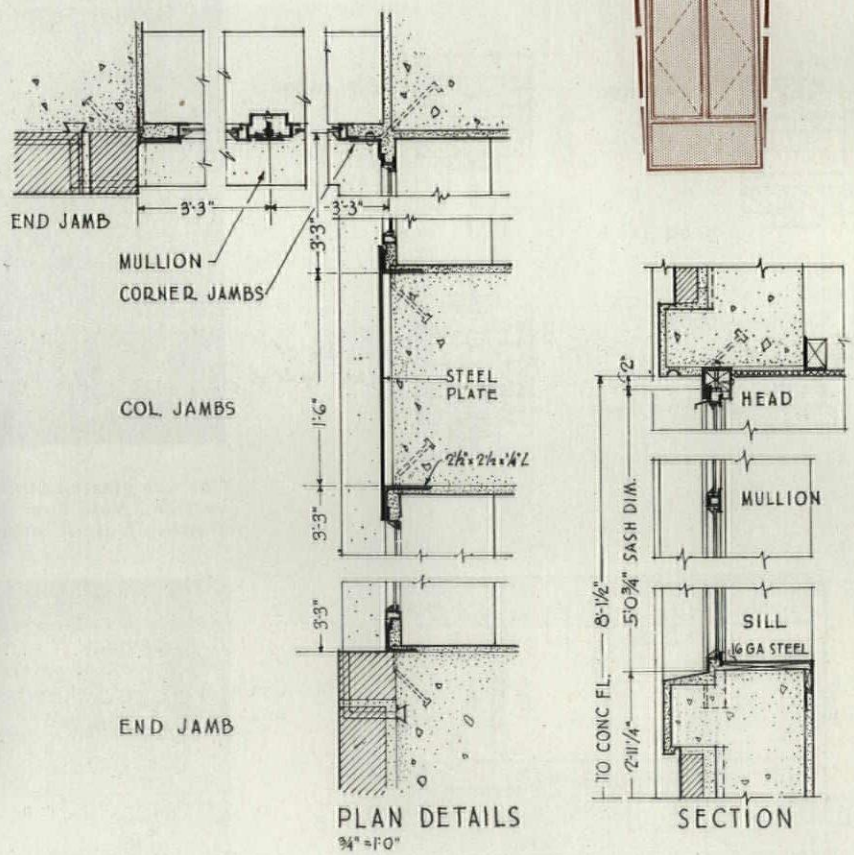
FENESTRATION

Details on this page show the prefabricated window and door panels which the building superintendent can easily relocate in their prefabricated frames to suit the tenant. On facing page are the stock casements used in the court wall.





Court windows, exterior



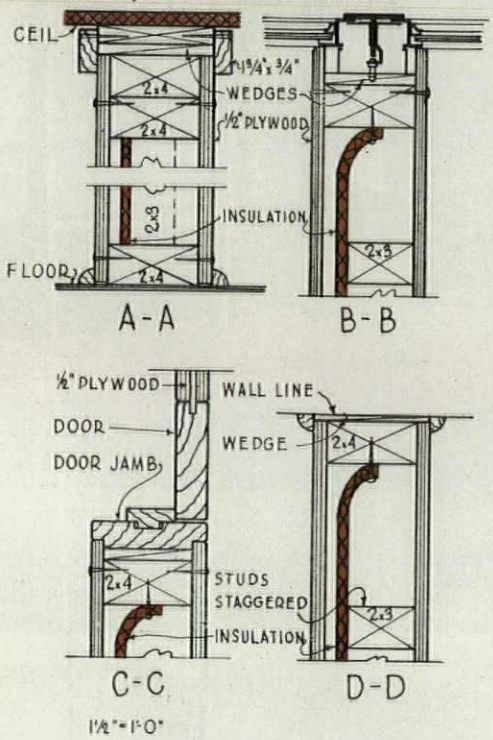
SILL BUILDING; FRANKLIN & KUMP & ASSOCIATES, Architects

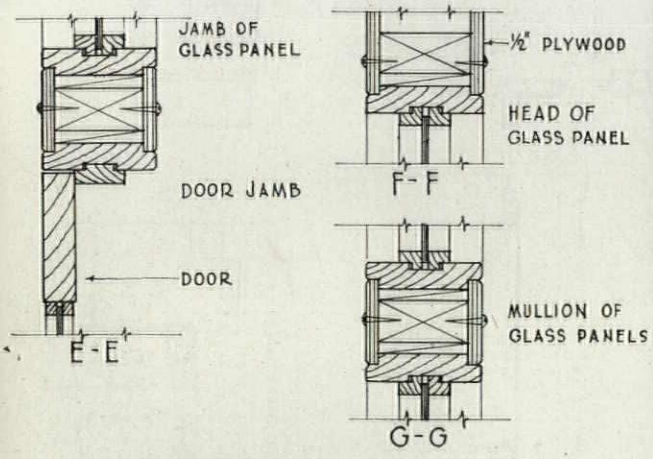
SILL BUILDING

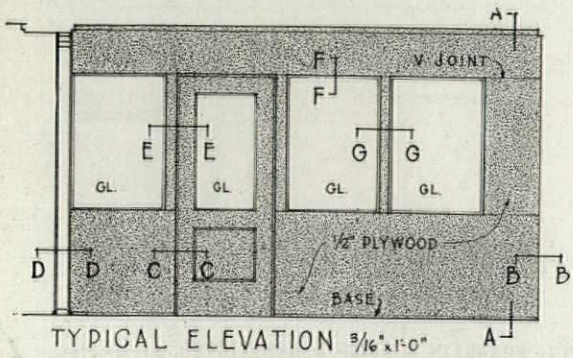
FRANKLIN & KUMP & ASSOCIATES, Architects

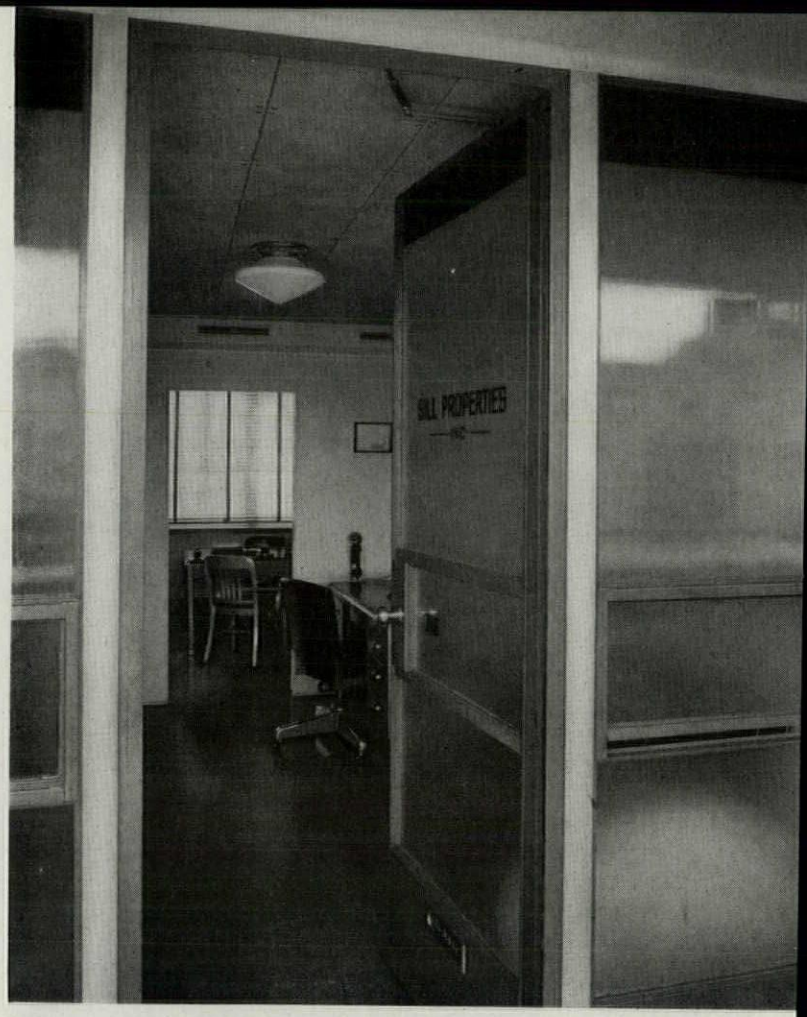
OFFICE SPACE

Prefabricated, Sound-insulated Partitions

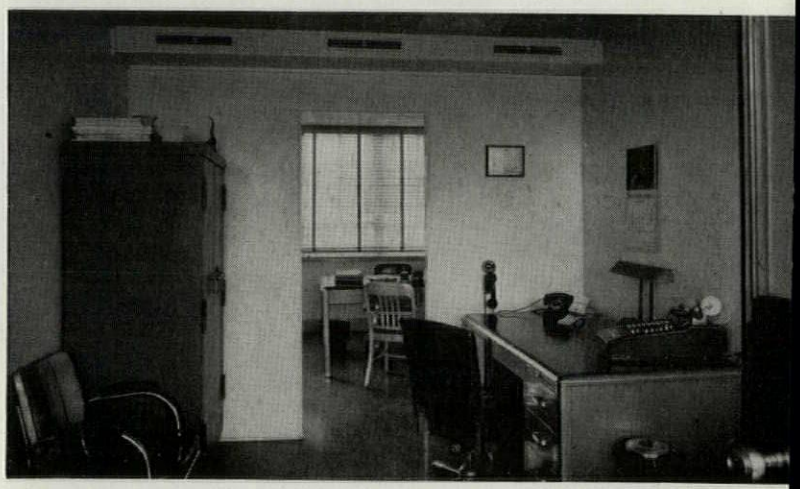








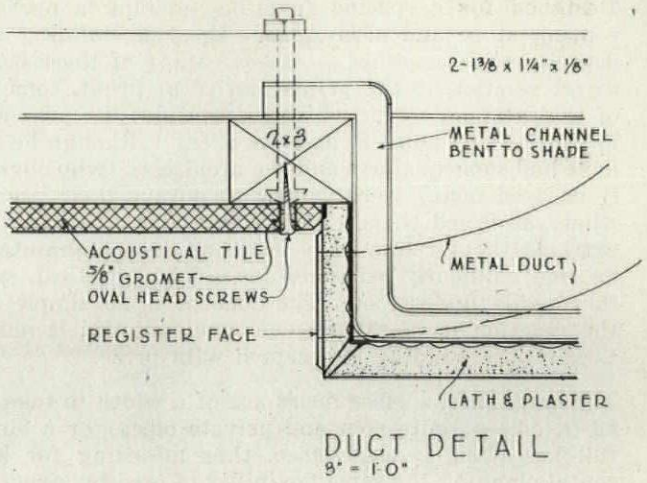
Looking from corridor through anteroom to private office, both amply lighted, air conditioned, sound treated



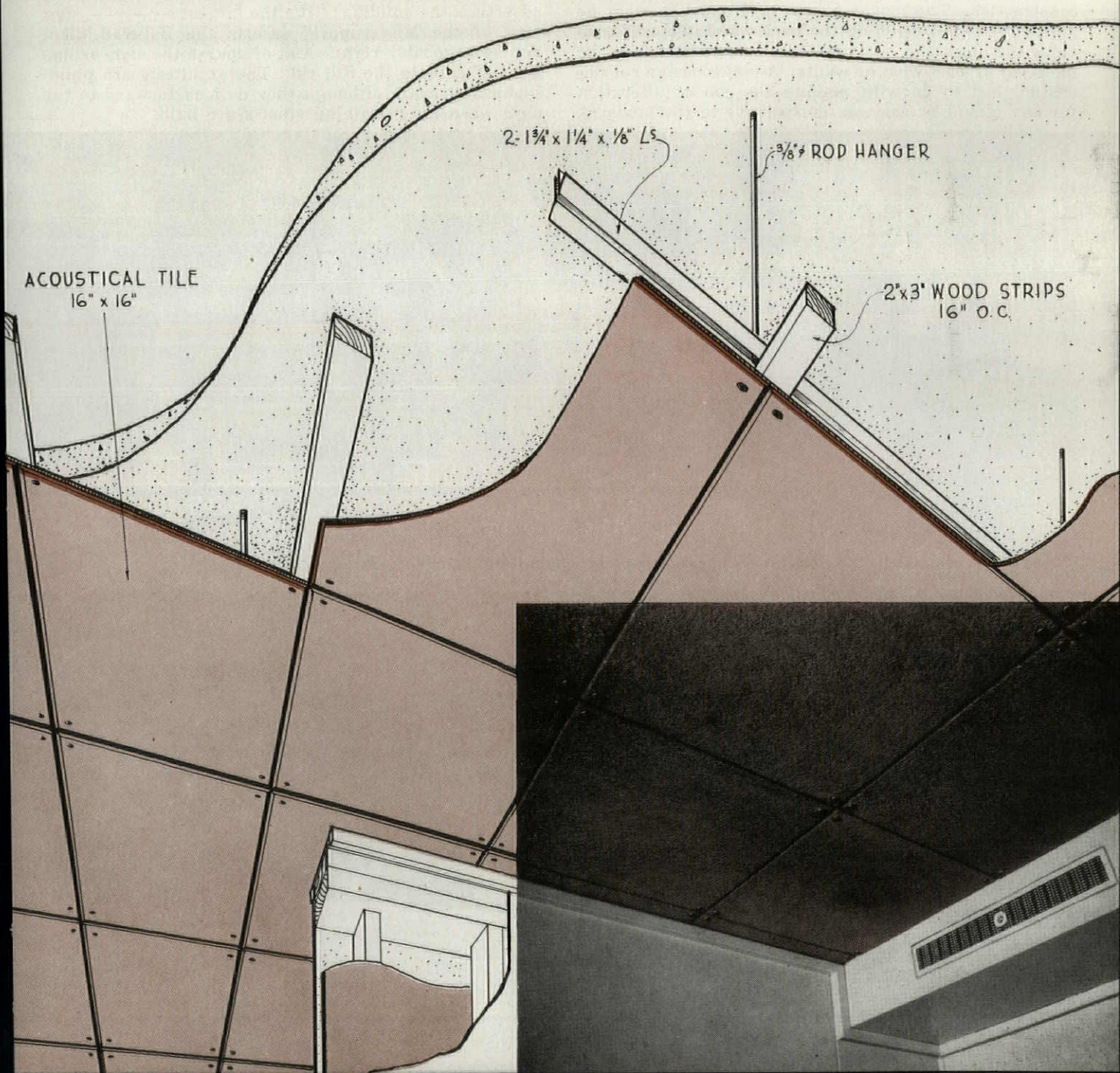
Obscure glazing minimizes any distractions caused by tenant traffic outside. Note how easily the very human desire for an occasional breath of air is satisfied

The ceiling, screwed to 2″ by 3″ wood framing, 16″ o.c., is supported by pairs of steel angles which are hung from the concrete slab on threaded ⅜″ round rods which screw into receptacles, of the kind used to hang sprinkler piping, embedded in the concrete. Rods pass between the backs of a pair of angles; an ordinary nut and washer on the end of the rod supports them. Rods are not secured in the slot formed between the angles, but left free for adjustment. Similarly, the 2″ by 3″ wood members are bolted between the angles, and are adjustable. Space between furring and slab provides room for catwalks (carried on the angles) as well as for all utilities: wiring, piping, and ductwork.

Acoustical ceiling tile, with grommets for wood screws preinserted by the manufacturer, are easily demountable for work from below. Air conditioning outlets occur at short, regular intervals down both faces of the dropped center portion of the ceiling. Each outlet supplies what might be called a "modular area," so that changes in office layout can be made without disrupting the system. Office partitions are prefabricated of fire-resistant plywood, and are almost completely salvageable.



DUCT DETAIL
3" = 1'0"



Designed for a specific function—making a profit by renting store and office space—the Sill Building incidentally achieves other purposes. Many of these bear a direct relation to the prime motive of profit, some are of the intangible type which so mystifies the pragmatic brethren. The point is that the client (although he may have had some qualms) and the architects (who obviously enjoyed none) were willing to pursue their premise wherever it led them. Their conclusions, fanciful and extreme though they may seem at first acquaintance, become eminently sensible, downright practical, when thoroughly understood. The concept is so simple that the reaction is to ask why no one ever did it before. Locally, the building is accepted with pride.

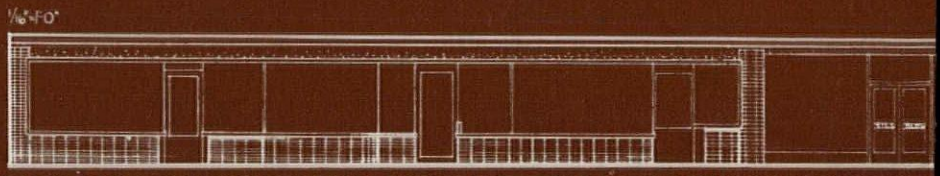
The long, narrow office floors are of a width to take two 12-ft. offices (anteroom and private office) or a single, full-floor-wide, general office, thus affording for horizontal planning the same flexibility offered by structural frame, wall system, and utilities provisions. True, the usual modern office building is a loft structure, but seldom is the idea carried to such logical lengths; in the usual case, the maximum "legal" rentable area per floor is rigidly enclosed and subdivided by permanent construction. The tenant has to take and like what he gets. In the Sill Building the basic "architecture" provides the amenities, and the office tenant gets what he likes—or at least what he wants. A major design consideration had to do with making the job of alteration for any tenant as easy, as inexpensive to the landlord, as possible. Probably the owner was disturbed about many minor points in the program; his present frame of mind is revealed in the quotations on the facing page.

It is commonplace for store space to be similarly flexible. Hence store facilities in the Sill Building may not seem as revolutionary in concept as the office floors. However, the continuous marquise, which we have seen recently in many war housing project shopping centers, has appeared less often in commercial enterprises. Were it not that the Sill Building antedates most war housing, a moral might be pointed; perhaps a stronger point can be made in saying that here, in a building for private gain, is a provision which the average speculative operator would have trouble justifying in terms of dollars. But that, of course, is true of many an innovation.

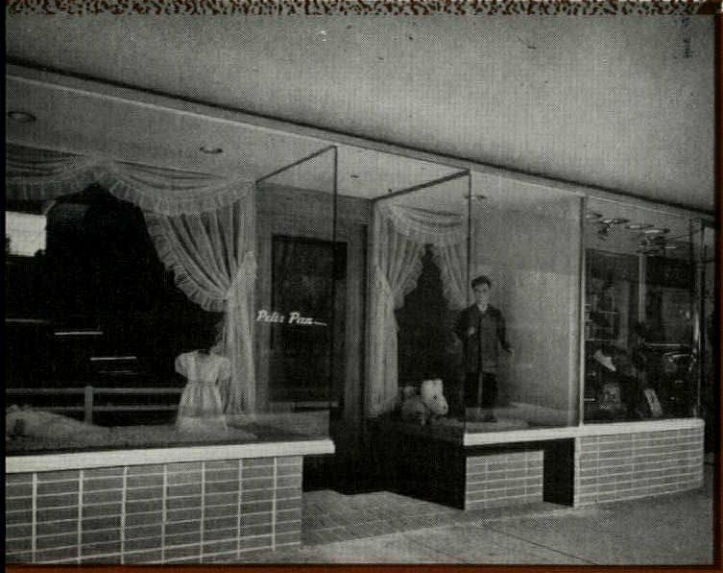
On the edge of the marquise perch the individual store signs, gaining importance and three-dimensional vitality from their position. The store tenant erects, here, what sign he wants; another of the design postulates was that tenants, within reason, should be free to advertise their occupancy without destroying the unity of the design. The huge Coca-Cola sign on the roof has caused endless esthetic controversy; in addition to its obvious use it advertises the building; "It's the largest —— —— sign west of the Mississippi!" asserts the Bakersfieldian, and he's probably right. And of course the sign brings a lot of cash to the Sill till. The architects are philosophical about it, although they do look forward to the days when the remaining stories are built.

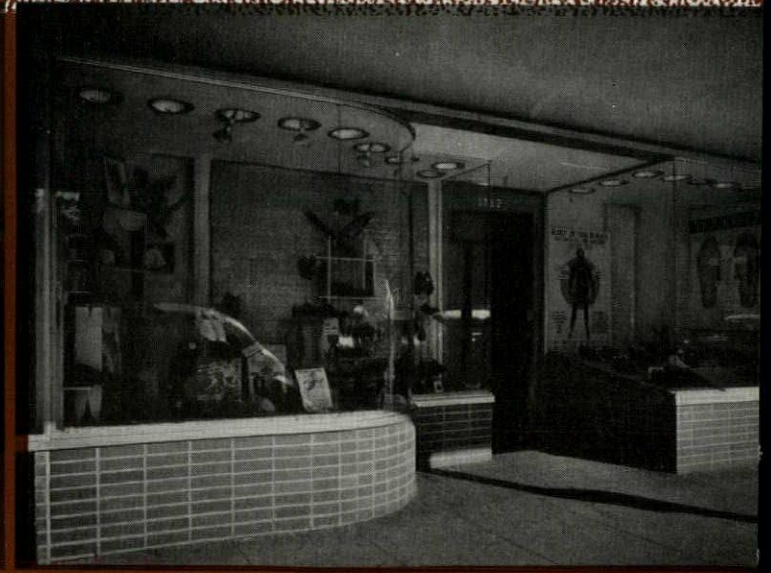
SILL BUILDING
FRANKLIN & KUMP & ASSOCIATES
Architects

RETAIL STORES

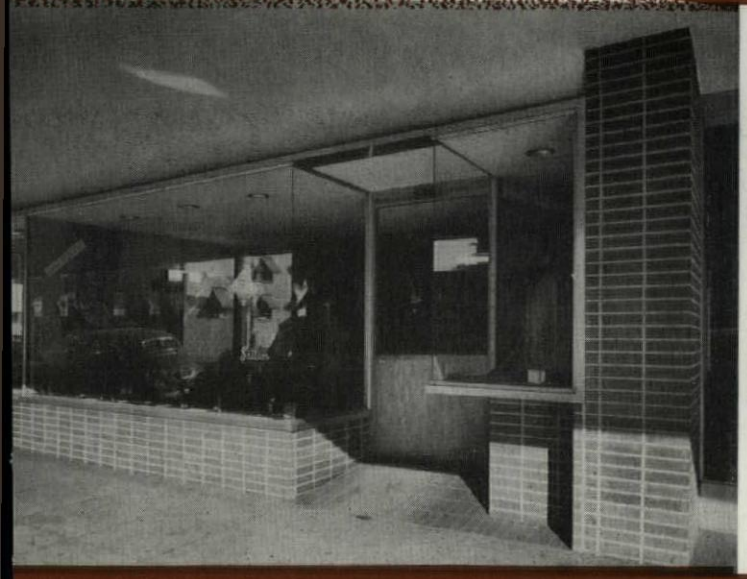


Three storefronts along 18th Street demonstrate flexibility within the building structure





Front at corner of 15th and Chester Streets

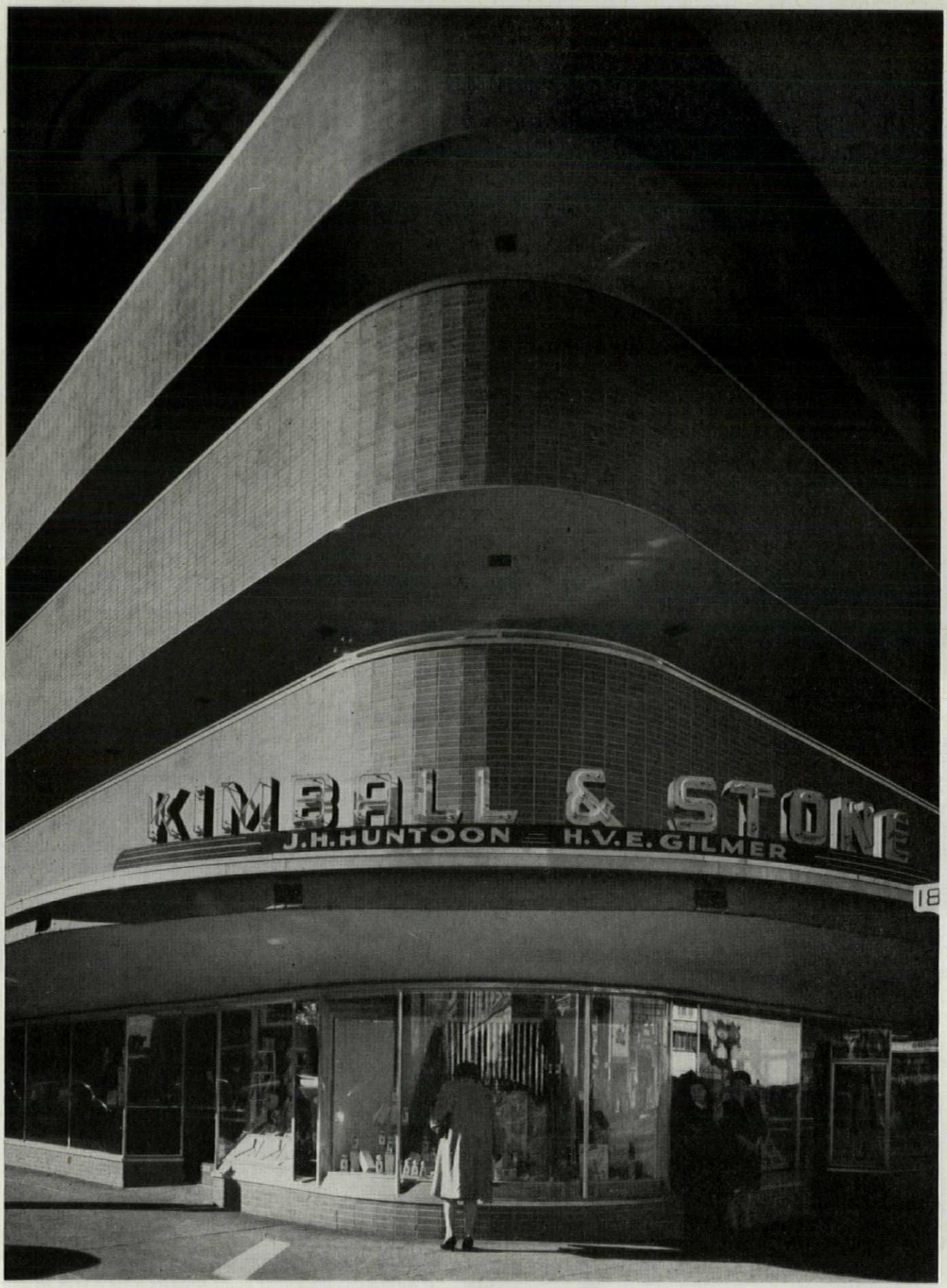


Excerpts from a letter from Hugh Sill, of Sill Properties, Inc., owners of the building:

"I can truthfully say that the structure's most impressive characteristic is flexibility. The public is readily impressed by its uncommon appearance from without. However . . . we had to go further, and . . . develop a smoothly operating unit which could be easily arranged to suit the tenant's fancy at low cost to the owner . . . . We could have used cheaper materials but they would not have given us the flexibility we desired . . . .

"The fact that tenants can always have natural light, as well as fresh air and sunshine by conveniently stepping onto the outside corridor, has had a very positive effect in keeping the building 100% occupied.

"In maintaining the outside of the structure there is little we can do other than dust the stainless steel trim and paint the sash and doors . . . . We could turn a hose on all or any part of the outside . . ."



Sill Building; Franklin & Kump & Associates, Architects

The Sill Building admittedly has an unusual appearance for its prosaic location: the main business intersection of an average American community. This has not, however, limited its acceptance; it has full tenancy; in four years it has become Bakersfield's landmark. The Mayor of Bakersfield uses the corner of one of the balconies as a rostrum on occasion. The balconies are always busy with building traffic; the building has life; its workings form a continuous display, in the same way that an open-front retail store capitalizes on the activity within. At night, people using the balcony-corridors are silhouetted against the glow from the glass-walled offices. The architects apparently decided that, if advertising is a concomitant of American business, advertising values must be incorporated into the design.

Frank acceptance of such a premise did not lead to any efforts at pomposity, however. The building is unashamedly a business structure, and no extraneous design element is allowed to obtrude upon that purpose. It is a successful advertisement because it displays directly the one thing in which all human beings are interested: human activity. It makes provision for its stores to advertise, and figuratively clasps the advertisements to the bosom. It is not even much harmed by the tremendous sign on the roof, which was neither contemplated originally nor designed by the architects. The addition of more stories will probably improve its appearance by repeating the dominant horizontals of the facade; the roof top sign is to be removed when that occurs.

But the one thing which, above all, the building was designed to do was to make a profit, and in this direction no effort was spared. We have reviewed in general the manner in which its structure, finish, and equipment were integrated to this end. The results show up in all sorts of unexpected ways.

For one thing, the flood of natural light in its offices not only places less strain on the eyes of their occupants; it also means that artificial lights are turned on much later in the day than is normally the case. As a result, the artificial lighting bill for the entire building is lower than that for the owner's residence.

BUILDING EQUIPMENT

Air Conditioning equipment, the architects state, is a necessity in view of the local climate. The system provides for treating the air in the basement mechanical room. From there treated air is conveyed to the mechanical rooms located on each floor, where it is further treated and distributed to the floors. Mechanical rooms are located in the center of the building so that every floor is divided into two areas, each individually supplied from the central distribution room. This subdivided system makes it possible to shut down the supply for only half a floor, if necessary, without disrupting the entire building system or throwing it "out of balance."

The supply duct for each half-floor runs down the center of the building, and branches are taken off at 4-foot intervals to registers on the faces of a dropped center portion of the ceiling. Thus, no matter where a partition is placed, each office is assured its proper proportion of treated air. Since the outlets run down the center of the ceiling, on both faces of the dropped panel, this is true whether pairs of offices (anteroom and private) or large general offices (through from wall to wall) are installed.

Each register has a damper regulator. Each floor has separate fans, filters, and coils; the same coils carry cold water for cooling or hot water for heating the air. Thus each floor has, in effect, its own system. The gas-fired boilers and compressors are located in the basement. For cooling, water from a well on the site is used. (Originally, a cooling tower was intended, but this proved unnecessary and has been eliminated.) In the basement floor is an exhaust duct to carry off gasoline fumes.

Second and third floor ceilings are insulated with mineral wool. Hot water flow and return piping is insulated with sectional covering, 1 inch thick, of 85% magnesia. Fittings have plastic covering and boiler has 2-inch mineral wool blanket secured with galvanized wire. All insulated heating and air conditioning work in the boiler and fan rooms is painted two coats of lead and oil; all hot iron work in the boiler room is painted with non-corrosive graphite. All other exposed iron work in these locations is painted with lead and oil.

Plumbing fixtures: Lavatories throughout are wall-hung vitreous china, fitted for tubing supplies, with shut-off valves. Over each lavatory is a soap dispenser. Waterclosets in men's and women's toilets are also wall-hung, of syphon-jet type, equipped with black check-hinge seats and flush valves with integral vacuum breakers. Urinals are installed in batteries of two, with automatic urinal tank in the adjacent utility room, which also contains an acid-resisting enameled service sink. Drinking fountains are combination fountain and cooler units.

Soil and waste piping are extra-heavy cast iron, except that under 2 inches in diameter, which is galvanized steel. Vent piping is galvanized steel or standard cast iron, depending on size. Cold and hot water supplies are hand-drawn copper tubing with soldered fittings. Leaders are galvanized iron, graded so condensate can be drawn off. All piping passing through floors is provided with heavy cast brass floor flanges.

The house tank, 8 ft. in diameter and 11 ft. high, is of ¼-in. steel, riveted and caulked, and is supplied by a centrifugal pump having a capacity of 100 GPM against a 62-ft. head. Power is supplied by a 5 HP motor, controlled by a float switch.

Cold water is obtained from the local water supply. Hot water is furnished from a 4-ft.-diameter tank, 10 ft. long, connected to a fully automatic heater having a capacity of 300 GPM through 100°F; thermostat control is located in the tank.

In the boiler room are a 200 GPM screenless sewage ejector and steel sump tank, 4 ft. in diameter by 6 ft. 6 in. deep.

Electrical work: The primary service line, from the power company connection to the building transformer

vault, is 5000 volt, independently grounded. Secondary service consists of a bus-bar structure suspended from the transformer vault ceiling. From the main switchboard the lighting circuits are fed by a "Bus-Wa" type of feeder system. Provision is made for store feeder switches and meters. There are a power panel for the boiler room switchboard and separate circuit breaker panel boards for the garage and each office floor. Wiring is installed in conduit or raceways.

Underfloor raceways provide separate channels for lighting and telephone circuits in office portions of the building. Corridor-balconies are lighted by flush-mounted lensed ceiling fixtures, offices by suspended luminaires.

FIRE SAFETY

The structural frame—reinforced concrete—and the curtain walls—metal, glass, and brick—are incombustible. The ceiling surfacing, acoustical tile, has a one-hour rating. Considering this and the general accessibility of all floors, the use of wood furring to support the ceiling finish was approved by local authorities, who are enthusiastic about the building from the fire-safety point of view. The fire department attaches great importance to the fact that they can place ladders against the building in any location and can get into any part of the building quickly.

COSTS

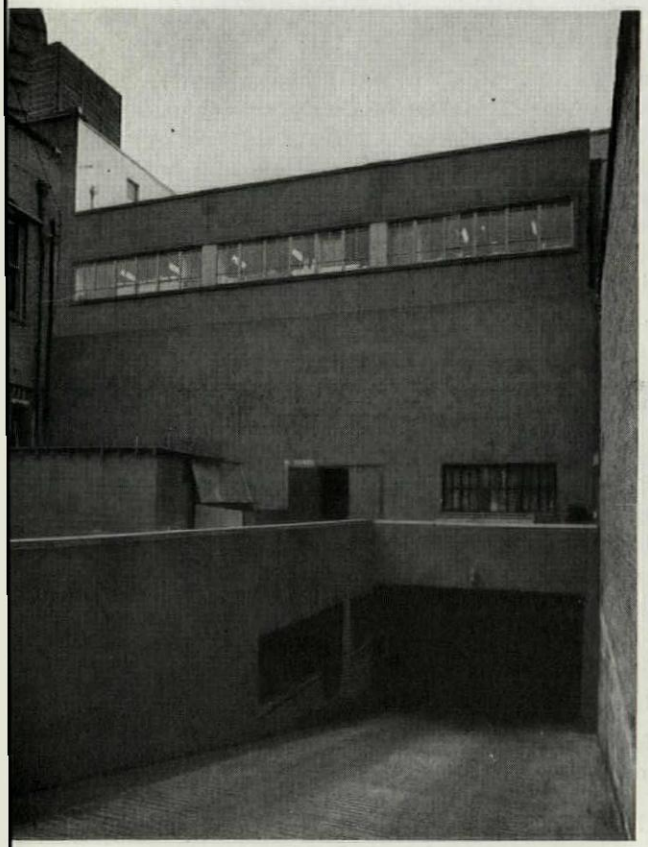
Total cost of the building, not including architect's fee, was $152,222.88. This reflects the selection of fairly expensive materials because nothing less would perform satisfactorily nor provide the inexpensive maintenance which was desired. The choice was deliberate, yet judicious; money was not wasted on "gold-plating" where this was unessential. The building was completed in September, 1940, by the firm of L. H. Hansen & Sons, general contractors.

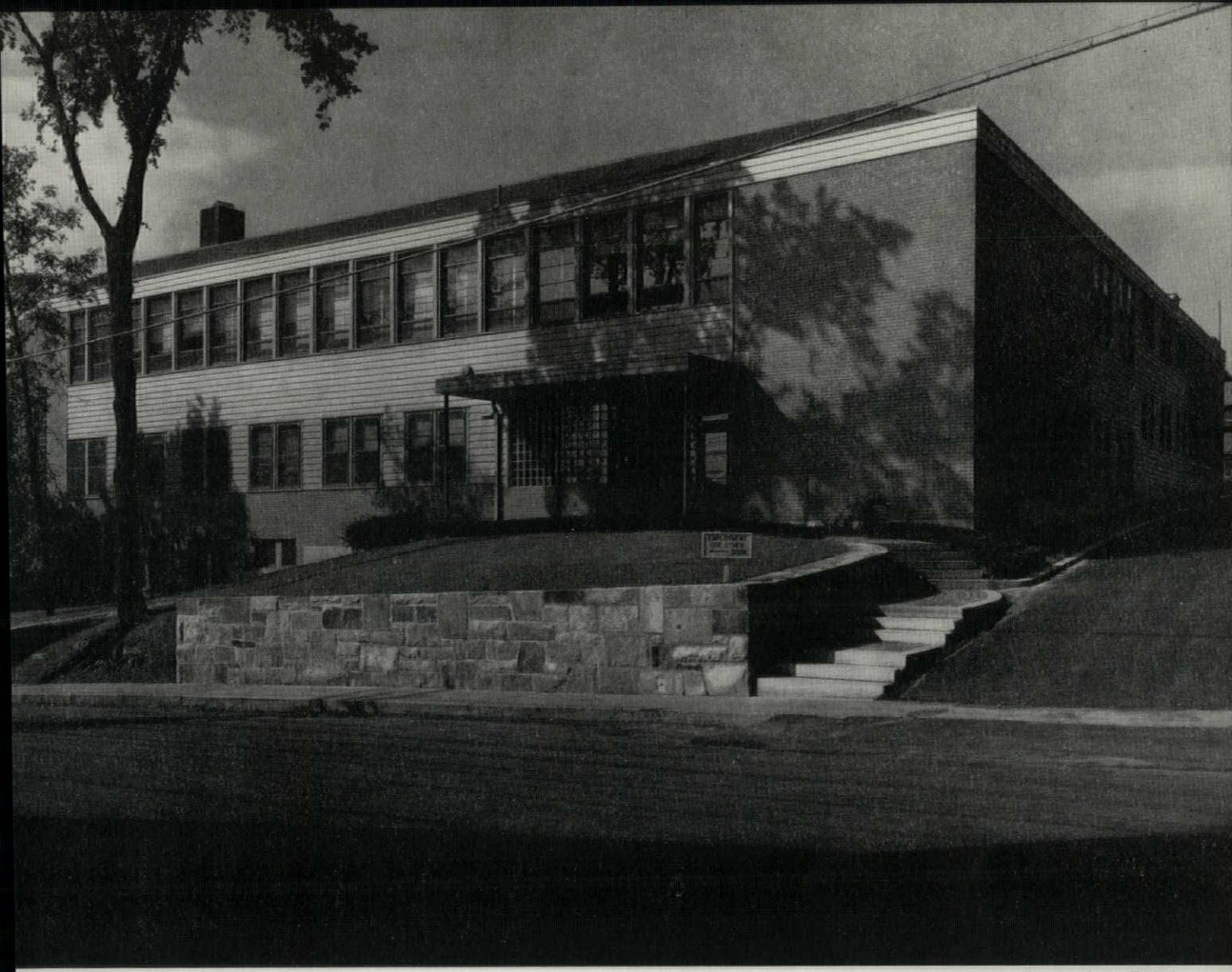
SILL BUILDING

FRANKLIN & KUMP & ASSOCIATES

Architects

The Achilles' heel of the Sill Building appears in the right-hand photo, below, of the light court. Wide enough to serve its main purpose, nevertheless it scarcely provides any of the amenities. The location of the flue, in the basement, was determined by the necessity of providing car parking space on that floor; above the first floor the metal stack had to be supported by the structure, so an offset was needed. Small structures on the first-floor roof deck are individual air coolers installed by the occupants of the store space below. This arrangement was decided upon because no economical, efficient central scheme could be agreed upon. Photo at lower left, entrance to basement garage.





Photographs by Haskell

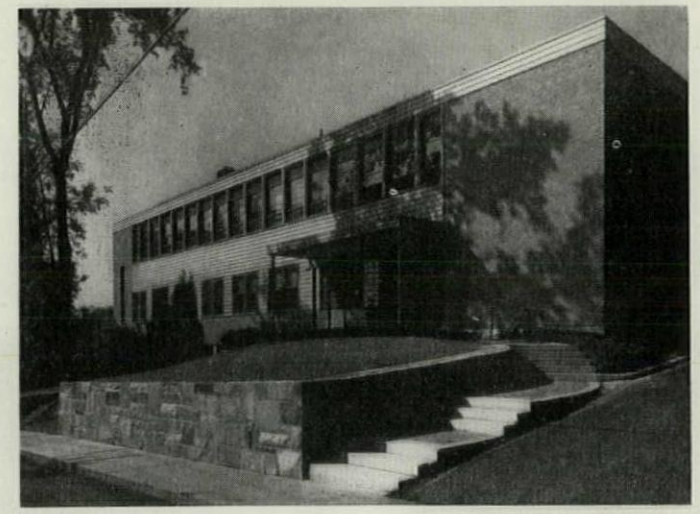
FACTORY ADMINISTRATION BUILDING, BATH, MAINE

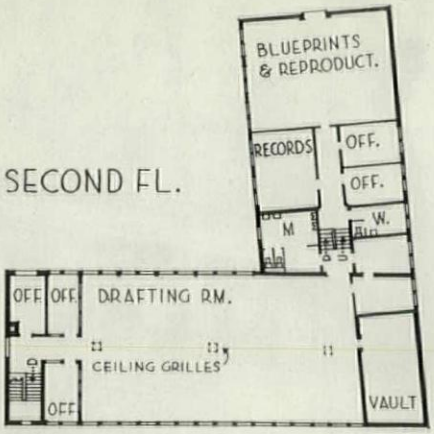
Alonzo J. Harriman, Architect-Engineer

MANAGEMENT

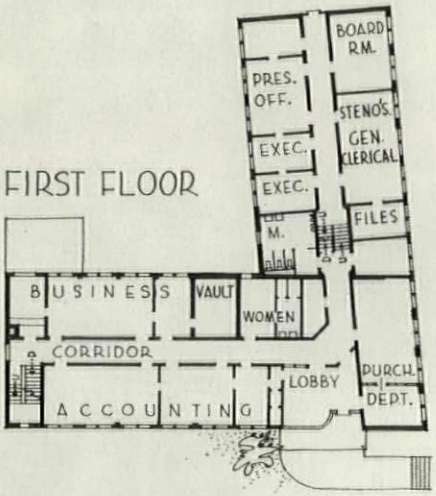
The engineering approach to the design of this office building produced a thoroughly logical solution—in basic parti, in organization of departments, in use of materials, and in design expression. If, in the last category, it is more conservative and precise than boldly adventurous, the analyst should remember that the building is located in the State of Maine, where change—except in the weather—is traditionally a slow process. Considering this, it seems to us that the building shown here is a solid instance of regional design progress.

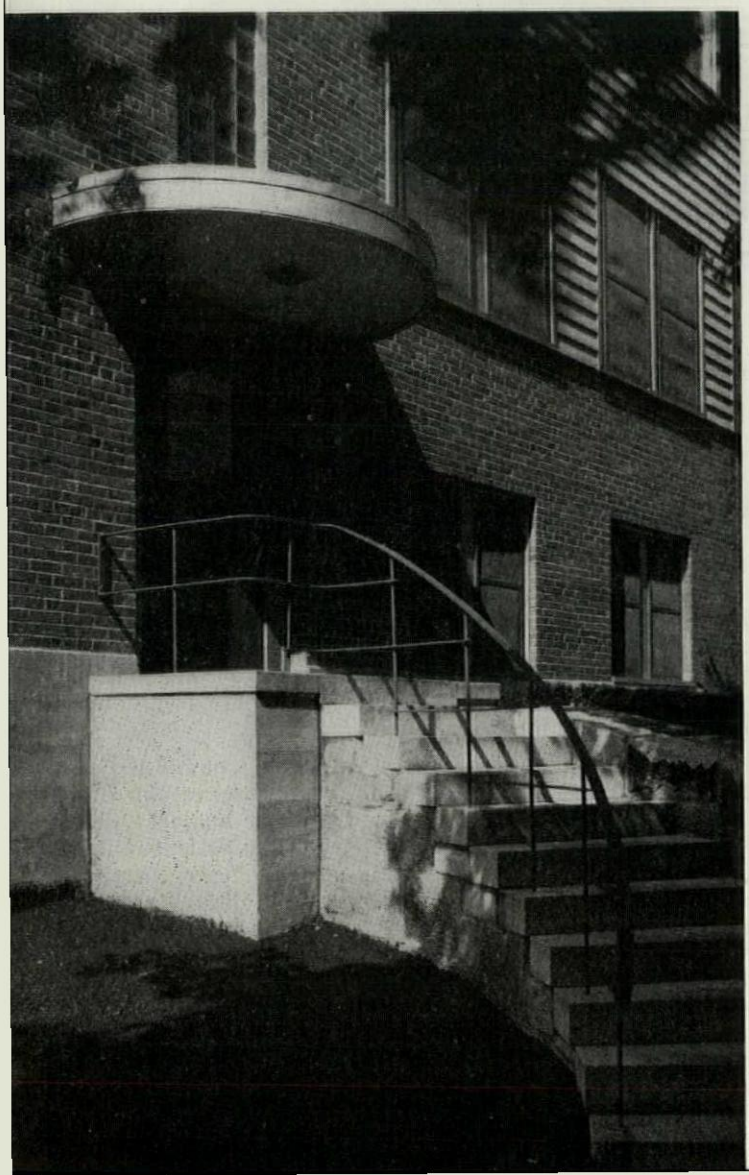
The site, a sloping lot practically all of ledgestone, suggested a scheme of several levels which would avoid costly excavation. In studying desirable relationships between various business departments, the architect found that multilevel organization would actually assist operational efficiency. Executive offices (in the wing) are one half story above general business offices (at the main-entrance level) and one half flight below drafting and engineering rooms, which, in turn, are but a half story below the blueprinting department. Hence, interoffice dealings are usually accomplished with a minimum of stair climbing. Located at the building's basement level is the personnel department. A separate outside entrance eliminates any possible conflict with the entrance to the business offices.

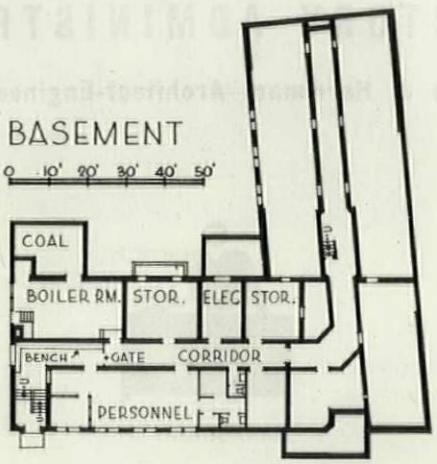




ALONZO J. HARRIMAN, Architect-Engineer







A 20-foot drop in the site led to adoption of a multilevel plan. The entrance shown at left, barely visible at the far end of photograph at top of page, leads to the basement floor and personnel offices, entirely separated from the main-floor office entrance

When the building was planned, structural steel was unavailable; hence, the large amount of wood on the exterior, and masonry restricted to areas where few openings occur. The small amount of steel that is used for lintels came from scrap salvaged from the plant for which these offices were built.

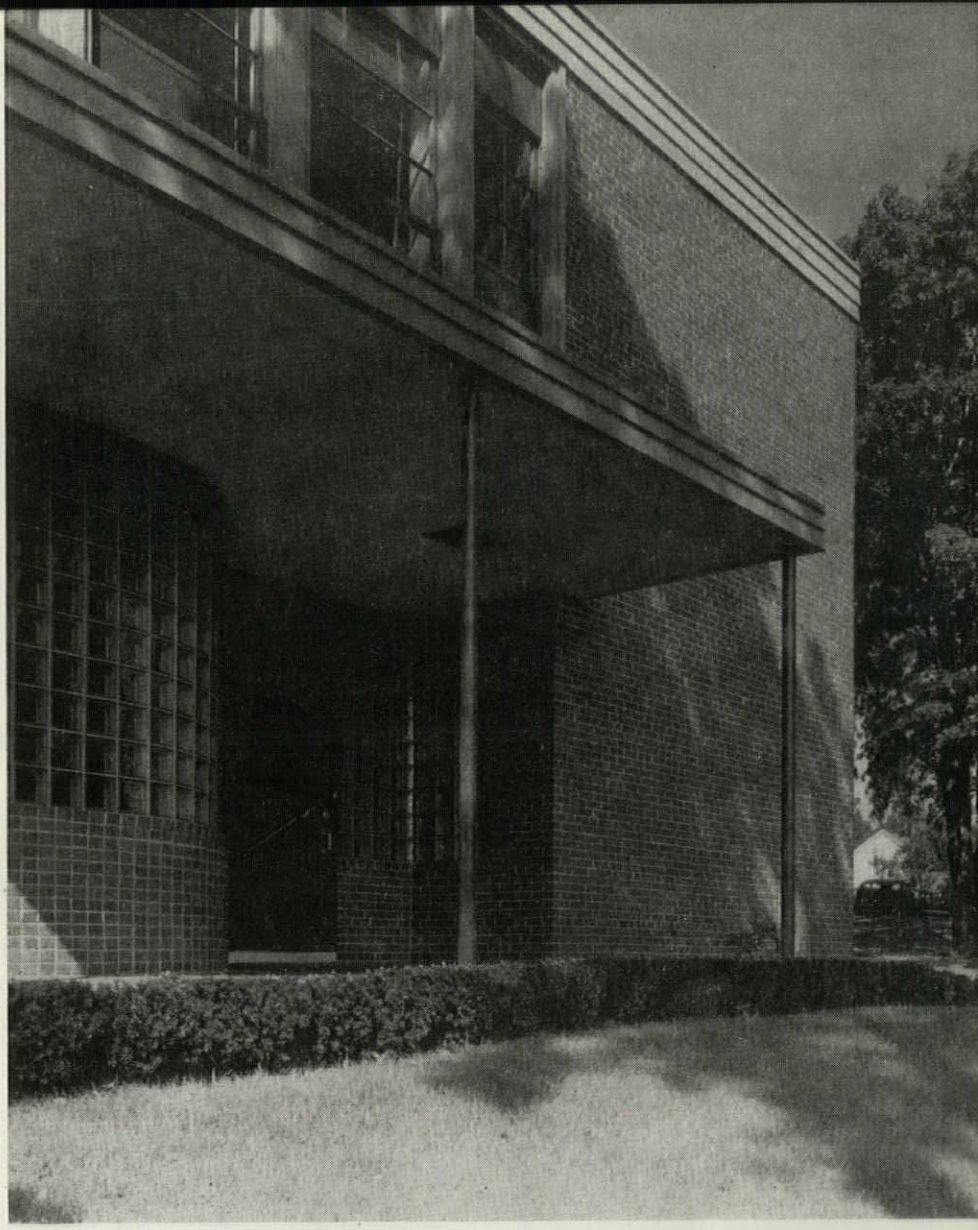
All floors, except where storage vaults occur, are of wood construction. For the vaults, reinforced concrete floors and ceilings are used, and walls are of masonry. On the ground floor and up to first floor windows, both interior and exterior walls are exposed brick masonry. Floors and ceilings of office areas are continuous construction and partitions are placed wherever needed. Thus, rearrangement of partitioning to suit changing needs can be made without alteration of permanent finishes. The ceilings are acoustically treated throughout the building; floor surfaces are variously wood, concrete, linoleum, and asphalt tile.

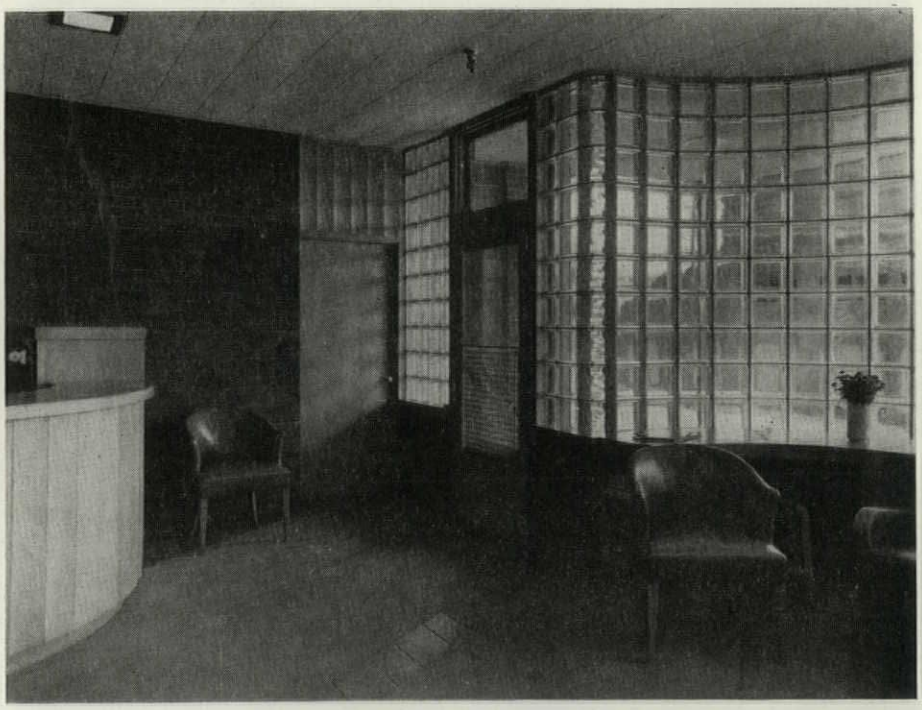
The lobby, floored with wide knotty oak boards, is separated from the corridor behind it by an egg-crate lattice screen with panels of fluted glass.

The bleached oak waiting bench, desk, information counter, and telephone switchboard are designed and built in as integral parts of the lobby plan. Details of the reception desk and switchboard are given on Page 70.

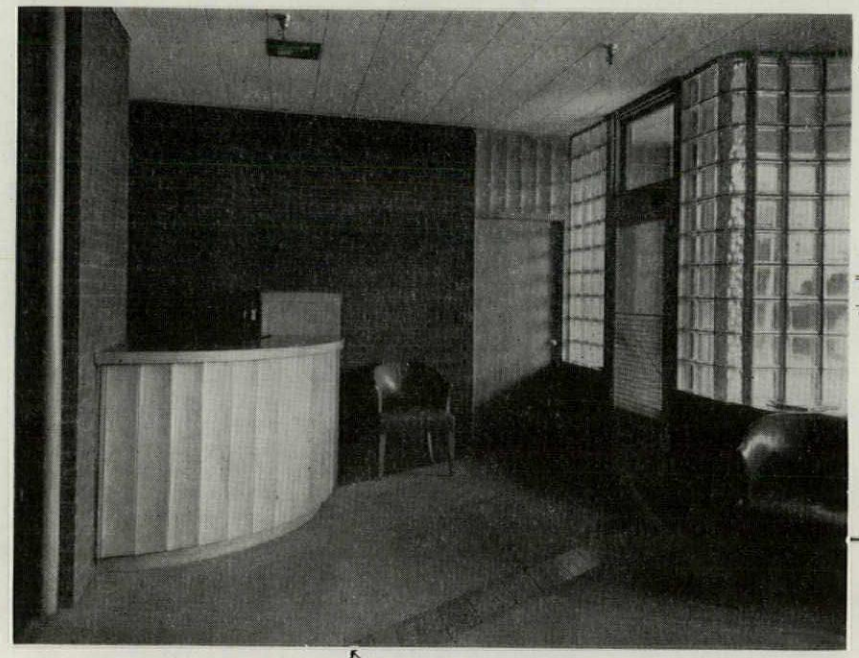
Color is an important part of the design of the building. In the lobby, chairs and the built-in bench are upholstered in apple-green leather; the carpet is rose; one wall is yellow, and other walls are either glass surfaced or of native red brick. Office color schemes are worked out in a variety of fairly bright colors, with a light reflecting interior wall and end walls of darker shades of the same hue. Even the boiler room is colorful, in a scheme of blue and gray tones with trim painted deep blue.

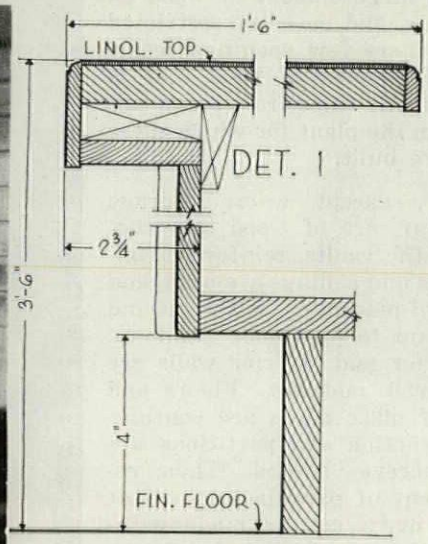
Wood trusses span the drafting room. To house these as economically as possible, hipped roof construction is used. An automatic sprinkler system is installed throughout the building, which is heated by a steam system controlled in three zones.



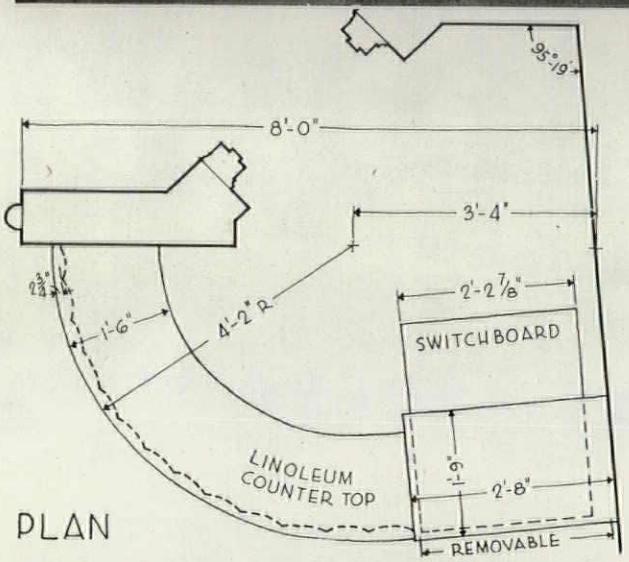


The curved wall of glass block at the main business entrance of the building encloses one end of the built-in, bleached oak shelves and waiting bench

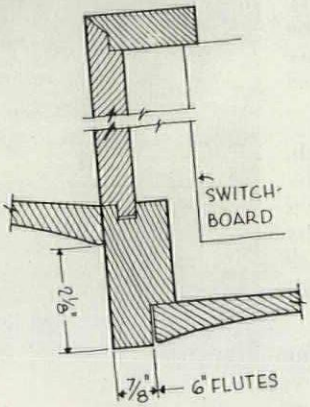




DET. 2 SCALE • 3"=1'-0"

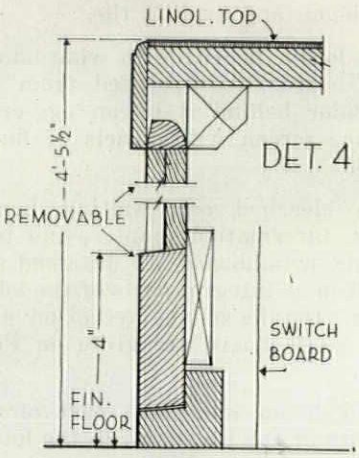


PLAN

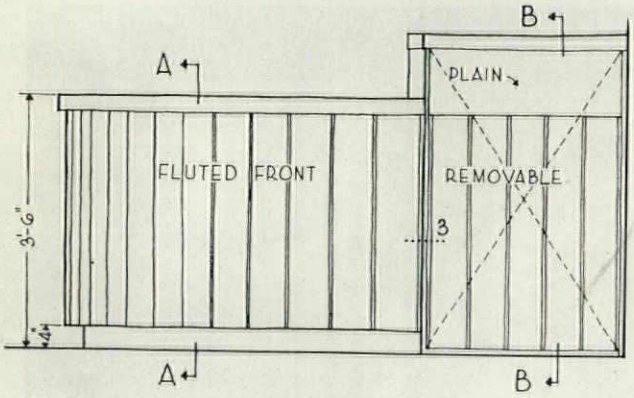


DET. 3

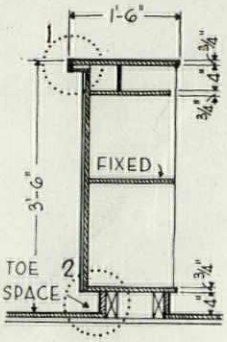
SCALE • 3"=1'-0"



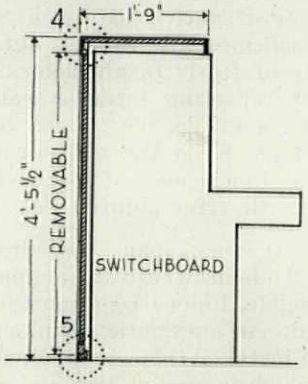
DET. 5



ELEV. SCALE • ⅜"=1'-0"



SECT. "A-A"



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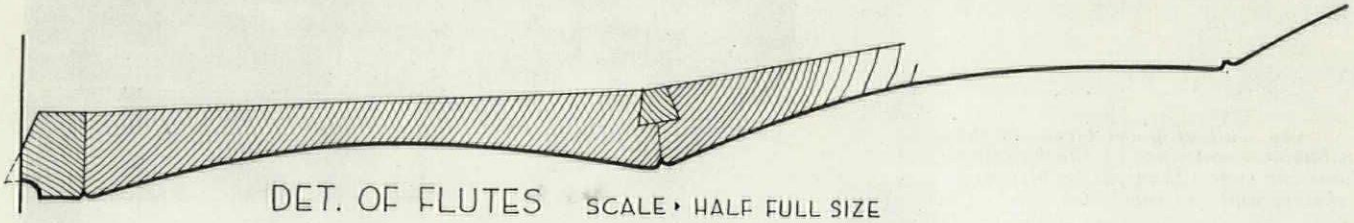
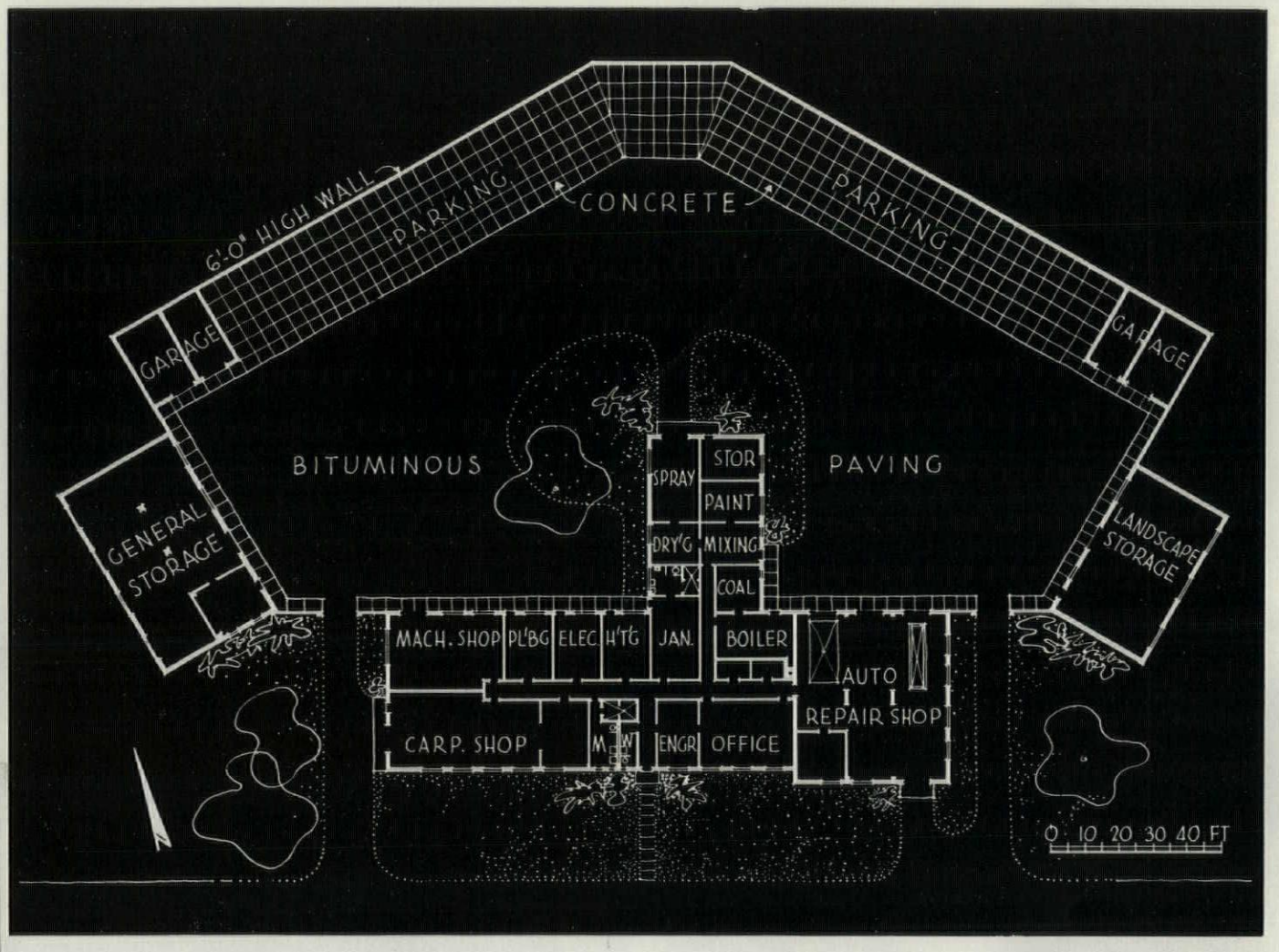


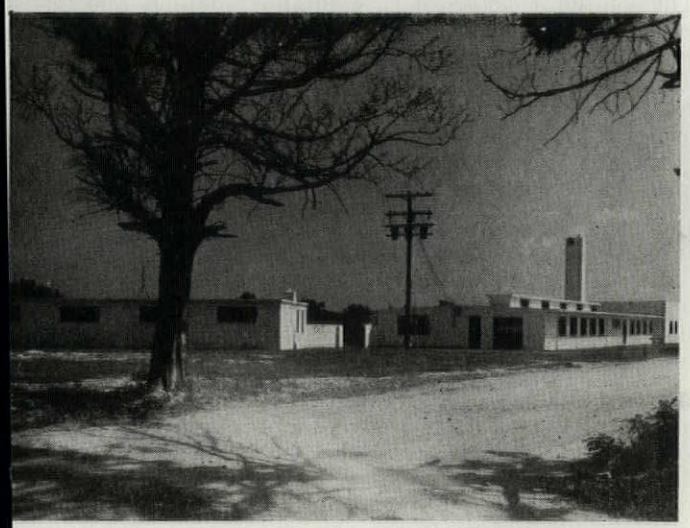
DET. OF FLUTES SCALE • HALF FULL SIZE



Maintenance Buildings, Greenbelt, Maryland
FPHA, Region III

MAINTENANCE

Victorine Homsey • Eugene H. Klaber
Associated Architects

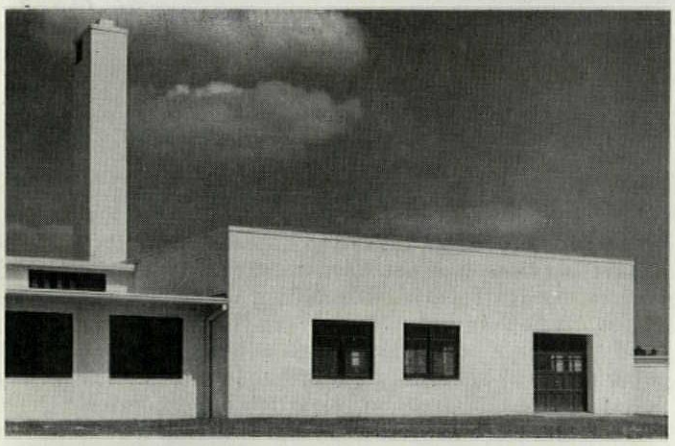


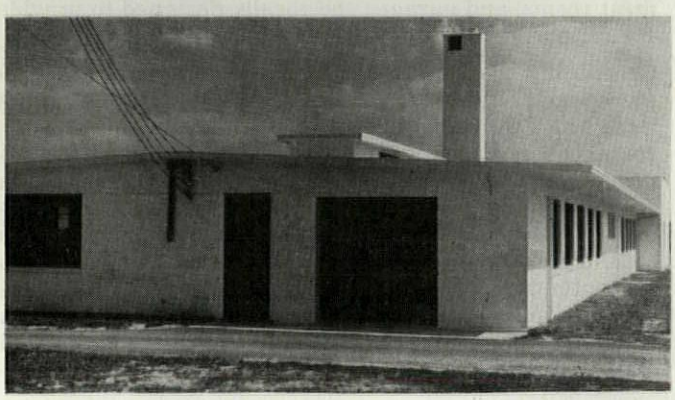
General storage building at left; main building, right

As a category, architecture to house community maintenance services has not been particularly distinguished for either its functional qualities or design excellence. More often than not, a town's trucks, landscaping tools, and various storage rooms are relegated to any available old shed that the neighborhood offers. The group of structures at Greenbelt is a notable exception. Here, an intelligent architectural approach has produced an orderly series of interrelated offices, warehouses, equipment rooms, and garages specifically designed to provide for all phases of community care and repair.

Greenbelt's need for such facilities was substantially increased when a few years ago 1,000 new dwelling units were added to the original 900. Basic requirements were for shops for repair work, a storage building for expendable materials, parking space for 31 trucks, and a storage building for landscaping materials and equipment. For most of the trucks, outdoor parking was considered satisfactory, but for the ones allocated to carpenters, steam fitters, plumbers, and electricians, garages were needed, as these trucks are loaded with relatively valuable materials and require the protection of locked doors at night.

Photographs by St. Thomas





The auto repair shop (above) dominates one end of the main structure. Photo at top, left, is the street view of this same unit; at bottom, the carpenter shop end of the central maintenance building

The solution consists of three major buildings and two garages organized around a courtyard. "Since the group is at the edge of the development," the architects explain, "it was deemed advisable for purposes of protection and supervision to make it a single compound enclosed by a masonry wall." They also maintain that these considerations led directly to adoption of the pentagonal layout of the group.

In days when pentagons in architecture are suspect, the scheme may seem a trifle forced; but granted the premise that the size and placement of the three main buildings are schemed for most advantageous functioning, joining of the lines of end walls forms a pentagon without any straining for effect.

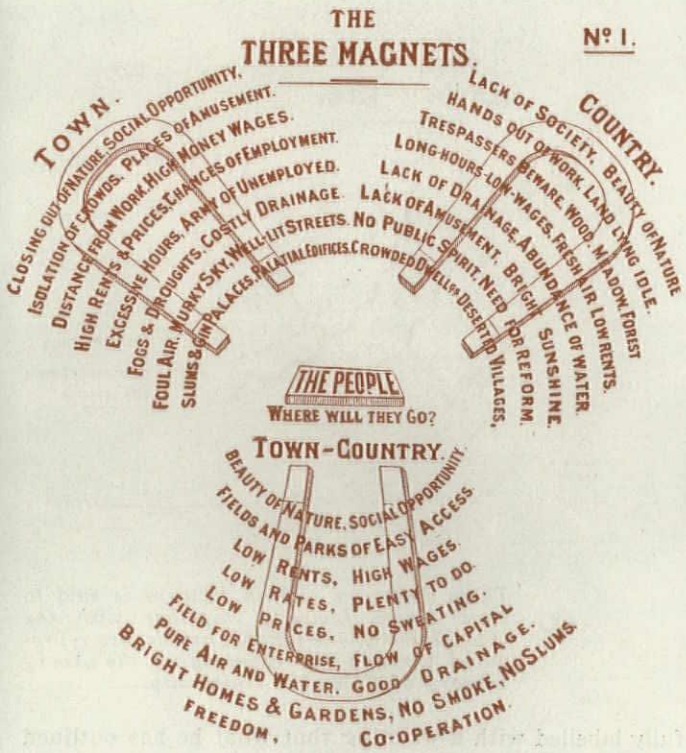
As the buildings were planned when lumber was listed as one of the most critical of materials, wood is used very sparingly—only for doors and windows and their frames. Wall construction is of brick masonry; partitioning is built of cinder block, and the roofs are reinforced concrete. In most areas, the concrete floors are left plain; in office portions, asphalt tile is used as surfacing.

Howard *Mumford*

by LEWIS MUMFORD

AN AMERICAN INTRODUCTION

to Sir Ebenezer Howard's "GARDEN CITIES OF TOMORROW"



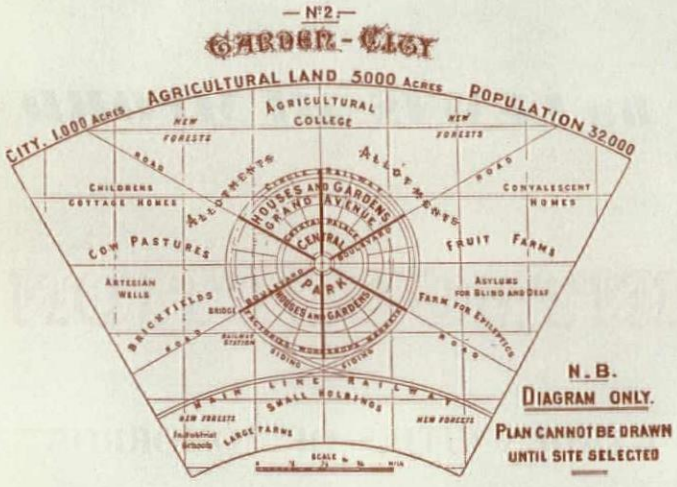
The first diagram from Howard's "Garden Cities of Tomorrow" remains as effective a graphic presentation of an idea as any of the high-powered modern advertising copywriters has yet produced.

Garden Cities of Tomorrow has done more than any other single book to guide the modern town planning movement and to alter its objectives. But it has met the traditional misfortune of the classic: it is denounced by those who have plainly never read it and it is sometimes accepted by those who have not fully understood it. Nothing could be a more timely contribution to building of life-centered civilization than the re-publication of Sir Ebenezer Howard's famous book.

At the beginning of the twentieth century two great new inventions took form before our eyes: the airplane and the garden city, both harbingers of a new age: the first gave man wings and the second promised him a better dwelling place when he came down to earth. Both inventions had originally been conceived by that brilliant, many-sided technician, Leonardo da Vinci; for he not merely studied the flight of birds to good purpose but proposed to abate the congestion and sordor of Milan by building a group of ten cities of five thousand houses, limited to thirty thousand inhabitants each, cities which, in another place, he proposed to design with a complete separation of pedestrian and horse traffic, and with gardens attached to a municipal irrigation system. Ebenezer Howard was not influenced even at second hand by Leonardo, whose notebooks were not yet available in English: instead, he was stimulated by a group of early nineteenth century writers; Thomas Spence, the land reformer, who sought the nationalization of land; James Buckingham, who had published a plan for a model industrial town in 1848; Edward Wakefield, who had pointed out the necessity for a more systematic plan of colonization for distant lands; and not

least, by two critical thinkers who were nearer at hand, Henry George and Peter Kropotkin. The work of these men gave substance to Howard's own intuitions and beliefs; but no little stimulus came to him from his visit to America, for he not merely found the name Garden City waiting for him on Long Island, but he had before him the constant spectacle of new communities being laid out every year on new land, and he was impressed by the possibility of a fresh start.

Howard embodied his ideas in a modest little book called *Tomorrow*, which was published in 1898, and the idea took on so well that a new edition, which he entitled *Garden Cities of Tomorrow* presently followed it. Had



For all its typographical quaintness, this drawing and its accompanying detail below represent clearer thinking about the organization of communities than is being done even today by some "planners."

through the pages of *Garden Cities of Tomorrow* for even the hint of such a proposal.

In the matter of density in housing, Ebenezer Howard's proposals were on the conservative side: in fact, they followed the traditional dimensions that had been handed down since the Middle Ages, and, one may add by way of criticism, followed them too closely. For Howard specifically said that the average size of a building lot was 20 by 130, while the minimum was 20 by 100. This twenty-foot front is far too narrow for a good modern building row, with relatively shallow rooms, fully open to the penetration of the sun's rays. But the densities so provided are those of the traditional city before overbuilding took place: 20 by 100 is, for example, the typical New York City lot. With five to a family this gave a density of about 105 per acre, and with our smaller family units would give a density of about 84 per acre.

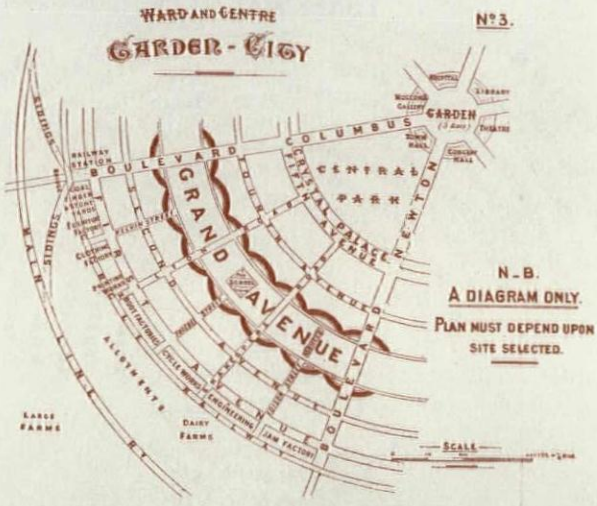
Indeed, in the concrete details of planning Howard was under the spell of the age that lay behind him. His Crystal Palace Road, with its great shopping district under glass, facing a wide open space, partly reminds one of Princes Street in Edinburgh; but even more it recalls the glass-covered streets of that early Victorian Buckingham, if not the fantasies of Mr. H. G. Wells. Howard did indeed make one brilliant technical innovation which has passed almost unnoticed and was forgotten in the development of the garden cities that followed: this was in his conception of the "Grand Avenue," a strip of green, upwards of 3 miles long, dividing the town into two separate zones. Such an integral green strip, for separating the component neighborhoods of the city, suggests a pattern that has still fully to be worked out: one sketched out in the report on Honolulu (*Whither Honolulu?*) which the writer submitted to the City and County Park Board in 1938.

But Howard's greatness did not lie in the field of technical planning, and no one knew this better than he did: every concrete sketch of the new type of city is carefully labelled with a warning that what he has outlined is only a diagram, and that the actual city would have to be an adaptation of this diagram to actual conditions. When Messrs. Unwin and Parker came to design Letchworth itself, they perhaps leaned over backwards, in

Howard been a mere dreamer this book might have remained an object of curious discussion, like Edgard Chambless's *Roadtown*, which gave to the physical utilities of planning the priority that Howard, a far better sociologist, gave to social and economic arrangements. But Howard was a practical idealist, like the Rochdale cooperators before him; and he utilized the widespread interest in his idea to gather support for the planning and building of an experimental Garden City.

Howard's initiatives in the garden city paralleled the Wright brothers'. I emphasize this parallelism because it points to a functional relationship that has too often been overlooked even by those who have advocated the Garden City; for if the airplane, in its present or conceivable future forms, is to be anything but a menace to health and sanity and safety, and if it is to become as much a part of our daily life as the motor car now is, it will be so only after the garden city, with its wide belt of open land, has become the dominant urban form.

What were the leading ideas that have given Howard's theoretic exposition, and its practical application in Letchworth Garden City, the immense influence that they have achieved? One would think, from a great many foolish allusions that one finds currently in both English and American discussions on town planning, that the sole characteristic of the Garden City was Howard's alleged plan for lowering the density of the population to twelve houses to the acre. Nothing could be more fantastic than this error: you will look in vain

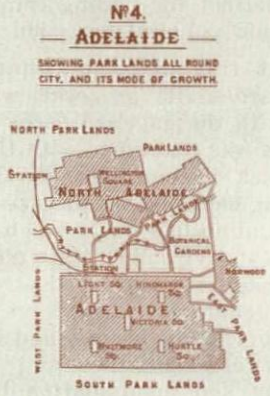


These diagrams (which Howard is said to have drawn himself), together with the other illustrations for this article, are reproduced through the courtesy of the Avery Library of Columbia University.

their effort to avoid mechanical stereotypes, in order not to duplicate Howard's diagrammatic city. Unwin's love for the rambling layout of medieval German hill towns was even in some degree at war with Howard's rational clarifications and forwardlooking proposals.

But the important point to remember is that the Garden City principle deals with the constants in planning: the idea itself does not stand or fall with the successes or mistakes of Letchworth or Welwyn; neither can Howard's contribution be lightly set aside by those who, at a later date, have been led to make a similar analysis and have possessively given the central idea a new name. Plainly like every other invention, Howard's Garden City is open to successive improvements: moreover, the idea would give rise to one type of city in Hertfordshire or Buckinghamshire and another in the San Bernardino Valley in California or in the Columbia River Valley of the Northwest. It is precisely because Howard was both a sociologist and a statesman that his proposals have this universal quality; and that is what gives his proposals something more than a passing technical interest.

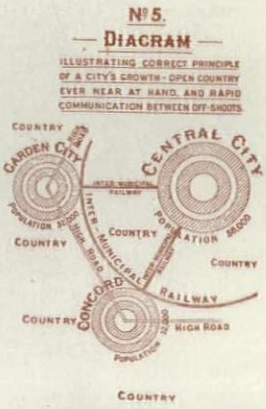
Howard's prime contribution was to outline the nature of a balanced community and to show what steps were necessary, in an ill-organized and disoriented society, to bring it into existence. On one side was the overgrown and over-congested metropolis penalized in its health by



An example cited by Howard to show the healthy provision of park land around and between related communities.

its slums and in its efficiency by ill-sorted and misplaced industries, given to extravagant wastes in time and energy and money merely to transport its goods and people over distances that had been expanded for no good human purpose, desolate in its lack of social facilities, though possessing, in its central institutions, the chief organized forms of social life.

The country, on the other hand, was equally impoverished: emptied out of its more able and enterprising spirits by the very growth of big cities. Here were fresh air, sunlight, pleasant vistas, quiet nights, all scarce commodities in the big cities; but on the other hand, there was another kind of destitution, a dearth of human companionship and of cooperative effort. Agriculture, having lost much of its local market, was a dying occupation, and life in a little village was as mean, illiberal, and dismal as life in a metropolitan slum. Nor would decentralization of single industries into the open country help matters here: for if man is to live a balanced life, capable of calling out all his faculties and bringing them to perfection, he must live in a community that fully sustains them. What was needed, Howard saw—and as Kropotkin at the same time proclaimed—was a marriage of town and country, of rustic health and sanity and activity and urban knowledge, urban technical facility, urban political cooperation. The instrument of that marriage was the Garden City.

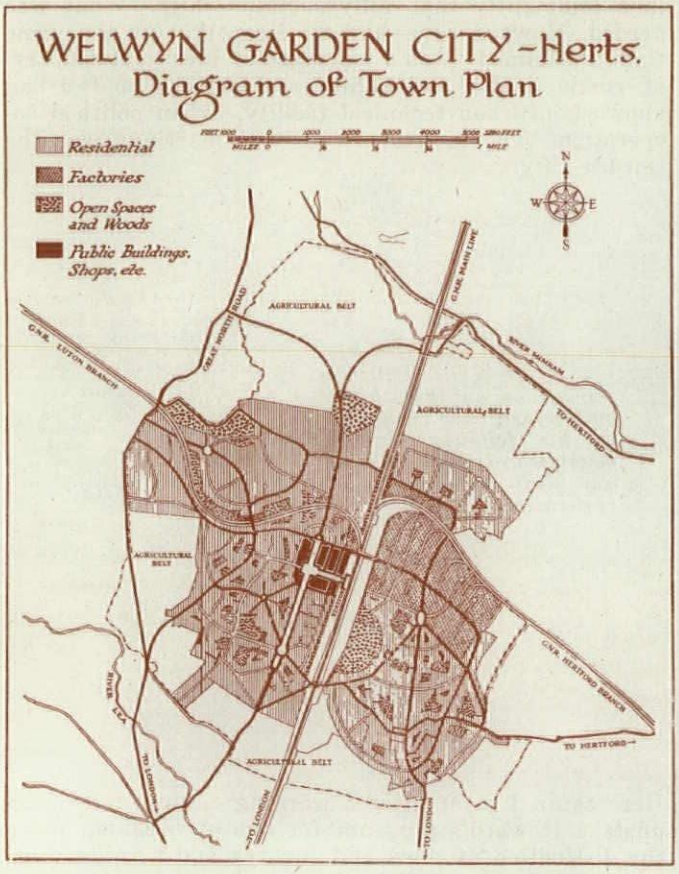


Variations on this theme by Howard have been used by his followers in all countries. It still remains an ideal susceptible of realization.

Here again I must utter a warning against those who mistake Howard's program for one of breaking down the distinction of town and country and turning them into an amorphous surburban mass. The reader who has the patience to follow Howard's argument will see that he had no such end in mind; indeed, the whole project is an attempt to guard against its happening.

For the garden city, as conceived by Howard, is not a loose indefinite sprawl of individual houses with immense open spaces over the whole landscape: it is rather a compact, rigorously confined urban grouping. Of the total tract to be included in the domain of the garden city, 1000 acres, at the center, were to be occupied by the city itself; and five thousand acres formed an agricultural green belt. Thirty thousand people were to live on those thousand acres: thirty per gross acre as compared with fifty-seven per gross acre in the congested, park-destitute county of London. Parks were provided within the garden city on the basis of a little more than nine acres per thousand: well above the four acres suggested in the new plan for London, but not so much higher than the six that Westminster normally boasts. Two thousand people were allocated to the agricultural land: pretty much the same relation as holds for England as a whole between urban and rural population.

Where then did Howard's originality lie? In these proposals: the provision of a permanent belt of open land, to be used for agriculture as an integral part of the city; the use of this land to limit the physical spread of the city from within, or encroachments from urban development not under control at the perimeter; the permanent ownership and control of the entire urban tract by the municipality itself and its disposition by means of leases into private hands; the limitation of population to the number originally planned for the area; the reservation for the community of the unearned increment from the growth and prosperity of the city, up to the limits of growth fixed; the moving into the new urban area of industries capable of supporting the greater part of its population; the provision for founding new communities as soon as the existing land and social facilities are occupied. In short, Howard attacked



Parker and Unwin applied Howard's ideas in Letchworth in 1904. Later, Welwyn, whose plan is reproduced here, was planned by Louis de Soissons.

the whole problem of the city's development, not merely its physical growth but the interrelationship of urban functions within the community and the integration of urban and rural patterns, for the vitalizing of urban life on one hand and the intellectual and social improvement of rural life on the other.

In treating rural and urban improvement as a single problem, Howard was far in advance of his age; and he was a better diagnostician of urban decay than many of our own contemporaries. His garden city was not alone an attempt to relieve the congestion of the big city, and by so doing lower the land values and prepare the way for metropolitan reconstructions.

Howard saw that there was no solution of the city's problems within the existing framework of municipal administration, because one of its greatest problems was the lack of economic and social and topographic relation to the surrounding countryside. Here his vision was far clearer than that of those municipal reformers and those housing experts who have let themselves become absorbed in some single aspect of urban development and have forgotten the larger situation of which the narrow problem they have chosen to solve is but a part. What Howard said about the relation of town and country within the garden city area is equally applicable to the entire business of city and regional planning: the administrative unit that is created must be capable of embracing both the urban and the rural aspects of the region.

Not the least part of Howard's conception was his emphasis upon the *grouping* of garden cities: he realized that the advantage of a single city would be multiplied by the creation of a group or constellation of such cities.

But with his resolute sense of the practical, he first proposed to make an experimental demonstration with a single garden city. Unlike many bold dreamers, he not merely helped to bring Letchworth into existence; but in time he helped found a second city, Welwyn. Meanwhile the ideas Howard had expounded were to become the common property of planners all over the world and were to influence the planning of Hilversum in the Netherlands, Ernst May's satellite communities in Frankfurt am Main, and Wright and Stein's Radburn.

Here we must touch on Howard's qualifications as a statesman; for he was a statesman in the sense that J. W. Mitchell of the cooperative movement was a statesman; and his life-work demonstrates the good qualities of British statecraft, for with all Howard's sense of the moment and the passing opportunity, he was not, like too many of our contemporaries, afraid of rational plans and long-term commitments. Howard's mind was the English mind at its best: always in touch with the practicable, always in sight of the ideal. He believed consistently in the experimental method; and he felt that in political life, no less than in science, a crucial experiment would carry such conviction that those who had been opposed to the scheme would be convinced no less than those who had favored it. With his gift of sweet reasonableness Howard hoped to win Tory and Anarchist, single-taxer and socialist, individualist and statist, over to his experiment. And his hopes were not altogether discomfited; for in appealing to the English instinct for finding common ground he was utilizing a solid political tradition.

At this distance, what strikes one about Howard's garden city proposals was how little he was concerned with the outward form of the new city and how much he was concerned with the processes that would produce such communities. He did not win support by publishing meretricious pictures of the city beautiful or by pretending life would be changed out of recognition in this new environment. He pleaded for definite improvements along lines that had already been accepted: he trusted to change by "the force of example, that is, by setting up a better system and by a little skill in the grouping of forces and the manipulation of ideas." In this grouping and manipulation lay his strength as a thinker. And in one of the concluding chapters, called *Social Cities*, he looked forward to the step beyond experimental demonstration. "Railways," he observed, "were first made without statutory powers. They were constructed on a very small scale. . . . But when the 'Rocket' was built and the supremacy of the locomotive fully established, it then became necessary, if railway enterprise was to go forward, to obtain legislative powers."

Only during the last decade has our thinking on the subject of housing and community planning become political. The Barlow Report in Great Britain has taken up the process of urban improvement at the point where Howard, in his old age, abandoned it, and the great need of the moment is to harness the entire process of urban rebuilding to the substantial innovations in municipal economics and planning that Sir Ebenezer Howard originally set forth.

By now, our neotechnic and biotechnic facilities have caught up with Howard's and Kropotkin's intuitions. Howard's plan for canalizing the flow of population, diverting it from the existing centers to new centers, his plan for decentralizing industry and setting up both city and industry within a rural matrix, the whole planned to a human scale, is technologically far more feasible today than it was forty or fifty years ago. For in the meanwhile, our new means of instantaneous communication have multiplied; likewise our means for swift transport; and points that are fifty miles apart

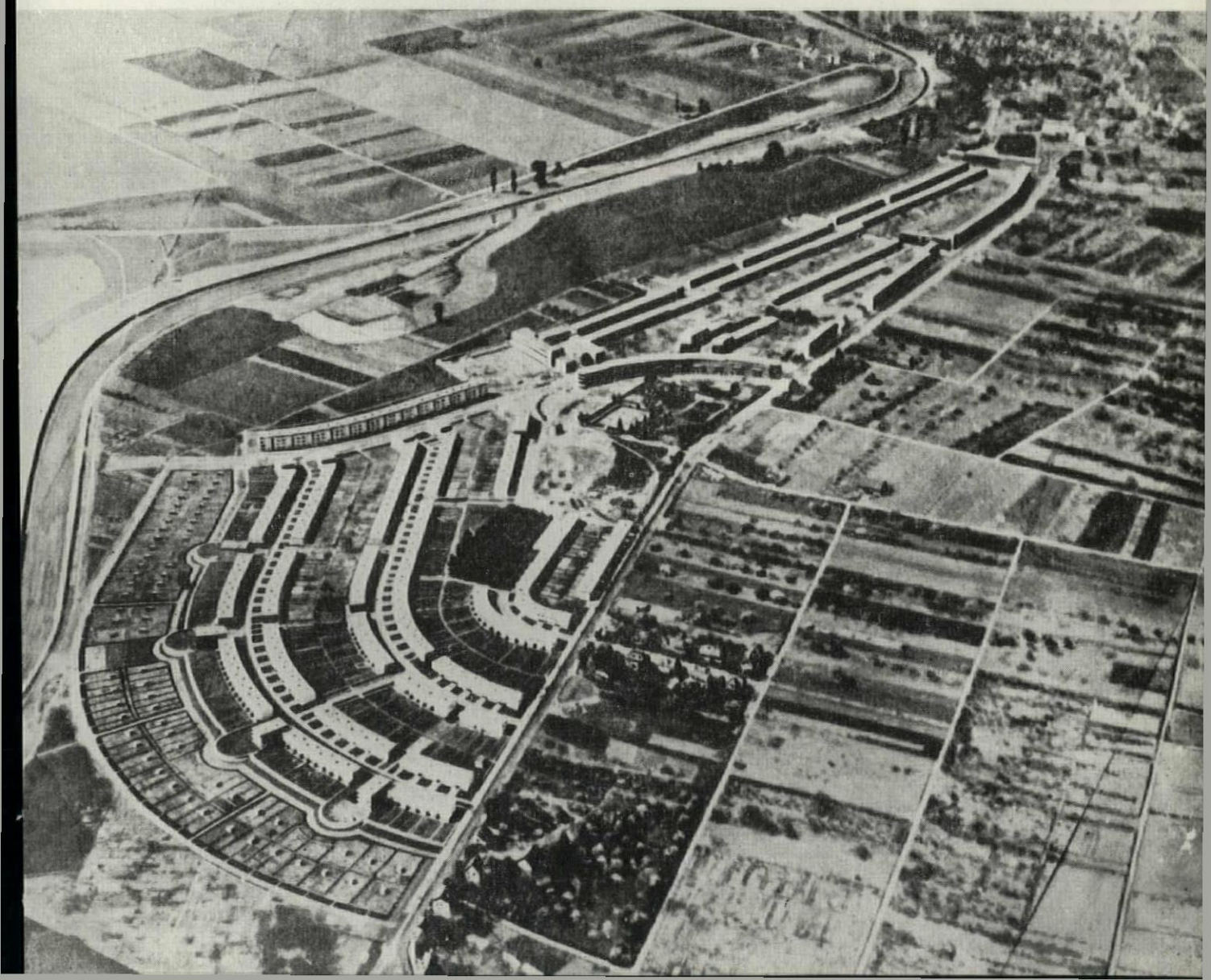
are now as close, provided the garden city pattern of development is followed, as points ten miles apart were in the congested metropolis of yesterday.

Meanwhile, the need for balanced communities has deepened; for the task of our age is to work out an urban environment that will be just as favorable to fertility, just as encouraging to marriage and parenthood, as rural areas still are. Howard, at the time he first wrote, had no reason to be concerned with the threat of a declining population; but it happens, so organic, so deeply biotechnic, was his whole conception, that the sort of city he projected was precisely the kind whose population will be biologically capable of reproducing itself—and psychologically disposed to do so. With the prospects of a dwindling population if the past tendencies toward metropolitan concentration continue, the question now becomes, not whether Britain and the United States can afford to build garden cities, but whether they can afford to build anything else.

So far I have dealt with Howard's thought in relation to its immediate environment. But the ideas for which he stood have no national boundaries; and the kind of urban organization he favored has an importance for the United States for precisely the same basic reasons that it has for England. Our own traditions of city building include the New England village which was indeed originally an informal kind of garden city; it includes the early New England factory town, which, as Mr. John Coolidge has shown, embodied some very admirable efforts in both town planning and housing, and not least it includes a multitude of utopian centers from the Shaker communities in New York and Massachusetts to Salt Lake City in Utah in which an effort was made to lay down physical and social standards. Meanwhile, the over-canny and socially disruptive speculation which produced the great mass of our industrial and commercial centers has created vast areas of blight that cry as loudly for reorganization and rebuilding as the bombed areas of Britain.

Here, too, partial experimental efforts have been made in the right directions, from the communities erected by the U. S. Shipping Board in 1918 to the greenbelt towns that were created by the Resettlement Administration in 1936—not least Greenbelt itself. But, as in England, reformers and politicians have avoided an integral attack upon the problem of civic reconstruction and have confined themselves to the demolition of slums and to the building of a multitude of housing communities, some of which are, by their very constitution, the slums of tomorrow, if not already the slums of today. Here today there is an acute need for the kind of funda-

A famous German example of the satellite garden city—Roemerstadt, Frankfurt am Main—planned by Ernst May who was influenced by Howard. This view shows the town in relation to the Nidda Valley.

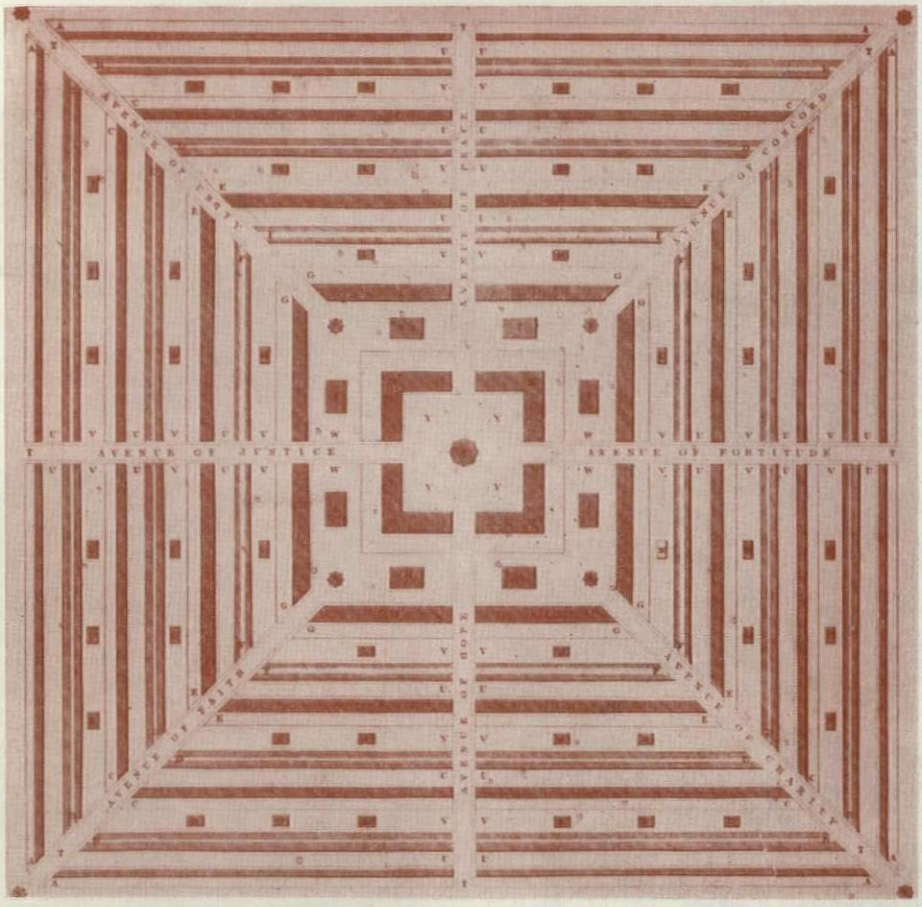


mental thinking that Howard applied to city building, and here, too, we must be ready to proceed from experimental action to broad legislative powers.

Nor is it only in the older portions of the United States that decentralization by garden cities is needed: nowhere is there greater need for understanding and adopting Howard's broad program than in the more recently settled sections of the United States, particularly in California and the Northwest, where the tendency to funnel the population into vast amorphous urban areas like Los Angeles, the Bay Region, Portland, and Seattle will not merely delay the many-sided exploitation of the natural resources of this area, but will undermine a native birth rate already sagging as badly as that of Sweden or Great Britain.

The most important thinking that has been done during the last decade on the elements of planning has, without doubt, been the work of the National Resources Planning Board and its state affiliates: yet nothing shows how defective our preparation for such work has been than the fact that the problem of regional development has been separated from that of city development; so that the report on *Our Cities* deals almost exclusively with cities as self-sustaining entities, and particularly with metropolitan areas, while the reports on resources and industrial opportunities stop short at the outskirts of the city. There is hardly a portion of this work that would not have been more significant and more effective had the investigators and planners fully absorbed the great lessons first expounded in Howard's *Garden Cities of Tomorrow.*

Happily it is not too late to make good this deficiency. Before too many billions of dollars are sunk in cramped, misplaced housing, misconceived road systems funnelling into metropolitan areas, extravagantly extended suburbs, and misplanned slum clearances and rebuildings, it would be well for those who have not read Howard's book, or have not grappled with it, to go carefully over his thesis and to absorb all its implications. This is not merely a book for technicians: above all it is a book for citizens, for the people whose actively expressed needs, desires, and interests should guide the planner and administrator at every turn. Letchworth and Welwyn themselves have still something to teach the American planner, but *Garden Cities of Tomorrow,* the repository of the ideas that begot Letchworth and Welwyn, has still far more to teach. Howard's ideas have laid the foundation for a new cycle in urban civilization: one in which the means of life will be subservient to the purpose of living, and in which the pattern needed for biological survival and economic efficiency will likewise lead to social and personal fulfillment.



J. S. Buckingham's "National Evils and Practical Remedies," published in London in 1849, powerfully interested Howard. The scheme shown by Buckingham for his proposed model town may have influenced the development of Howard's own theory of the garden city.

PLAN OF A MODEL TOWN
FOR AN
ASSOCIATED TEMPERANCE COMMUNITY
OF ABOUT 10,000 INHABITANTS
Designed by J. S. Buckingham

REFERENCES:

A—Outer Square of 1000 Houses & Gardens, 20 feet frontage, 100 feet deep.
B—Second Square—Covered Arcade for Workshops, 100 feet wide.
C—Third Square—560 Houses & Gardens, 28 feet frontage, 130 feet deep.
D—Fourth Square—Covered Arcade for Retail Bazars—100 feet wide.
E—Fifth Square—296 Houses & Gardens, 38 feet frontage, 160 feet deep.
F—Sixth Square—Covered Arcade for Winter Promenade, 100 feet wide.
G—Seventh Square—120 Houses & Gardens, 54 feet frontage, 200 feet deep.
H—Central Square—24 Mansions & Gardens, 80 feet frontage, 250 feet deep.
I—5 Churches or Places of Public Worship, 200 feet by 130.
J—Library below and Gallery of the Fine Arts and Antiquities above.
K—University below and Museum of Natural History above.
Kk—Hall for Public Meetings below, and Concert Room above.
L—12 Dining Halls below, and Drawing Rooms above, 100 feet by 65.
M—12 Public Baths below, and Reading Rooms above, 100 feet by 65.
N—8 Infant Schools, Gymnasium below, School above, 100 feet by 65.
O—4 Boys' Schools from 5 to 10 years of age, same division and size.
P—4 Girls' Schools from 5 to 10 years of age—as above.
R—4 Boys' Schools from 10 to 15 years of age—the same.
S—4 Girls' Schools from 10 to 15 years of age—the same.
T—8 Avenues 100 feet wide in the centre—20 feet Colonnade each side.
U—24 Streets 100 feet wide in the centre—and 20 feet Colonnade.
V—24 Open Grafs Lawns for Dining Halls, Baths, Schools, &c. 150 feet wide.
W—Inner Grafs Lawns for Public Edifices, Churches, &c. 300 feet wide.
X—8 Fountains—100 feet diameter below, and 50 feet jet.
Y—Inner Square, or Forum with Porticos and Public Offices, 700 feet Square.
Z—Central Tower for Electric Light, Clock, and Gallery, 300 feet high.

N.B. All large Manufactories using Steam Engines, would be removed at least half a mile beyond the Town, as well as Abbatoirs or Slaughtering Houses—Cattle Markets—Reserves of Sewerage for Manure—The Public Cemetery—Hospital—Botanic Garden—Cricket Ground &c.—And on the land to be attached to the Town for Agricultural and horticultural operations, Sites would be reserved for the building of Suburban Villas, by such residents as might desire it.

DIESEL ENGINE PLANT

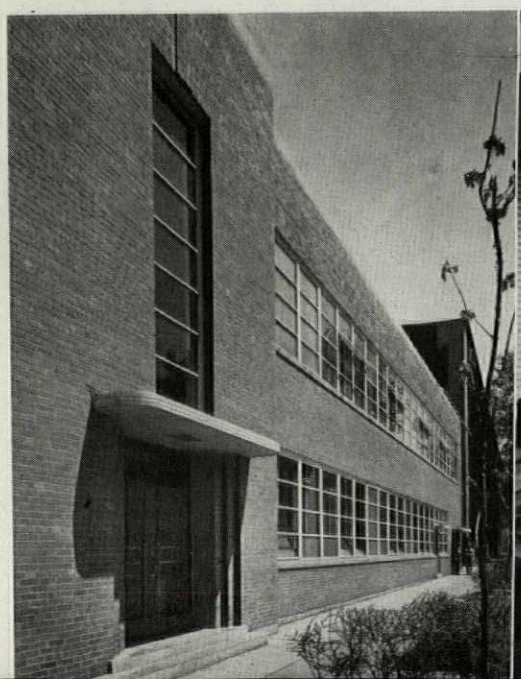
ALBERT KAHN ASSOCIATED ARCHITECTS & ENGINEERS, INC.

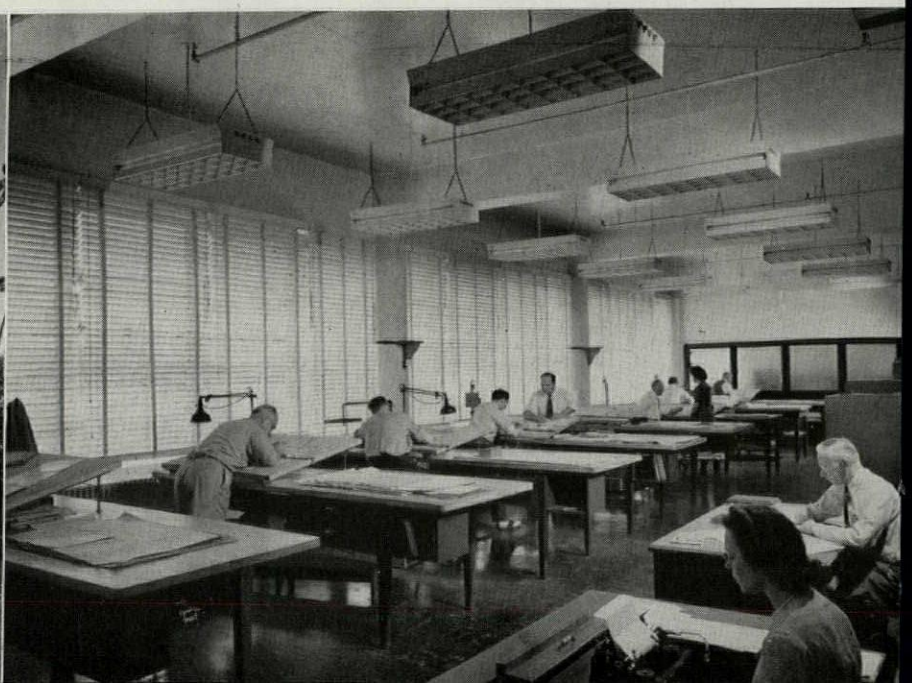
HEAVY
INDUSTRY

Photographs by Henry; Hedrich-Blessing

SHOP *is of structural steel with poured and sprayed concrete walls (40 feet to the underside of roof trusses), broken by continuous bands of sash. Roof monitors occur in alternate units—three high bays, one low bay—over the full area.*

OFFICE BUILDING *(right of photo above and the two photos below) is of reinforced concrete with brick exterior facing. Interior walls are painted, and floors are asphalt tile on concrete; artificial lighting is by fluorescent units.*





ALBERT KAHN ASSOCIATED ARCHITECTS AND ENGINEERS, INC.

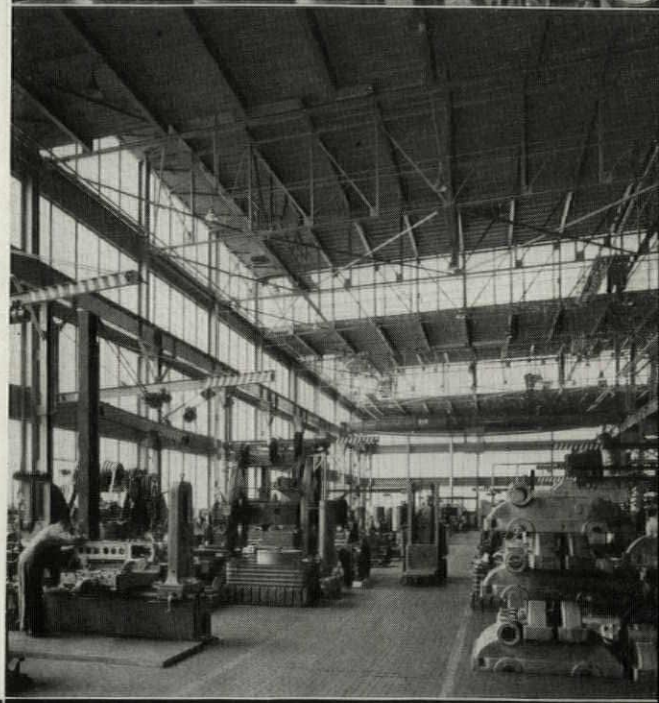
This great diesel engine plant, operated for the U. S. Navy by the American Locomotive Co., is a pre-assembly feeder plant for the final assembly unit, an older factory located on the same property. Power lines are brought to the new plant from facilities added to the power plant of the existing factory. In addition, there are a new electric sub-station and generator and a separate air compressor.

The architectural commission for the structure was awarded soon after Pearl Harbor, and since construction was so far advanced when the ban came on use of certain critical materials, this permanent project was permitted to proceed as planned.

Working drawings had to go ahead before the size, type, and layout of machinery could be determined. To meet this contingency, the architects developed a complete under-floor grid of electric ducts, water, gas, and all other service mains and facilities. Machinery installation plans could then proceed with utmost flexibility and tap required services at practically any point.

Over-all dimensions of the project are 202 by 677 feet, with the greater part of the area allotted to the machine shop. The remainder consists of the two-story office building located at one end. In addition to plant protection and maintenance offices, the latter also includes the main employee entrance, connected to the factory by a wide corridor; personnel offices and a first-aid station on the first floor, and accounting and engineering offices on the second.

EDITORIAL QUESTION MARK: *Types of functions change where the shop and office building meet. But when the two are in fact joined and work in conjunction, why such a total change in architectural character? The shop seems proud to be exactly what it is, with materials well chosen and simply used, and the whole executed with conviction. The office unit, by contrast, seems rather pretentious, with an obscure, modish face that might just as well be that of a branch post office or a school building as the home of this particular war plant's routine business. Some change of character is to be expected, but the sudden shift from the inspired to the routine is disappointing.*



SHOP INTERIOR *of the diesel engine plant is a single floor bordered by a 40-foot-wide mezzanine (at right of photo), used for light machining and storage. Twenty feet above the floor of the shop and extending the full length of the building, the mezzanine is connected with the lower level by elevator. On the main floor are a special heat treat department and lathes, grinders, and other elements of a complete machine shop. The flooring is wood block. Mechanical units in the roof structure provide forced winter and summer ventilation. A crane-way for a 25-ton lift is designed as part of the shop structure. The abundant daylight is supplemented by high-bay incandescent units.*

ALBERT KAHN ASSOCIATED ARCHITECTS AND ENGINEERS, INC.

Industrial vs. Other Architecture

Contemplation of another fine modern industrial plant developed by the Kahn organization leads one to ask two questions: Why has industrial architecture in this country progressed so much farther and faster than other categories? Why is good contemporary design so completely accepted for industrial buildings when some of the same people who praise their clean straightforward functional appearance object violently to the results of applying the same design principles to banks or churches or public libraries, and particularly to homes? (In other words, why do the usually hard heads of business men sometimes become temporarily soft?)

Offhand, an unthinking observer might give credit to the war for the extent and speed of progress. The demand for industrial buildings has been so great that it has had every encouragement to develop while other types have been stalled. But that, by itself, hardly explains the spread that has long existed between the fairly consistent excellence of factory design and the galloping-off-in-all-directions confusion that has characterized other architectural types. As a matter of fact, good modern factories were being built and accepted long before the war in the very same towns where "Gothic" churches, "Italian Renaissance" banks, and "Tudor" houses were not considered anomalous.

Can it be that because an industrial plant is more closely associated with tools—and can logically be considered itself a tool—men more readily accept the fact that it should take the form dictated by its purpose and the materials out of which it is made?

One way to attempt an answer to our two questions is to consider some of the chief barriers which progressive architects have found when they have undertaken, let us say, a contemporary museum, a church, a First National Bank, or a residence in the country.

1. Uncomfortable and unsure clients, who prefer to ape the "correct" Joneses rather than to build what they themselves want and need. Parenthetically, the Joneses are as a rule simply other unsure people who are aping the Smiths, who in turn ape the Rockerbilts.

As against this pretentiousness in the residential parts of town we observe that a respectable percentage of factory owners and their architects have no interest in building a plant "just like that cute little one up the street." Both are solely interested in providing a plant that will serve its specialized function as simply and as efficiently as possible. Improvement over earlier plants is wanted—not similarity to them.

2. The money lender who resists new departures in design, however logical, because he thinks if he encourages them he will endanger the value of his investments in obsolescent types.

In the case of industry, there may very likely be no mortgagee—and if there is, he will want the business he puts his money in to succeed and will not handicap it by insisting on holding back the clock.

3. The speculative client who wants to build the flashy sure-fire sales type of thing—something that will let him sell quick, take a profit, and clear out.

Factories are rarely built as a speculation. Their owners are making a long-term investment and want a truly well built job that is preferably ahead of its time.

4. Sentimentalists who rise to protest that their town was built in the eighteenth century, has always lived in the eighteenth century, intends to continue to do so, and wants no traffic with twentieth century ideas—or architecture.

These gentry, should they try to persuade Mr. Industrialist to build his factory after the manner of the Brothers Adam—because that is what they like—would hardly get to first base.

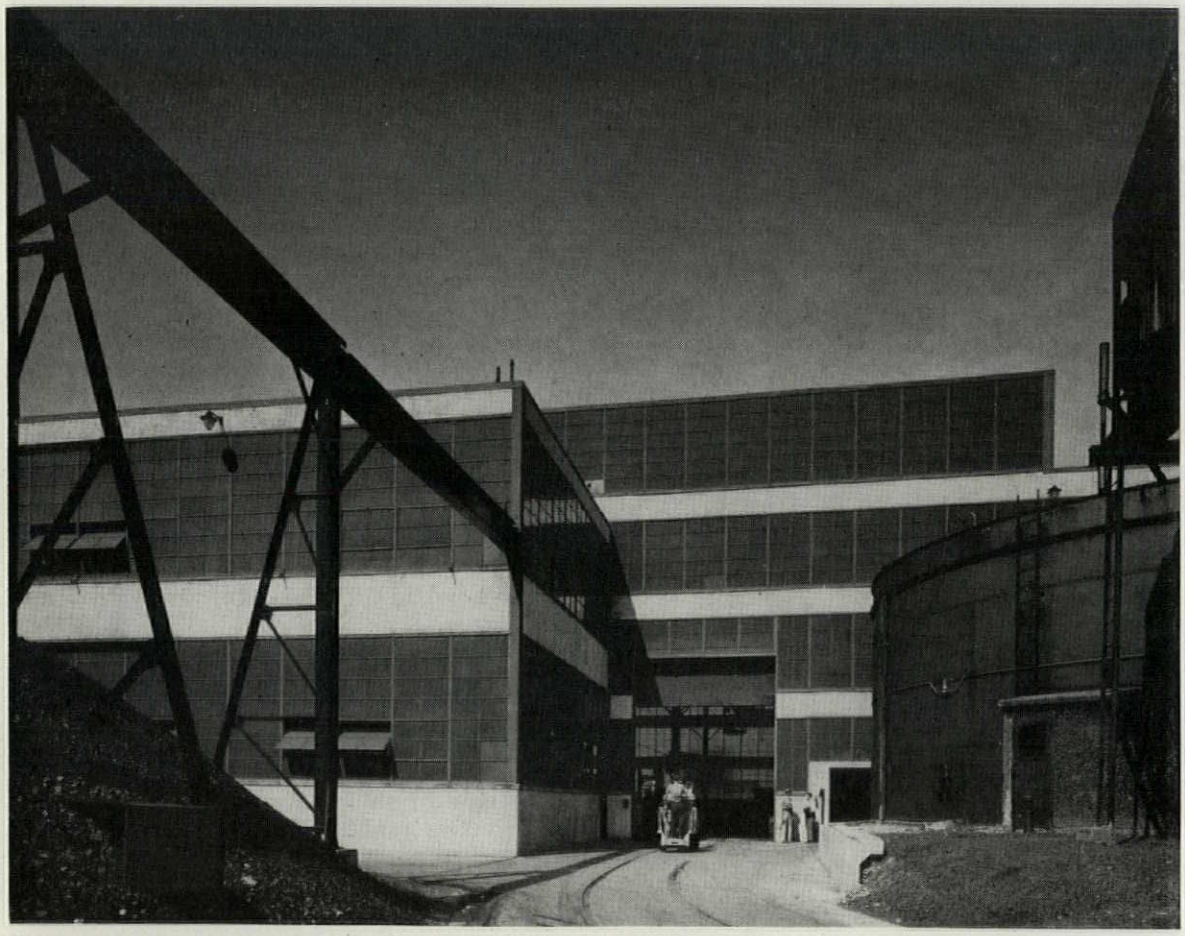
5. Boards of Directors that insist on erecting "impressive" monuments in their own ruggedly-individual honor, rather than buildings that will serve people better than they have previously been served. These are the ones that order up replicas of whatever hallowed sticks and stones their schooling may have brought to their attention—the Caracalla steam baths, the Williamsburg palace, the Petit Trianon, Mount Vernon, Grant's Tomb—whatever revered square hole they feel they could squeeze their round peggishness into with dignity and acclaim.

Like Boards of Directors, the successful industrialist may hanker to build himself a monument —and sometimes does—but happily it is now pretty well accepted that the most impressive monument he can erect to himself is "the best damned factory in the world."

6. Building codes, written for other days and moldy with old excrement, yet which survive with full legal rights today—codes that say just what materials shall be used and how they shall be assembled rather than specifying performance and leaving it to the intelligent designer to achieve the end desired in the most effective and economical way.

Industrial buildings in most places now conform to labor codes rather than to local building codes. These set performance standards which dictate such things as optimum light levels and the number and distribution of toilets for the worker—tell what the building must do rather than limiting how it must be detailed or of what it must be built. Thus the architects and engineers of factory buildings are enabled to take full advantage of technological advances and to make important innovations that would not be acceptable to the average city Building Department.

Yes, the Industrial Building is a fortunate category of architecture—a happy instance of where circumstances surrounding the designer work together for good.



A railway spur line enters the diesel engine plant at one end, adjacent to trucking facilities. Finished preassemblies are moved by electric floor trucks to the adjoining, older factory for final assembly.

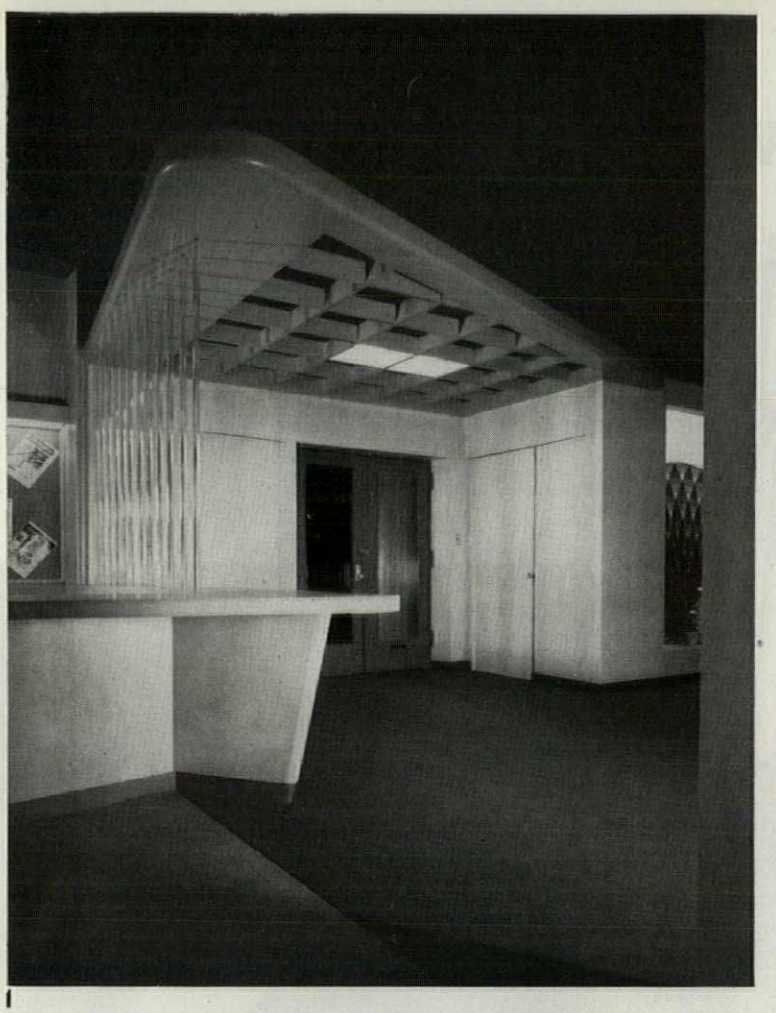
ALBERT KAHN ASSOCIATED ARCHITECTS AND ENGINEERS, INC.

DISPLAY AND SALES ROOMS

NEW YORK CITY

designed by
S. S. Silver & Co., Inc.

WHOLESALE



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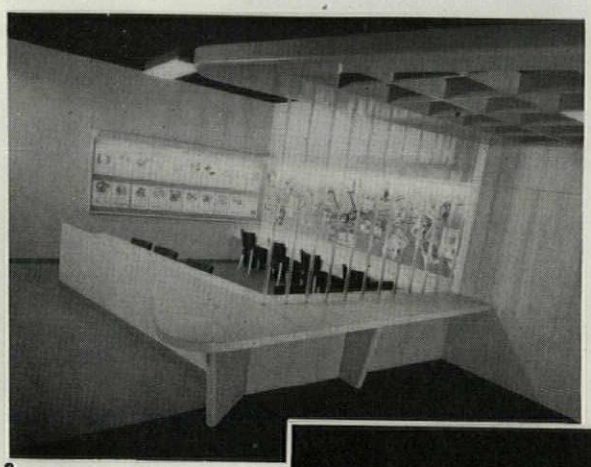

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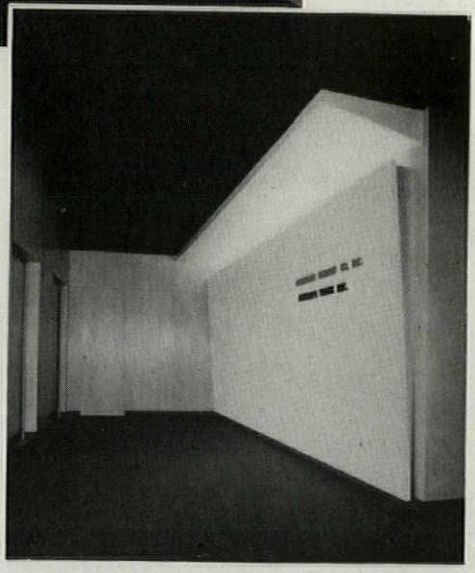

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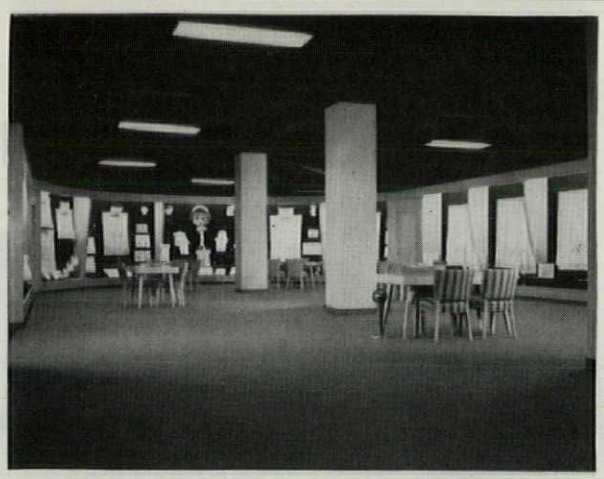
Numbered arrows on the floor plan indicate the camera position for photographs on these two pages, which are numbered to correspond



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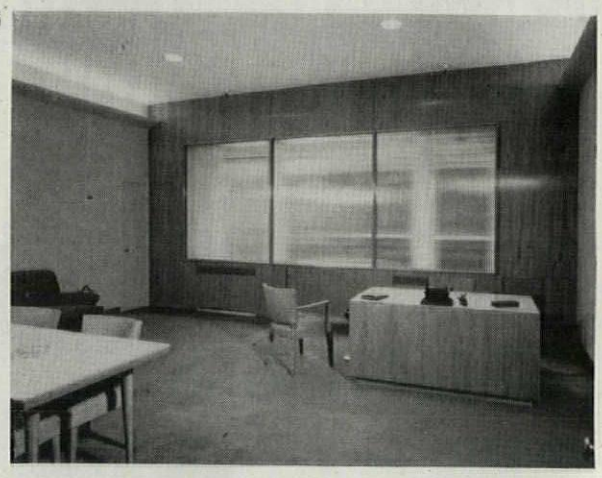

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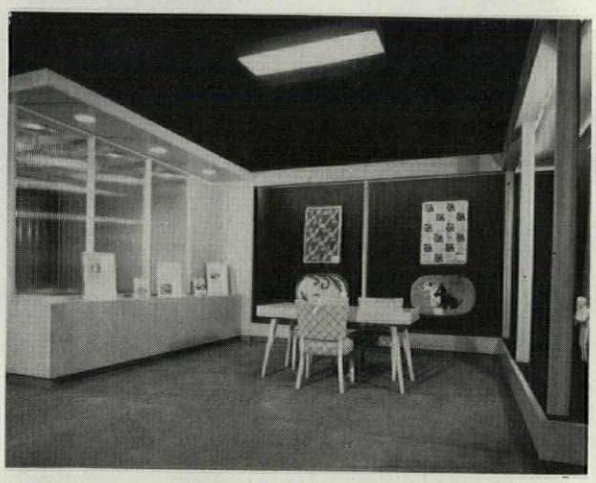

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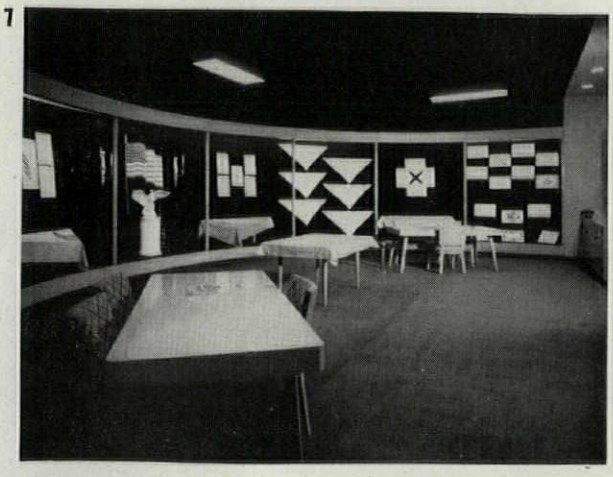
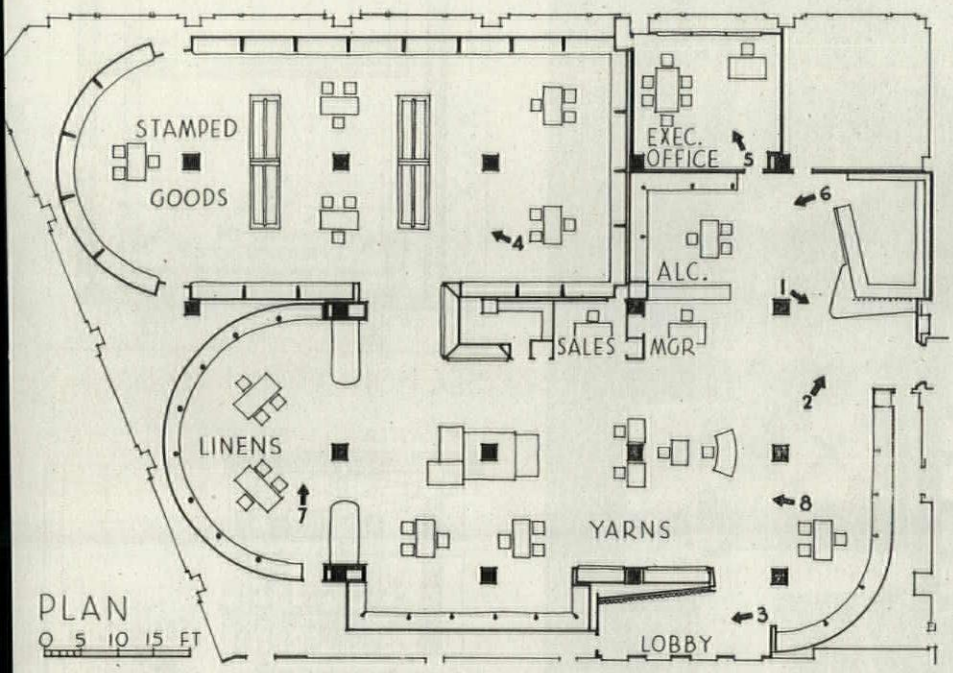


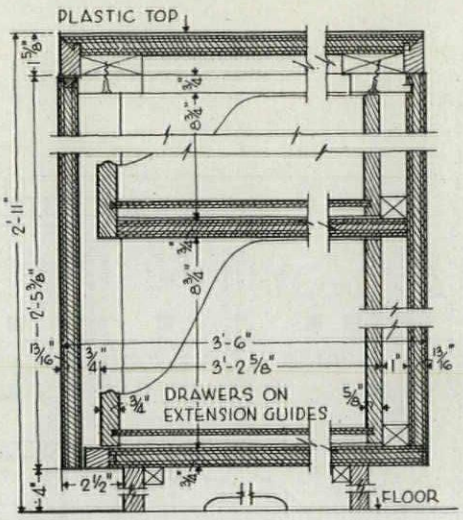
7

WHOLESALE DISPLAY AND SALES ROOMS

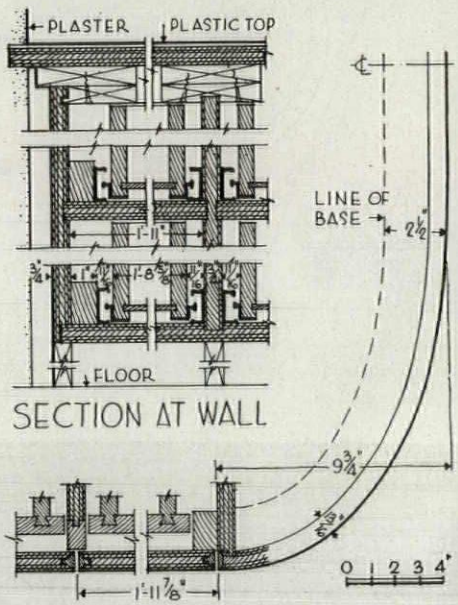
A series of display rooms built within the framework of an existing city building such as the group shown on these pages does not fall into any clear architectural category. Is it stage-set design? Is it furniture? Is it interior decoration? It is all of these, but in combination it is also architecture in its broadest sense—something designed and built to create a particular environment to serve a special purpose. It may not be "pure" architecture, in that it is independent of the usual problems of integration with building structure, mechanical systems, etc.; but it is, nonetheless, design to serve a human function, and it can be judged on the basis of how well it shelters the business at hand and simplifies the tasks of those who conduct the business.



Photographs by Molitor



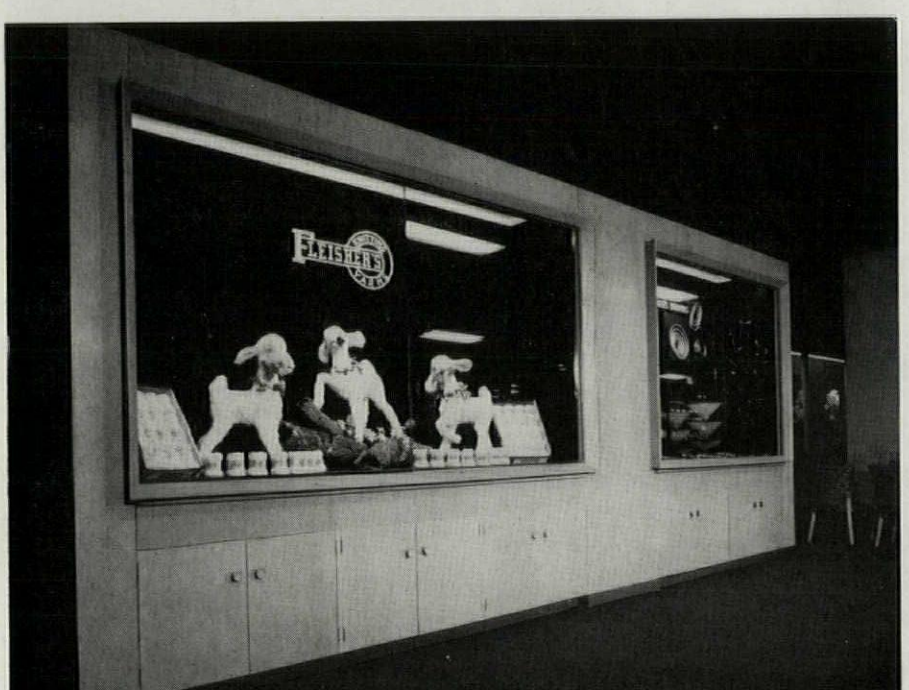
SECTION - FRONT TO BACK

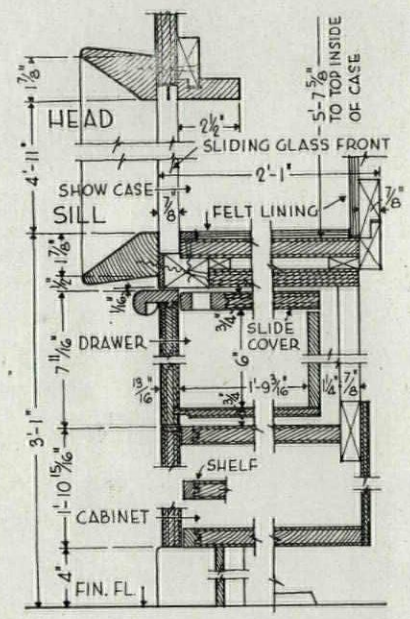


SECTION AT WALL

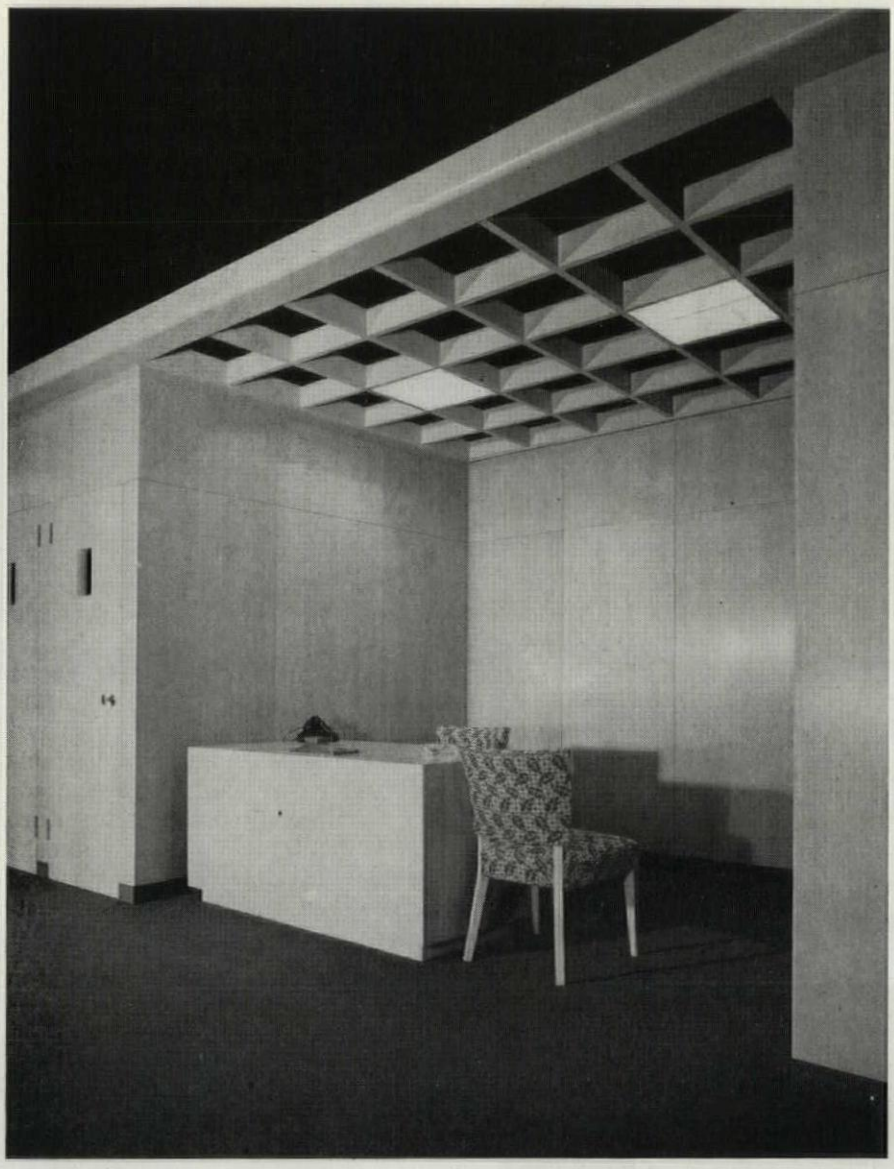
Above: partition cabinet between Yarn and Linen Departments; detail at right

Below: yarn display units. Woodwork, as elsewhere, is bleached oak

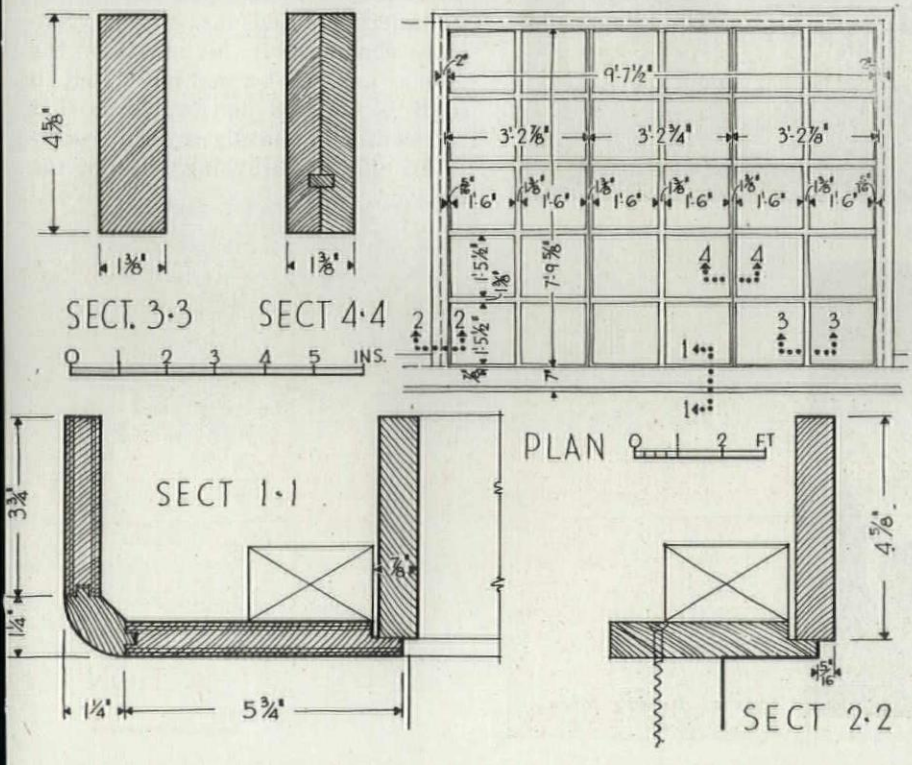




VERTICAL SECTION



One of the oak-paneled sales-management offices. Ceiling detail below



The prime purposes of wholesale display and sales rooms are very similar to those of a retail store (minus the shop-front aspect); to lure customers and promote sale of merchandise. But the wholesale process is somewhat more acute than that of retailing. Each customer is an expert in his field and, since his own livelihood is affected by the purchases he makes, he must be an unusually wary buyer. To satisfy the requirements of this problem, the designer of wholesale display rooms must achieve a dual goal: he must use display techniques for effective showing of the merchandise, but (if the business is to prosper) he must avoid tricks or devices that would present the objects in a false light.

The designers of the rooms detailed here judiciously subordinated the elements of display in favor of the things displayed. Bleached-oak plywood cabinetry, the furniture, and partitioning are all very simply detailed, and concealed illumination at the heads of display units throws an even, clear light over panels and casework beneath. Storage cabinets for additional merchandise are organized adjacent to all displays.

Unity to the whole is furthered by repetition of a common-denominator display unit (for the greater part of the 450 lineal feet of display wall), an unbroken platform line at the bottom, and a standard cornice height.

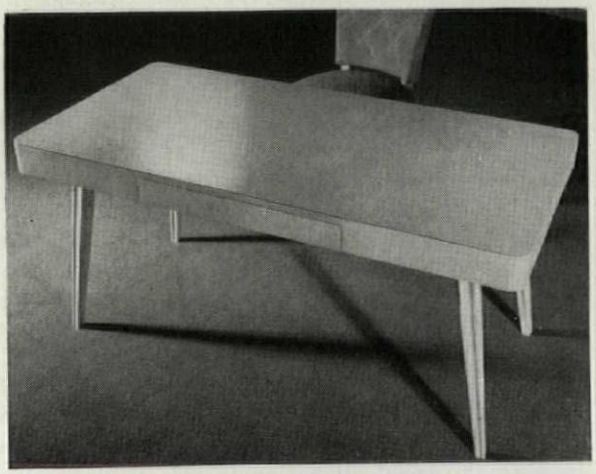
Most of the 9,500 square feet of area is used for two major display areas, interrelated in a spacious, open-plan scheme. One end of the larger of the area is set off to serve a distinct but related department (Linen, separated from Yarn) by means of a broad arched opening with projecting cabinets at either side.

Traffic is controlled by decorative screens and exhibit units which direct visitors to the receptionist and so on through the exhibits, which flow from one to the next with only a directional change or the introduction of a new form to mark divisions between categories of merchandise. With this flexible organization, contraction or expansion of departments is simply a matter of rearrangement of exhibits—using fewer or more of the standard display units for a single line of merchandise. Structural alteration is not involved.

Executive desk. All furniture was specially designed

Conference table in executive office, with typical pull-up chairs

Sales room business desk and customer's chair



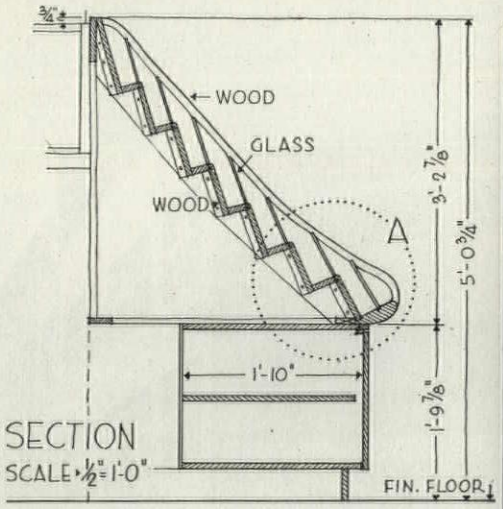
Typical display table

WHOLESALE DISPLAY AND SALES ROOMS

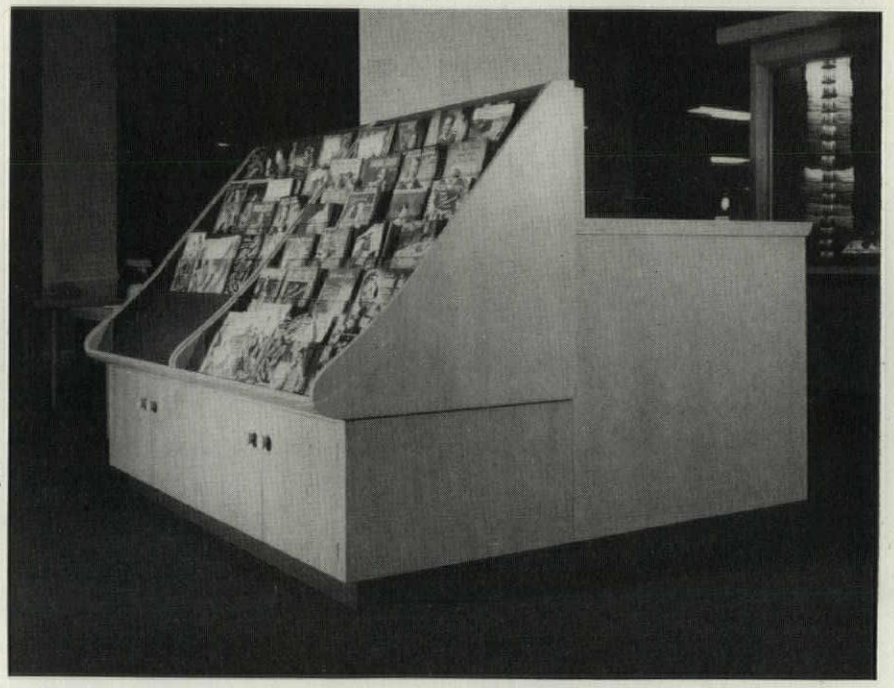
Supplementing the wall displays, there are also a number of portable units, which are used wherever needs dictate. Specially designed furniture is, like the fixtures, of bleached oak; counter and table tops are surfaced with either linoleum or linen-patterned hard-surfaced plastic.

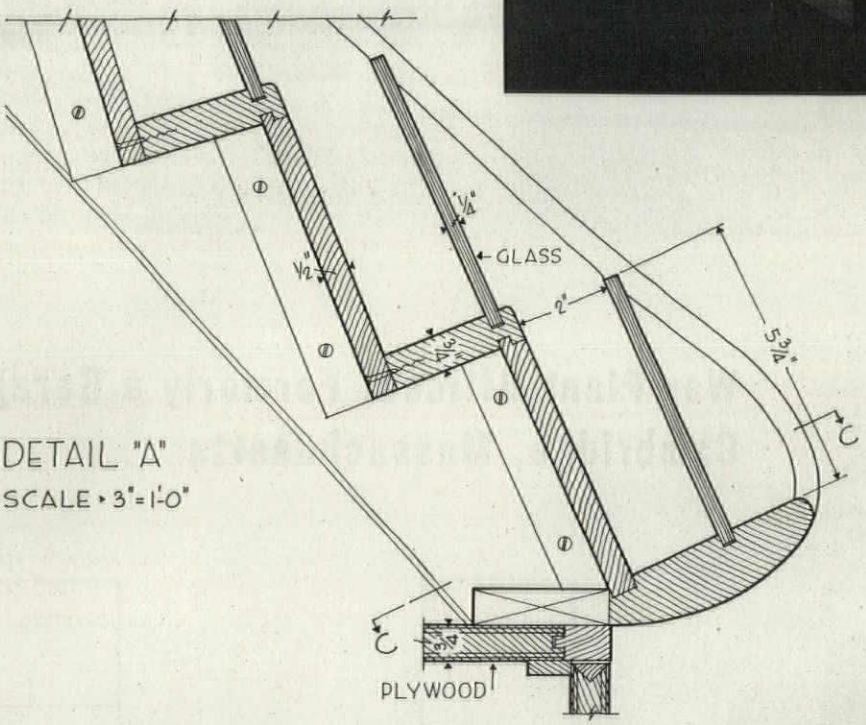
Salesmen are strategically located in a space adjacent to one of the two main entrances, where they can see all visitors as they enter. The sales manager and his force are in the central unit of the plan, which affords this same advantage.

Since priorities did not allow installation of a new dropped ceiling, the designers painted the existing ceiling (considerably higher than the display cabinets) a mat black, and all light is directed downward, so that the ceiling is hardly a factor—certainly not a disturbing one—in the finished design.

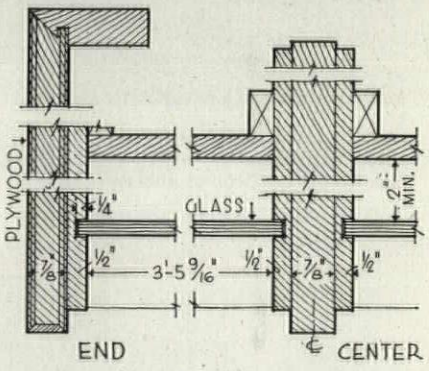


SECTION
SCALE ▸ 1/2" = 1'-0"

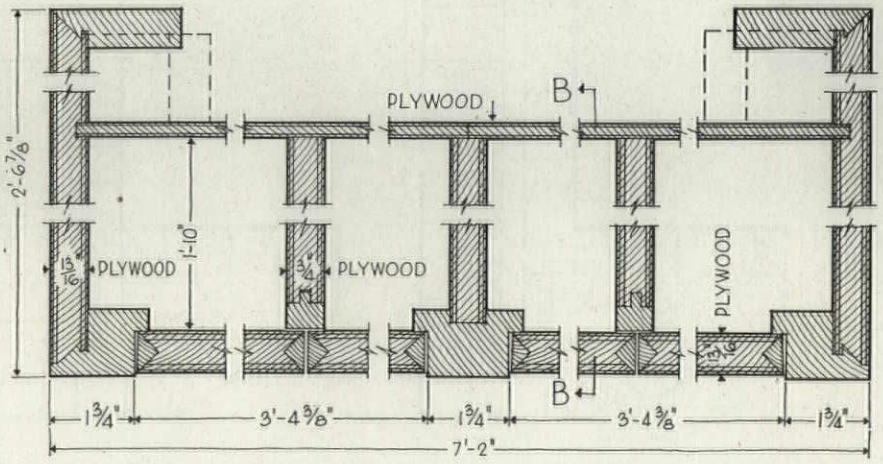




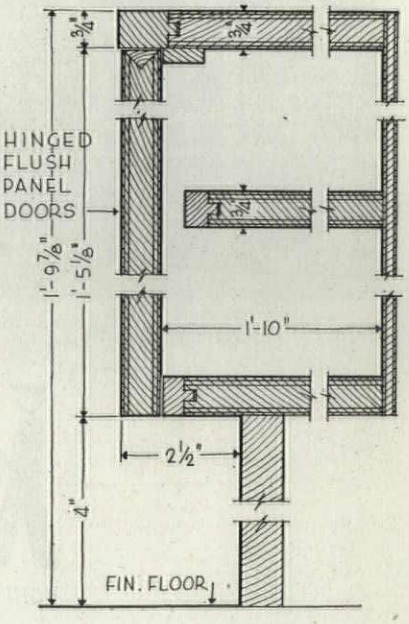
DETAIL "A"
SCALE ▸ 3" = 1'-0"



SECTION "C-C"



DETAIL PLAN THRU CABINET SCALE ▸ 3" = 1'-0"



SECTION "B-B"

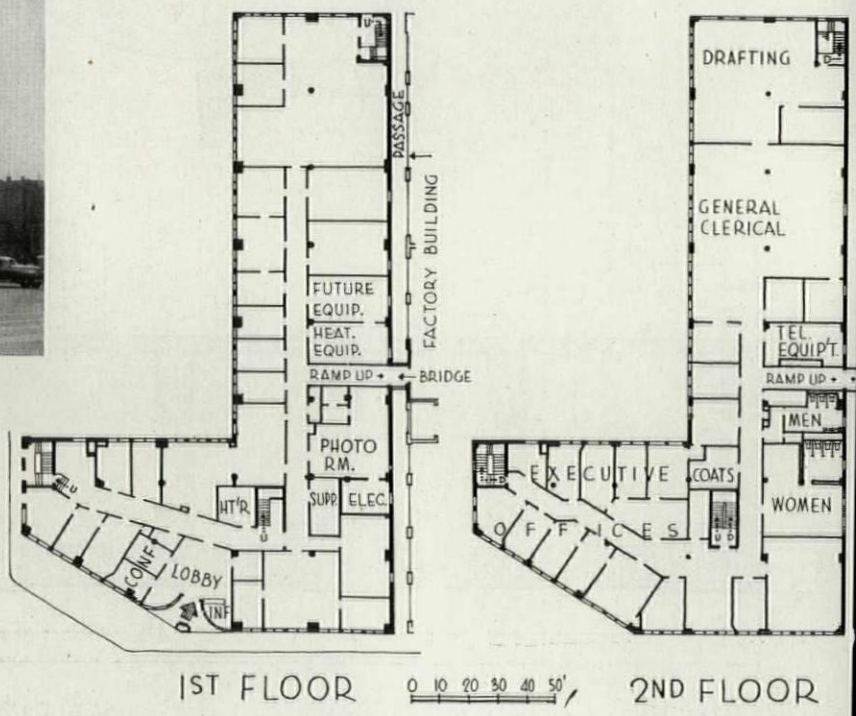
After: new brick surfacing, redesign of window openings, and coordination

Photographs by Haskell

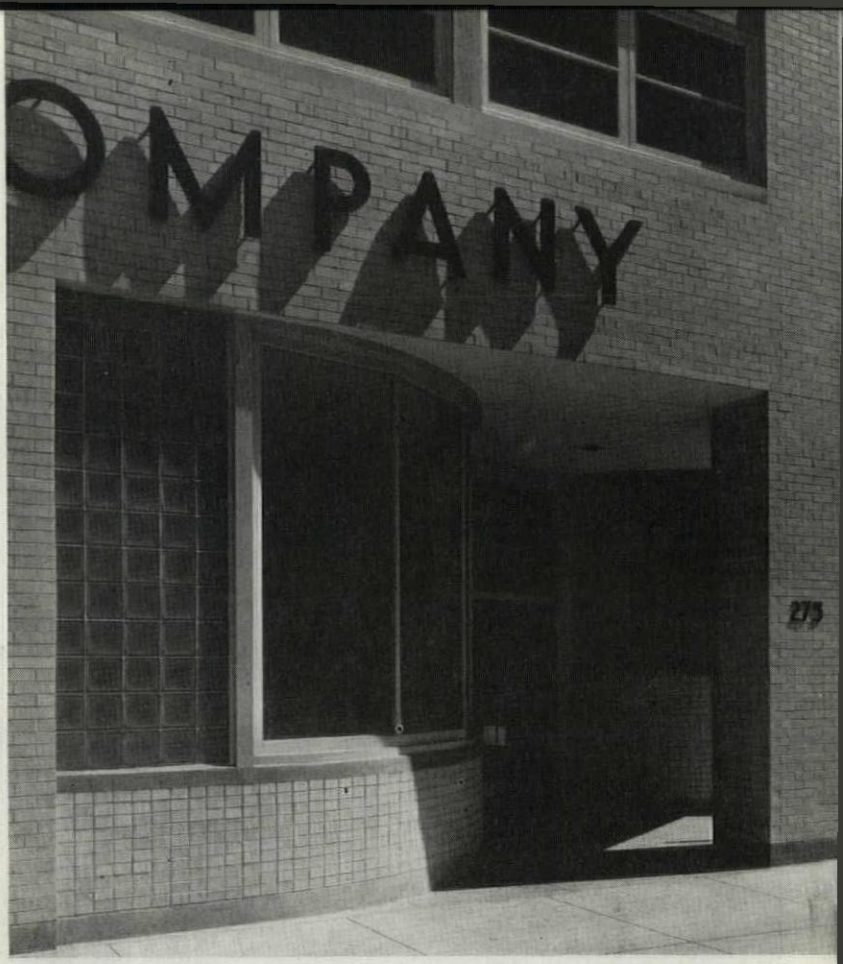
War Plant Offices, Formerly a Garage
Cambridge, Massachusetts

Before: old garage building

LIGHT INDUSTRY



The awkward corner is used as the new entrance; interior view below. All ceilings have acoustical surfaces

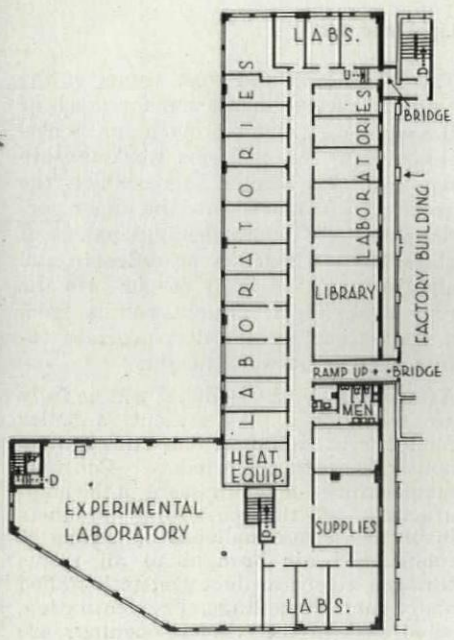


For wartime security reasons, little can be said about either the exact use of the various rooms of this remodeled structure or of the nature of the manufacturing process. Therefore, the building is of interest here purely as an example of rejuvenation for industrial use of a tired old garage building.

Prior to the remodeling, the company's business offices and laboratories were scattered through the adjoining factory building. Actually the old garage was acquired to supply increased production space. On analysis, however, since floor levels were different than those in the factory, it was decided to use the newly acquired property for the offices and laboratories, releasing the space in the factory formerly occupied by these to provide the additional manufacturing space. The different floor levels of the factory and office building are connected by nonslip-surfaced ramps.

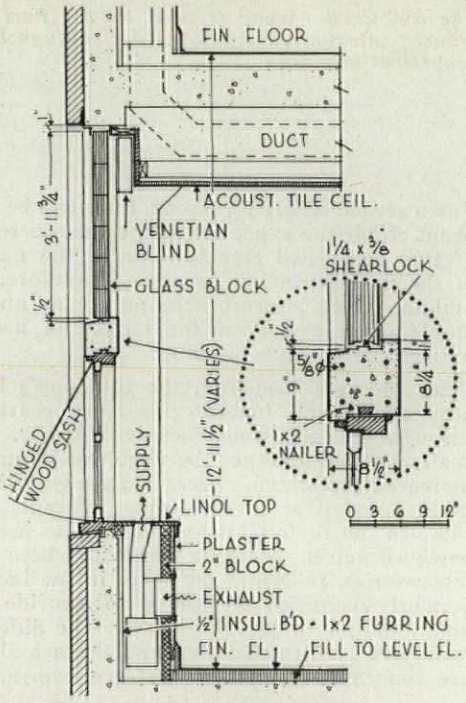
Location of the main entrance at the corner where an awkward angle occurs permitted more efficient rectangular rooms in adjoining work areas. Departments whose business requires most frequent contact with the public are arranged near this entrance lobby.

Donald Des Granges, Architect



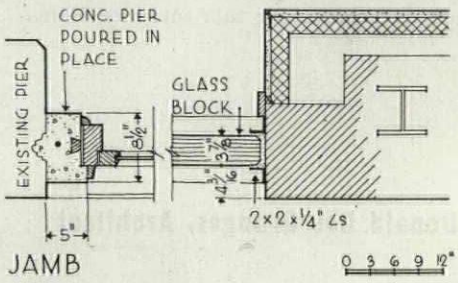
3RD FLOOR

Panels of glass block control direct sunlight on southern and western walls; in the photograph below, a portion of the factory proper appears at far right



TYPICAL VERTICAL SECTION

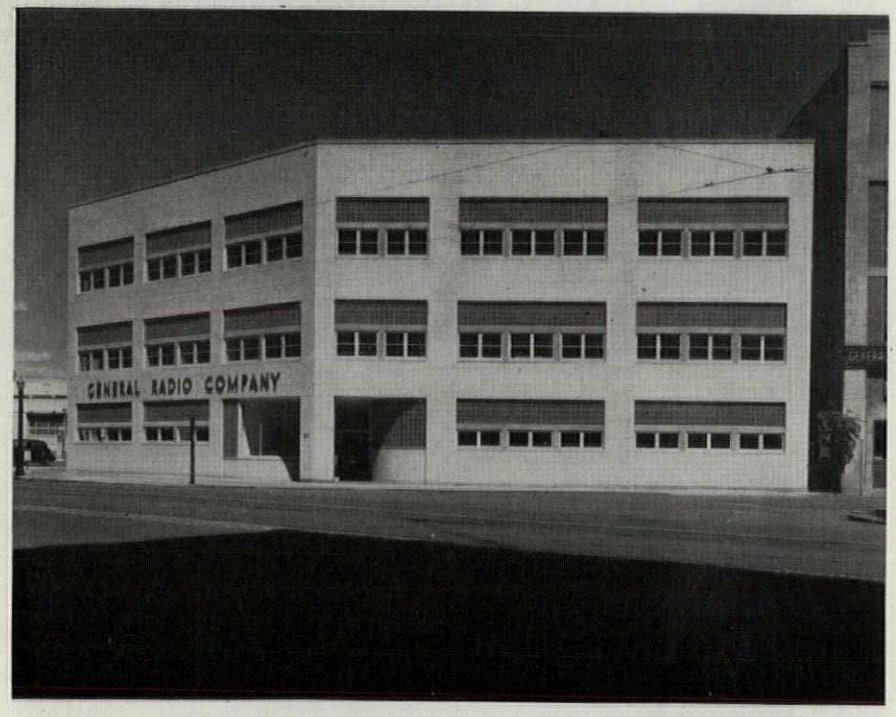
0 1 2 3 4 5'



JAMB

DETAILS OF WINDOWS

DONALD DES GRANGES, ARCHITECT



Light and Air

The long south and west fronts of the building receive direct sun for much of the work day; but too much sun is detrimental to the precision workmanship required. To resolve this conflict, the architect introduced into the upper portions of the window openings panels of glass block which act as diffusers and also channel the light deeper into the rooms. Artificial illumination is from a fluorescent system that provides 50-foot candles at work height.

After the war, the building will be fully air conditioned. At present, a boiler room serves radiation that runs continuously beneath the windows. Constant temperature—a requirement in the manufacture of the particular products involved—is accomplished by means of conditioned air brought to all rooms through a central duct system installed above corridor ceilings. For ventilation, wood sash in the window openings are made to swing out. These will be fixed at a later date, when the cooling apparatus is installed.