

ARCHITECTURAL RECORD



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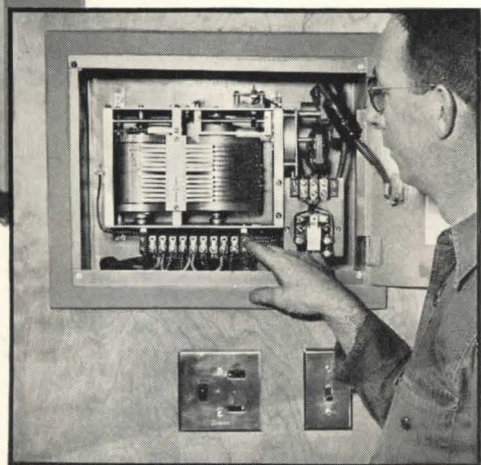
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COVER:
Lafayette Charity Hospital, T. B. Unit,
Lafayette, La. Richard Koch, Architect

THE RECORD REPORTS	9
News from Washington. By Ernest Mickel	15
News from Canada. By John Caulfield Smith	16
Construction Cost Indexes	28
REQUIRED READING	30
WILTON, CONNECTICUT, BUILDS A SCHOOL	101
Wilton Junior High School. O'Connor & Kilham, Architects	
ALICE CROCKER LLOYD RESIDENCE HALL	112
Girls' Dormitory, University of Michigan, Ann Arbor. Clair W. Ditchy, Architect	
GOOD ARCHITECTURE PAYS DIVIDENDS	118
Bel Air Garden Apartments, West Los Angeles, Calif. A. Quincy Jones, Jr., Architect	
A COMPARATIVE GLANCE AT THREE RECENT BANKS	123
PEOPLE'S SAVINGS BANK Providence, R. I. Cram & Ferguson, Architects-Engineers	
CENTRAL BRANCH, CONTINENTAL BANK & TRUST CO. Salt Lake City, Utah. Snedaker & Macdonald, Architects	
BROADWAY SAVINGS BANK New York, N. Y. Harold R. Sleeper, Architect. Ackerman & Ramsey, Associates	
HOUSE IN THE PACIFIC NORTHWEST	130
Residence of Mr. and Mrs. Trevor Roberts, Blue Ridge, Wash. Young & Richardson, Architects & Engineers	
BUILDING TYPES STUDY NO. 173	
TUBERCULOSIS HOSPITALS	
THE NEED FOR HOSPITAL FACILITIES	135
By Robert J. Anderson, M.D., Chief, Division of Chronic Disease and Tuberculosis, U. S. Public Health Service, and James E. Perkins, M.D., Managing Director, National Tuberculosis Assn.	
CONSTRUCTION AND PLANNING OF TUBERCULOSIS HOSPITALS	136
By John W. Cronin, M.D., Chief, Division of Hospital Facilities, U. S. Public Health Service	
NOTES ON TUBERCULOSIS HOSPITAL PLANNING	137
By Peter N. Jensen, Hospital Architect, U. S. Public Health Service	
SAN MATEO COUNTY TUBERCULOSIS HOSPITAL	138
Redwood City, Calif. Stone and Mulloy, Architects. S. P. Marraccini, Associate Architect	
TUBERCULOSIS INFIRMARY FOR NEGROES	142
Mississippi State Sanatorium, Sanatorium, Miss. R. W. Naef, Architect-Engineer. Biggs, Weir & Chandler, Architects and Consulting Engineers	
SOUTHEAST FLORIDA TUBERCULOSIS SANATORIUM	146
Lantana, Florida. Reynolds, Smith and Hills, Architects and Engineers. Charles F. Kuhn, Associate Architect	
PUUMALE TUBERCULOSIS HOSPITAL	150
Hilo, Hawaii. Merrill, Simms & Roehrig, Architects	
EAST TENNESSEE TUBERCULOSIS HOSPITAL	154
Knoxville, Tenn. Baumann and Baumann, Architects. Will W. Griffin, Associate	
TUBERCULOSIS UNIT FOR GENERAL HOSPITAL	158
Lafayette Charity Hospital T. B. Unit, Lafayette, La. Richard Koch, Architect	
ARCHITECTURAL ENGINEERING	
TECHNICAL NEWS AND RESEARCH	
POTENTIALITIES OF GLASS IN BUILDING	161
By Albert G. H. Dietz	
STUDY FOR AN IDEAL PORT FACILITY	167
PRODUCTS for Better Building	170
LITERATURE FOR THE OFFICE	172
TIME-SAVER STANDARDS	175
Installation of Gas Appliances — 1, 2, 3: Venting	



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R. B. O'Connor and W. H. Kilham, Jr.
—Architects

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THE RECORD REPORTS

BUILDING OUTLOOK BRIGHTENS AS DEFENSE PLANS ARE SET

Construction "Squeeze" Seen Likely To Be Briefer and Less Severe than Many Feared

THE "SQUEEZE" ON CONSTRUCTION which has been expected to develop later this year seems likely to be less severe and of shorter duration than most people thought it would be.

Thomas S. Holden, president of the F. W. Dodge Corporation, last month thought indications were that such a squeeze would continue into 1952. Safest assumption on 1952 volume, he said, is for a decrease from 1951 volume, although such a decline is by no means certain.

Mr. Holden expected material supply — of metal products in particular — to be the determining factor on 1952 building volume: "Defense production will be eating metal fast in 1952. The question is whether it will consume metals at a faster rate than supplies increase."

In a published analysis, "Construction in a Defense Economy," Mr. Holden pointed out that the fears engendered by the shock of the sudden Korean crisis and early confusion about the direction the defense program would take have been in part dissipated by events.

"From the start of the Korean crisis

in June 1950 until quite recently," he wrote, "there has been a general tendency to expect a repetition of all the shortages and all the control patterns that were experienced in World War II. Many construction industry people have even expected a squeeze like the one that occurred in 1943 and 1944, following the 1942 peak of war construction. Fortunately, a more realistic view is beginning to prevail.

"As of March 1951 there has been no squeeze. Construction activity, both in terms of contract-letting and of work being executed in the field, has been continuing at a record rate. The total of building and engineering contracts awarded in the 37 eastern states during the first two months of 1951 amounted to \$2,183,775,000 compared with \$1,510,385,000 in the first two months of last year. This 44 per cent increase produced the largest contract total yet recorded for any similar period. Non-residential building, residential building and heavy engineering contracts all participated in the increase."

Mr. Holden sees the next four years as

"... defense requirements will be largely met by increased production of basic materials."

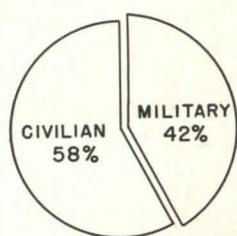
"... expansion of the American economy will require construction in great volume and in wide variety of structural types."

"... in 1953 there will be more steel and more aluminum available for civilian use than before Korea."

a period of transition from the sub-normal defense program of the first post-war years to what military authorities now consider events have made a normal defense program: \$35 billions a year to support a military establishment of 3,500,000 men.

The intensified effort which is obvi-
(Continued on page 284)

FOUR PATTERNS FOR A DEFENSE ECONOMY



1944

ALL OUT WAR

Total military establishment:
12,000,000 men in uniform

Gross National Product: \$298
billions (at 1950 prices)

Military expenditures: 42% of
Gross National Product



1950

SUBNORMAL DEFENSE

Total military establishment:
1,400,000 men in uniform

Gross National Product: \$280 bil-
lions (at 1950 prices)

Military expenditures: 5% of Gross
National Product



1952 ?

TRANSITION TO NORMAL

Total military establishment:
3,500,000 men in uniform (by
middle or end of '51)

Gross National Product: \$316 bil-
lions (at 1950 prices; advance
estimate)

Military expenditures: 18% of
Gross National Product



1955 ?

POSTWAR NORMAL

Total military establishment:
3,500,000 men in uniform

Gross National Product: \$350 bil-
lions (at 1950 prices; advance
estimate)

Military expenditures: 10% of
Gross National Product

APRIL 1951

9

A.A.S.A. and the American Institute of Architects, was an encore by popular demand of the school architectural exhibit which was a new feature of last year's convention. More than 100 architects were among visitors to the display and the report was that the exhibit was again this year "the hit of the show."

Emphasis on selecting buildings for the exhibit was on structures for rural areas and low cost construction.

Fourteen merit awards were made by the screening jury "to call attention to outstanding contributions to school building architecture." They were as follows:

Frederick P. Weidersum, Architect — Island Trees Elementary School, Dist. #26, Island Trees, N. Y.; Alfonso Alvarez Jr., Architect — Caldwell Township Elementary School, Upper Montclair, N. J.; Harold M. Klaisz, Architect — Harrison Township Elementary School, Mullica Hills, N. J.; Reisner

Fisher, Williams and Nes, Architects — Bel Air Junior-Senior High School, Bel Air, Md.; Swanson and Associates, Architects — Elementary School, Birmingham, Mich.; Outcalt, Guenther and Associates, Architects — Ohio State School for Blind, Sharon Township, Franklin County, Ohio; Warren S. Holmes, Architect — White Lake Elementary School, White Hall, Mich.; Eberle M. Smith and Associates, Architects — Lake Orion Elementary School, Lake Orion, Mich.

Caudill, Rowlett and Scott, Architects — Elementary School, Blackwell, Okla.; Victor N. Jones, Architect — Helen Bush Residence and Day School, Seattle, Wash.; John Lyon Reid, Archi-



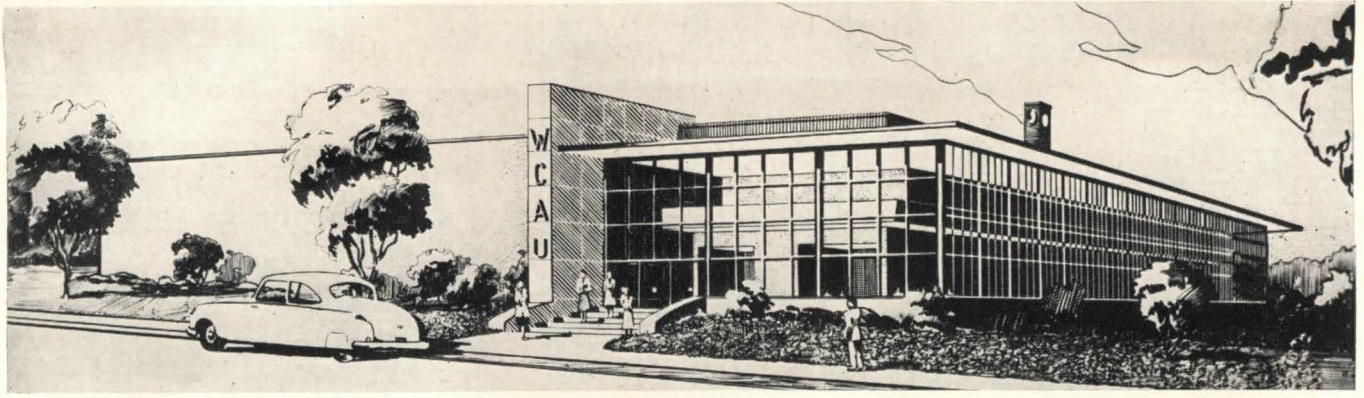
Hedrich-Blessing Studio

CHICAGO SINAI TEMPLE IS DESIGNED FOR MANY USES

RELIGIOUS, EDUCATIONAL and recreational facilities for 6000 people in its area will be provided in the \$2,000,000 Chicago Sinai Temple on a site which faces the South Shore Drive at 54th Street.

The architects and engineers principally responsible for the development are Raphael N. Friedman and Ernest A. Grunfeld, representing the associated architects Friedman, Alschuler & Sincere and Grunfeld, Yerkes, Lichtmann & Koenig.

Center of worship will be the windowless auditorium, which will have interior walls devoid of decoration so that all



Offices on upper floors are reached via open cantilevered galleries above 200-ft glass-enclosed ramp from parking area to front lobby

WCAU RADIO AND TELEVISION CENTER IS STARTED; BIGGEST IN POSTWAR SERIES BY AUSTIN COMPANY

THE LARGEST single structure in the series of 18 postwar television studios constructed by the Austin Company, Engineers and Builders, is well under way in Philadelphia, where Station WCAU is erecting a 100,000-sq-ft radio and television center on a 10-acre site outside the city's business district.

George Howe, chairman of the Department of Architecture at Yale University, and Robert Montgomery Brown

will be centralized on the "ground" floor, below the studio level. Grounds will be landscaped to slope to the rear, so that the main floor can be reached at ground level in the front (desirable for easy access of large objects to television studios for demonstrations) and the floor below is situated at ground level in the rear. A special welded truss developed by the Austin Company is being used in studio construction to

Shepley, Bulfinch and Abbott of Boston, will be started this spring at Harvard University on sites north of Harvard Yard.

The laboratory, 230 ft by 64 ft, will have three open floors, divisible by temporary partitions into 94 individual laboratories or a lesser number of larger team laboratories.

Shafts for facilities are located at 12-ft intervals at each side of the central corridor throughout the building and are directly accessible from the corridors. This



Pictured at the Michigan Building Industry Banquet which ended the three-day convention of the Michigan Society of Architects are: Leo M. Bauer, Society president; Clair W. Ditchy, national A.I.A. secretary; Mayor Albert Cobo of Detroit; Charles Luckman, principal speaker; and President Andrew Morison, Detroit A.I.A.

KAMPER AND LORCH HONORED AT MICHIGAN CONVENTION

TWO MEMBERS of the Michigan Society of Architects were honored with citations at the Michigan Building Industry Banquet, concluding event of the annual convention of the Society March 7-9 at the Hotel Statler in Detroit.

Louis Kamper and Emil Lorch, F.A.I.A., former head of the Depart-

ment of Architecture at the University of Michigan, were cited for their contributions to the profession of architecture.

Main speaker at the banquet was Charles Luckman, A.I.A., who was making his first "public appearance" since his return to the practice of archi-

tecture. He made a strong plea for coordinated action now on workable community planning goals.

The *Monthly Bulletin* of the Michigan Society of Architects celebrated its silver anniversary with a 130-page convention issue containing photographs and biographical sketches of 580 members. Talmage C. Hughes has been editor for all 25 years.

1951 FESTIVAL OF BRITAIN OPENS MAY 3 IN LONDON

THE 1951 FESTIVAL OF BRITAIN, centenary of the Great Exhibition for which the Crystal Palace was erected in London's Hyde Park, will be opened by royal proclamation May 3.

Theme of the Festival, which has been preceded in this country by one of the most intensive advertising and promo-

tion campaigns for any foreign project in memory, is Britain's contribution to civilization — past, present and future. British achievements in the arts, science, technology, architecture, industry, sport and recreation will be on parade throughout the United Kingdom during the Festival, which closes September 30.

Architectural interest centers in London, where the Festival's main exhibition will be held, in buildings constructed on a bombed-out site on the South Bank of the Thames. The great concert hall which has been built for the Festival is intended as "a permanent contribution to London's cultural life," but most of the buildings are temporary structures. The Dome of Discovery, housing a display on exploration and discovery, is the largest dome ever built.

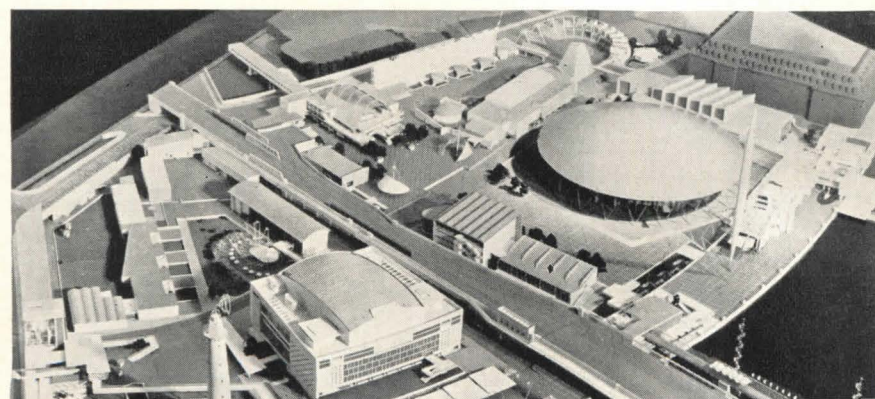
Major architectural exhibition will be the model community of Lansbury, in the Poplar-Stepney area of London's East End. The 30-acre housing development, designed as a self-contained neighborhood unit, is rising on the site of a badly blitzed slum area.

Also at the Lansbury site are pavilions for exhibitions on building research and town planning as well as a "Vertical Feature," a sort of British Periscope which "takes the form of a very tall crane to suggest and mark the site of this new effort in building."

Elsewhere in Britain, special architectural awards are planned for presentation to outstanding contributions in civic or landscape design and the Festival is the occasion of many other

Model of the South Bank exhibition site between Waterloo and Westminster Bridges on the Thames. The large circular building on the right will be Dome of Discovery; the building nearest the Shot Tower on the left will be the Royal Festival Hall

Photo courtesy British Information Services



NEWS FROM WASHINGTON by Ernest Mickel

Modular Coordination Spotlighted as DPA's Conservation Group Begins Task; Creedon Hopes End of Controls "Not Too Distant"; Extension of Credit Curbs Attacked, Some Are Relaxed to Aid Housing in Two Defense Areas; Civil Defense Funds Are Sought

CONSERVATION OF SCARCE MATERIALS through a program of substitution and corner-cutting by such methods as modular coordination is in the making in the Defense Production Administration. It takes the form of a Conservation Coordinating Committee. With a single purpose in mind — savings in materials, manpower and time — this committee is approaching its task under the guidance of Howard Coonley, who did the spade work as consultant on conservation to the National Security Resources Board.

Mr. Coonley is convinced that the building industry affords most fruitful ground and is making it the first area of effort in his over-all task of saving for defense mobilization. He is thoroughly sold on the idea of modular coordination as an important material and time saving method of construction. After conferring with many architects, he concludes that use of the four-inch dimension and multiples can contribute a significant savings factor as the country continues to gird for defense. (On this point, see *Architectural Record*, November 1950, page 101, and May 1950, page 11.)

He takes this view on modular coordination: "It seems to be an amazingly intelligent technique which has never been used to advantage. As far as I can see, it would not in any way interfere with ingenuity and individuality in building design. Many of my architectural friends say they would like to use it if enough products were available in the modular sizes so they could be sure of obtaining them.

"It is my belief that if you immediately take up an intelligent and active campaign for conservation and the use of standardized, simplified materials and products, the construction program will be far greater than it promises to be at the present time."

With this attitude, Mr. Coonley said his first committee session (set for late in March) was taking up conservation in construction.

The Coonley office is at work trying to establish a materials list similar to the material substitute and supply list of World War II. In his investigations to date, the consultant has found only two critical materials lists in government. One of these is issued by the Munitions Board and is strictly a stockpiling compilation. The other is issued by the General Services Administration and is, essentially, a curtailed civilian requirement list.

Mr. Coonley feels a list is needed to show what materials can be used as substitutes when architects, builders and their suppliers cannot get the materials

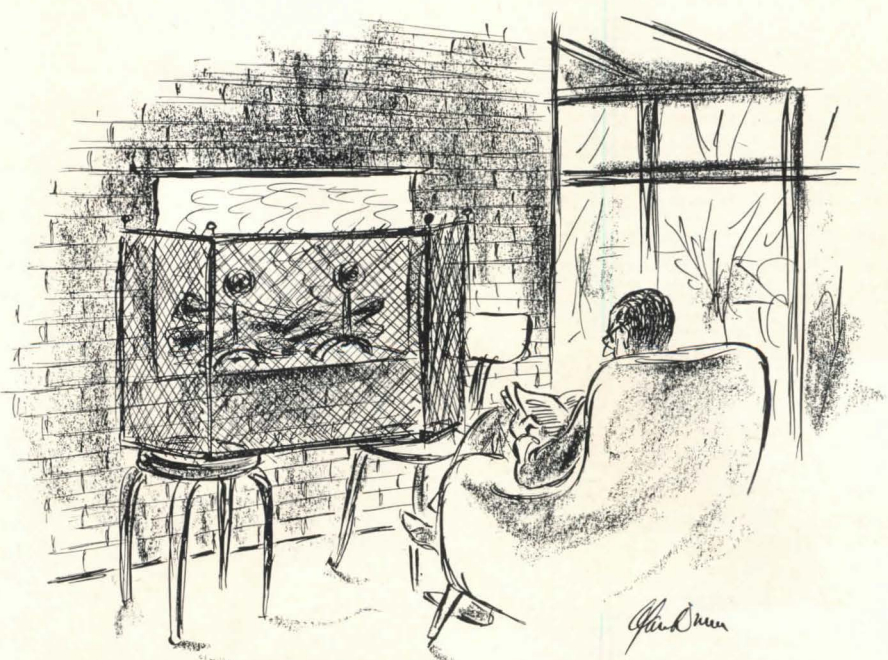
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NPA "Explains" Order M-4

To aid understanding of its Order M-4, the National Production Authority on March 12 issued a few pages of "explanations."

The explanations had the effect — probably not intended — of appearing to liberalize interpretation of the order, which prohibits new construction costing more than \$5000 for amusement, recreation or amusement purposes and requires specific authorization for construction of a list of buildings which includes nearly all commercial construction costing more than \$5000.

Specifically mentioned as needing no authorization were schools, libraries, churches, medical clinics, post offices, radio and television stations and buildings for the primary purpose of publishing newspapers, books or periodicals, food processing plants, factory restaurants, storage buildings used in the manufacturing, processing or wholesaling of food products, including tobacco, commercial airline hangars, garages adjoining new apartments and for tenant use only, and buildings for storage, sale and repair of business machines except for repair work for the general public.



Alan Dunn

— Drawn for the RECORD by Alan Dunn

THE RECORD REPORTS

WASHINGTON

(Continued from page 15)

they have been accustomed to using.

As a parting comment on the modular coordination question, he remarked: "The building industry can make its contribution to the nation's conservation program by pushing ahead on the use of modular coordination. The savings in materials, in manpower, and in time that the use of this method makes possible will be a substantial step forward. It will not only help to save materials but will make it possible for the construction industry to do more building with those materials that are available."

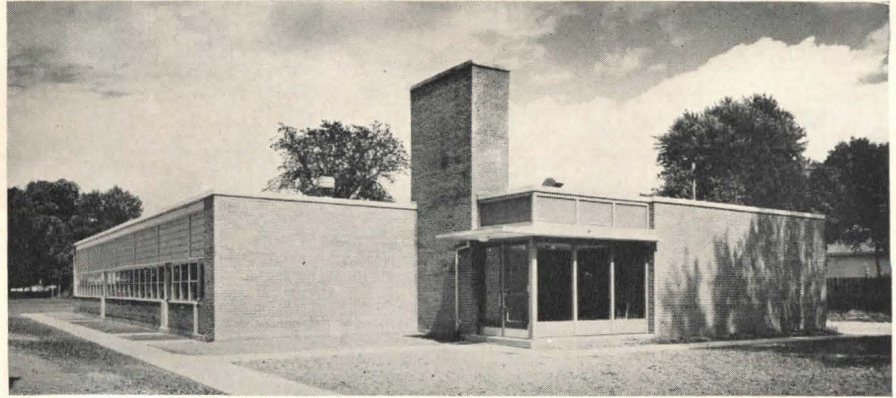
Goal Is Coordination

The committee, as a unit, will do no more than plan programs of conservation and recommend certain moves to its component members. It then will be up to the respective agency representatives to carry these back to their own organizations and try to put them into effect.

Acting as a single coordinating agency, the committee will be a clearing house for conservation information. Membership will include five representatives from Defense Department component agencies: the Army, Navy, Air Force, Munitions Board and the Research and Development Board. Other agencies which will have representation on the committee are: General Services Administration, Atomic Energy Commission, the Department of Commerce for its National Production Authority, the Department of Commerce for itself, Interior, Agriculture, Housing and Home Finance Agency, Veterans Administration, Federal Civil Defense Administration, Economic Cooperation Administration, Bureau of the Budget and the State Department. The Budget is being included so it will at all times be apprised of the committee's activities, and State was made a party to the effort because of its extensive overseas programs.

Eventually, all materials in production programs will come under the group's surveillance; but the initial concentration will be on the building industry and how it can best contribute materials savings through known and con-

(Continued on page 18)



Panda Photography

John B. Parkin Associates of Toronto were architects for this high school at Fergus, Ontario. Photos above and at bottom of page won a top photographic award for Panda Photography at the recent annual convention of the Ontario Association of Architects

NEWS FROM CANADA by John Caulfield Smith

Bomb Shelters Discussed at House Builders' Convention

BOMB SHELTERS got a big share of attention at the recent annual convention of the National House Builders Association in Montreal.

One of the first actions of the convention was the formation of a Committee on Family Air Raid Shelters to "study how the best type of family shelter at the lowest possible cost can be made available to the Canadian people."

Then the builders moved on to consider the effect on their industry of the Government's suspension of the one-sixth extra loan under the National Housing Act.

Speaking on the builder's role in civil defense, Architect W. E. Fancott of the Federal Department of Public Works pointed out that it is an official

principle that each family must look after its own protection.

"By nature of their operations," he said, "home builders are best suited to assist individual families to achieve a desirable degree of safety."

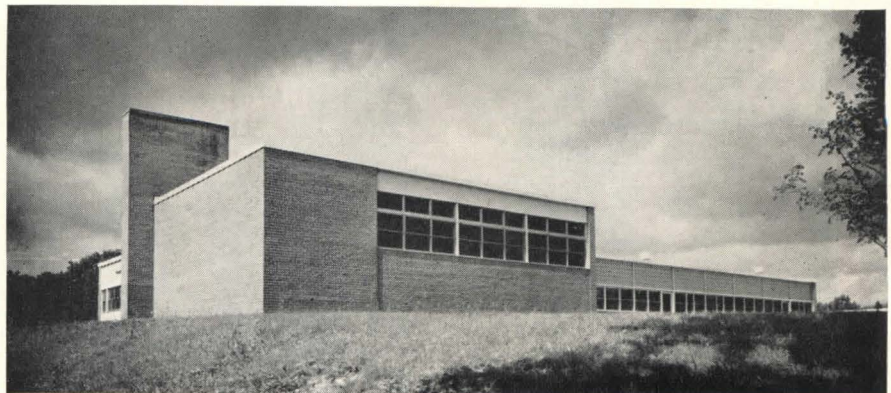
An indoor shelter is greatly to be preferred to an outdoor one in the Canadian climate, in Mr. Fancott's opinion. The latter is apt to be too cold and wet.

The best location for an indoor shelter is at the foot of the basement stairs, he said, or in the immediate vicinity. A stair against an exterior wall gives more protection than one in the center of the house. Floor joists can be strengthened by beams and struts to take the load should the building collapse.

Other information offered by Mr. Fancott:

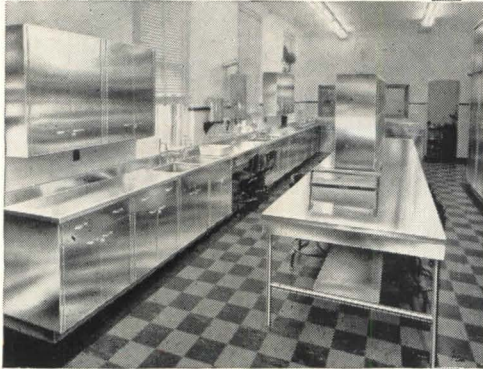
(Continued on page 268)

High school at Fergus, Ontario; John B. Parkin Associates of Toronto, Architects





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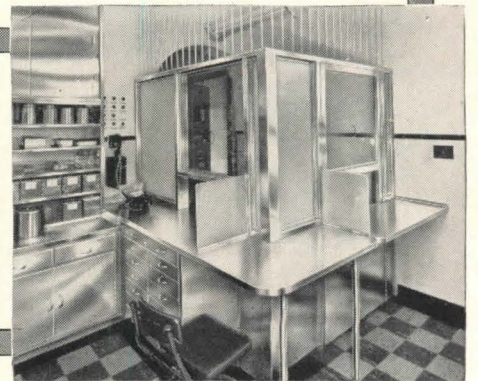
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THE RECORD REPORTS

WASHINGTON (Cont. from p. 18)

tional capacity of almost 14 million tons (better than a 16 per cent increase) by mid-1953. A quarter million tons of steel has been earmarked for this program.

Production Is Paramount

All this indicates that those people making the decisions are counting on higher production levels eventually to offset a major portion of the need for regulatory controls. There's no question

that the emphasis in all government planning is on one thesis — production and ever more production. That is why the construction of plants for providing steel, aluminum and other materials in short supply is encouraged through issuance of isolated priorities by NPA. In short, Uncle Sam is going to let almost nothing stand in the way of completion — early completion — of a badly needed new production facility.

The building materials division of the controls agency constantly is expediting the delivery of materials to projects designated as of the greatest necessity to the defense effort. It insists that these moves have been made in isolated cases only, where lack of one or two materials might have halted work on an important project. But the creed is to keep the industrial facilities program moving ahead as rapidly as possible — without expanding the present priorities system too much — until a controlled materials plan takes over.

It was regarded as certain that issuance of Regulation 4 under NPA's Directive 1 had moved the date of the CMP closer to realization. Regulation 4 came late in February, covering with priority ratings the procurement of equipment and supplies for maintenance, repair and operation of the facilities of all establishments in the country. This was a broad application of priorities indeed.

But it was needed urgently, according to Manly Fleischmann, NPA acting administrator. "We cannot let the need for materials and equipment to build new facilities interfere with the maintenance of existing capacity," he said. "We can afford a few pounds of metal today to keep a machine running rather than several tons tomorrow to make a replacement machine. And this way we avoid the loss of production and employment that would result if we allowed our present equipment to fall into disrepair."

The agency takes the attitude that the MRO order will not interfere in any manner with the defense program because the materials required constitute a small percentage of the total supply. Nobody is required to use the new ratings assigned to purchase his MRO supplies; but if he does so, he becomes bound by the limitations of the regulation.

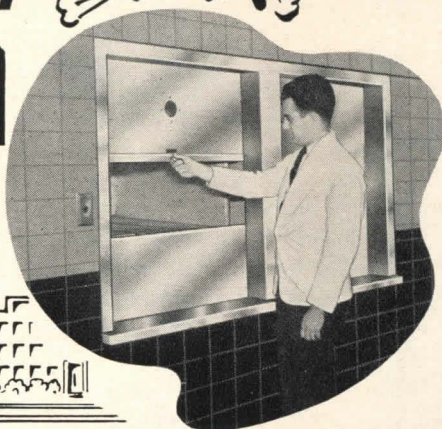
Action on Credit Curbs Hit

Shortly after the Board of Governors of the Federal Reserve System and the Housing and Home Finance Agency extended the coverage of Regulation X, the real estate transaction credit curb, to include most nonresidential properties of the commercial type, these same agencies also announced that Regulation X would be relaxed in two known defense areas: the Savannah River region near Aiken, S. C., and the area around Paducah, Ky.

These steps were taken against a back-

(Continued on page 22)

Why **SLAM** the Door...



...on greater

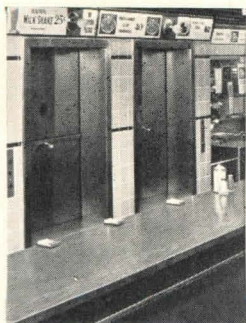
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Counter Door Units at F. W. Woolworth's largest store in Houston are typical of Security installations in Woolworth stores throughout the country.

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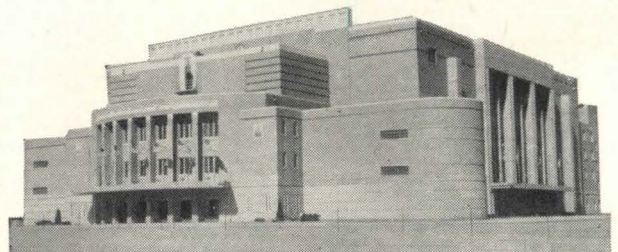
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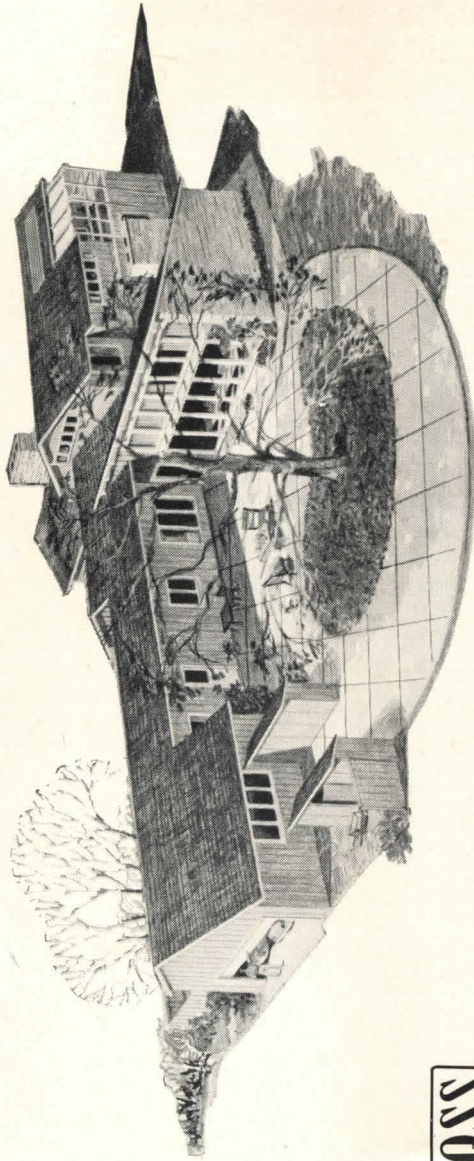
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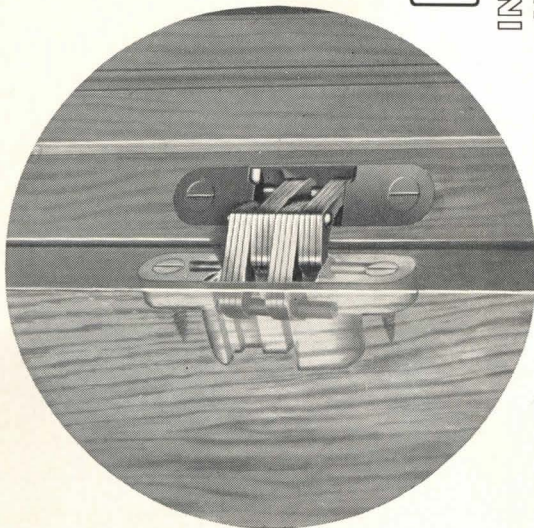
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"the hinge that hides itself"

A. I. A. File No. 27-B-1

THE RECORD REPORTS

WASHINGTON

(Continued from page 20)

ground of industry criticism that the commercial restrictions went too far, and that the federal government should have eased the curbs on housing sales long before it did.

In answer to a request from the Society of Industrial Realtors to clarify the Regulation X extension, the Board of Governors ruled that plant offices and warehousing will be considered as designed for use in processing materials, and therefore not subject to the regulation, if they are an integral part of the operations involved in the processing of such materials, goods, or articles.

Following is the new FRB interpretation which has gone out to all Federal Reserve Banks:

" . . . Office buildings and warehouses, as well as other buildings are ordinarily subject to the regulation. They are not subject to the regulation, however, if they fall within one of the exclusions from the definition of 'nonresidential structures' . . . It is the opinion of the Board that space in such structures as office buildings and warehouses is used or designed for use in processing materials, goods, or articles into finished or partly finished manufactured products where such office building or warehouse is essential to and an integral part of the operations involved in the processing of such materials, goods or articles. Unless the office building or warehouse, however, is essential to the processing operation and an integral part thereof, it is subject to the regulation."

New construction for use by manufacturing or mining businesses or for various farm uses also is exempted if more than 80 per cent of the floor space of the new building is employed (1) in processing materials, goods, or articles into finished or partly finished manufactured products; (2) in mining or otherwise extracting raw materials; or (3) on farm property in the production, shelter, or storage incidental thereto of crops, livestock or other agricultural commodities.

One important facet in the involved extension of Regulation X to the non-residential property transactions is this:

Construction loans made to subcontractors and others except the owners

are exempt when they have maturities not exceeding 24 months. Construction loans to owners of proposed nonresidential construction must conform to the regulation except that amortization is not required for 24 months under certain conditions.

X: M-4=?

There was some confusion over how the amendment by the Federal Reserve could be squared with the M-4 construction restriction of the National Production Authority. The Board, in its announcement, said extensions of credit in connection with any and all construction of nonresidential buildings permitted by the NPA would have to conform to the terms of its Regulation X. Then, FRB commented that "Regulation X will thus aid in the effective administration of the regulations issued by the National Production Authority in this field."

Relaxation of Regulation X in the two areas where Atomic Energy Commission installations are being constructed prompted speculation on how far this trend might go, and how soon.

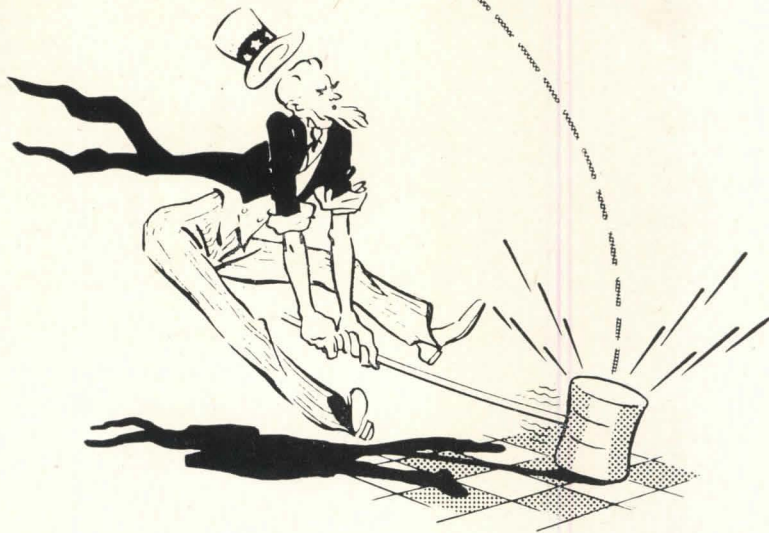
The details of the relaxation of housing credit curbs at Aiken, S. C. and Paducah, Ky., came in the same week that the Banking committees of Congress were considering the defense housing bill for final action. In fact, the House committee, under Chairman Brent Spence (D-Ky.), reported its measure out and hoped for early approval by the Rules committee and immediate floor consideration. The Senate counterpart, after some of its members had visited the Aiken site and the Levittown housing development of builder William Levitt on Long Island to study his speedy methods of home construction, began its executive sessions on the big multi-billion dollar measure at the same time.

X Relaxed in Defense Areas

Housing Administrator Raymond M. Foley took the first big step in announcing relaxation of credit curbs on a selective and controlled basis as the first move toward meeting "part of the housing need" at the two locations. Intention was to facilitate private construction of additional housing for employes to be moved into the areas for work at Atomic Energy Commission installations. Under this new Regulation X adjustment a flood of applications from private builders was anticipated. In fact, the an-

(Continued on page 24)

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nouncement of final details was delayed until a large supply of the forms could be printed. Housing so constructed will have to be held for occupancy by the immigrant workers, and those actually employed at the defense installation, it was understood. Furthermore, these workers must be certified by the AEC.

Mr. Foley's announcement was made with the concurrence of the Board of Governors of the Federal Reserve Sys-

tem, which had previously amended Regulation X to permit terms different from those prescribed by the Regulation to apply to specific new construction necessary to the national defense. The Board also authorized the announcement of the specific terms as set forth by Mr. Foley for use in connection with non-government aided financing in the two areas.

The relaxations for housing within

reasonable commuting distance are restricted to specific rental housing which will be programmed by HHFA as to the number of units, size and rentals, and to sales housing for which the AEC will issue certificates for eligible purchasers — all of which will be exclusively for AEC personnel and those of its contractors at the two installations. It is estimated that 1000 such housing units will be built at Paducah, while at Savannah River the estimated need is for approximately 3600 units, of which only about 500 can be built at this time because of lack of community facilities to service more than that number. As facilities become available, it is planned to extend the credit relaxation to a greater number of houses.

Any other housing built in these areas will continue to be subject to Regulation X and related real estate credit restrictions as before. Quotas for rental and sales housing out of the totals for which credit controls are relaxed will be announced by the representatives of the Housing Administrator in the localities.

The housing to be built at both installations under the revised terms falls into two general classes, with a different schedule of credit terms for each — one-through four-family housing and multi-unit residences.

As an example of the degree of liberalization brought about by the amendment: the purchaser of a \$9000 house is required under Regulation X and the companion FHA regulation to make a down payment of \$1900. Under the new terms the down payment requirement will be \$1400 or 15.6 per cent of the total price, instead of the 21 per cent down payment requirement under Regulation X.

Defense workers who are veterans and who purchase homes with G.I. guaranteed loans in the Paducah or Savannah River areas will continue to enjoy preferential terms over non-veterans.

The HHFA has opened offices in the two defense areas, managed by two special representatives of the Housing Administrator. Paul E. Ferrero Jr. is in charge of the Savannah River office at Aiken, S. C. Joseph Tufts is in charge of the Paducah office. Both offices began immediately to give out applications for permits to build the rental units authorized under the relaxed controls.

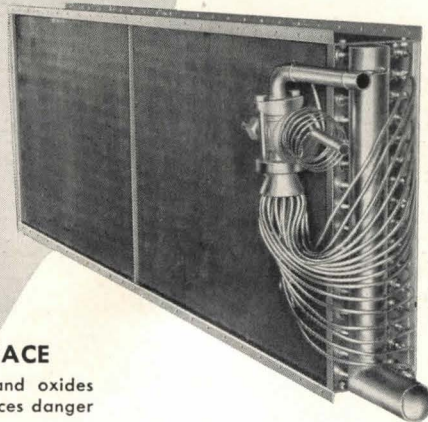
Applications will be processed and approved by the special representatives up to the previously announced quotas. Holders of approved applications will then be free to proceed with the con-

(Continued on page 234)

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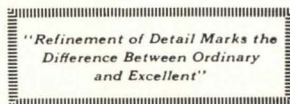
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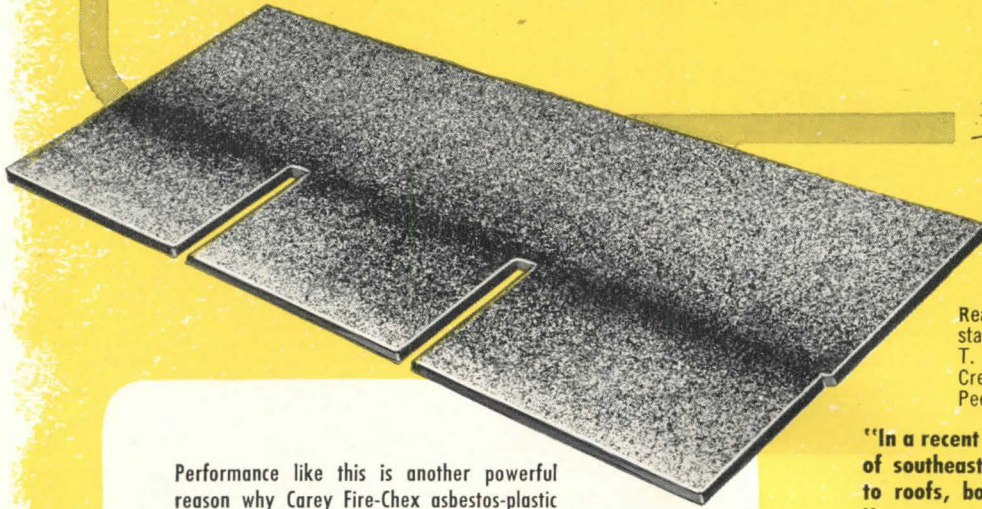


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CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926-1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Brick and Steel Concr.		Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Brick and Steel Concr.	
	Brick	Frame		Brick	Frame	Brick	Frame		Brick	Frame
1925	121.5	122.8	111.4	113.3	110.3	86.4	85.0	88.6	92.5	83.4
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	96.9	98.5	97.5
1945	160.5	161.7	156.3	158.0	155.4	132.1	133.9	123.2	122.8	123.3
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.4	240.0	189.3	189.9	180.6	180.8	177.5
Nov. 1950	265.7	263.6	257.1	258.8	254.3	202.0	203.8	194.0	191.1	194.0
Dec. 1950	268.1	266.5	258.5	259.9	257.2	205.4	208.0	195.3	192.0	195.3
Jan. 1951	270.6	269.3	260.6	262.2	259.4	209.2	210.8	200.0	199.0	200.4
Jan. 1951	% increase over 1939		99.4	96.6	99.4	% increase over 1939		110.3	104.3	111.6
Jan. 1951	119.1	120.0	99.4	96.6	99.4	142.4	153.7	110.3	104.3	111.6

ST. LOUIS

SAN FRANCISCO

1925	118.6	118.4	116.3	118.1	114.4	91.0	86.5	99.5	102.1	98.0
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5
1945	152.8	152.3	146.2	148.5	145.6	146.2	144.3	144.5	146.8	147.9
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
Nov. 1950	240.3	236.6	228.0	231.5	228.5	233.6	230.3	227.0	228.0	227.3
Dec. 1950	243.0	239.7	229.9	233.3	229.9	235.2	232.0	228.4	229.5	228.9
Jan. 1951	247.2	243.2	232.6	235.6	233.8	240.2	235.4	235.0	239.1	235.5
Jan. 1951	% increase over 1939		96.0	96.7	96.5	% increase over 1939		100.2	96.1	102.1
Jan. 1951	124.3	127.3	96.0	96.7	96.5	127.5	137.1	100.2	96.1	102.1

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926-29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
 index for city B = 95
 (both indexes must be for the same type of construction).
 Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

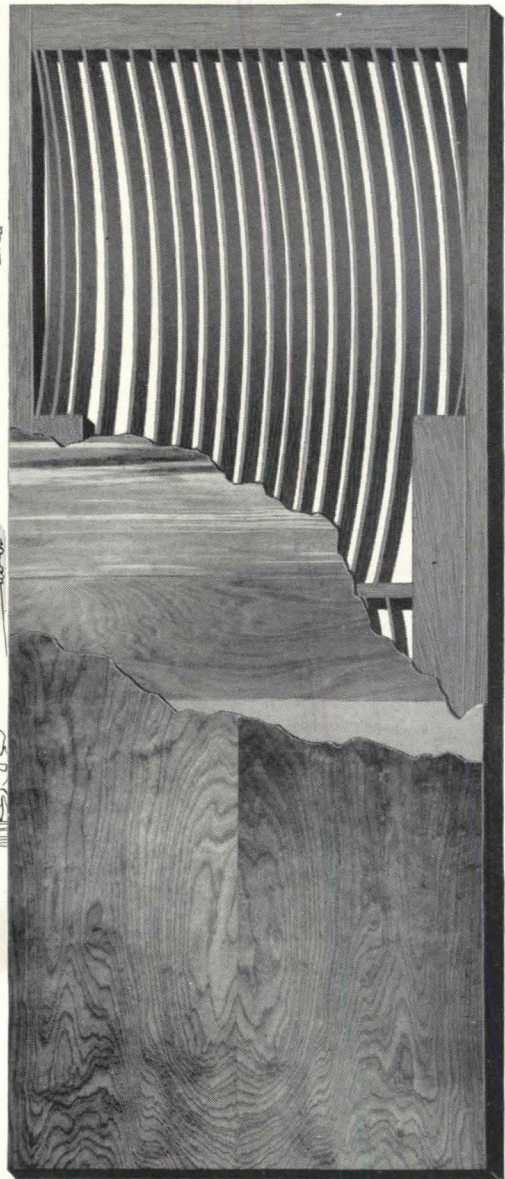
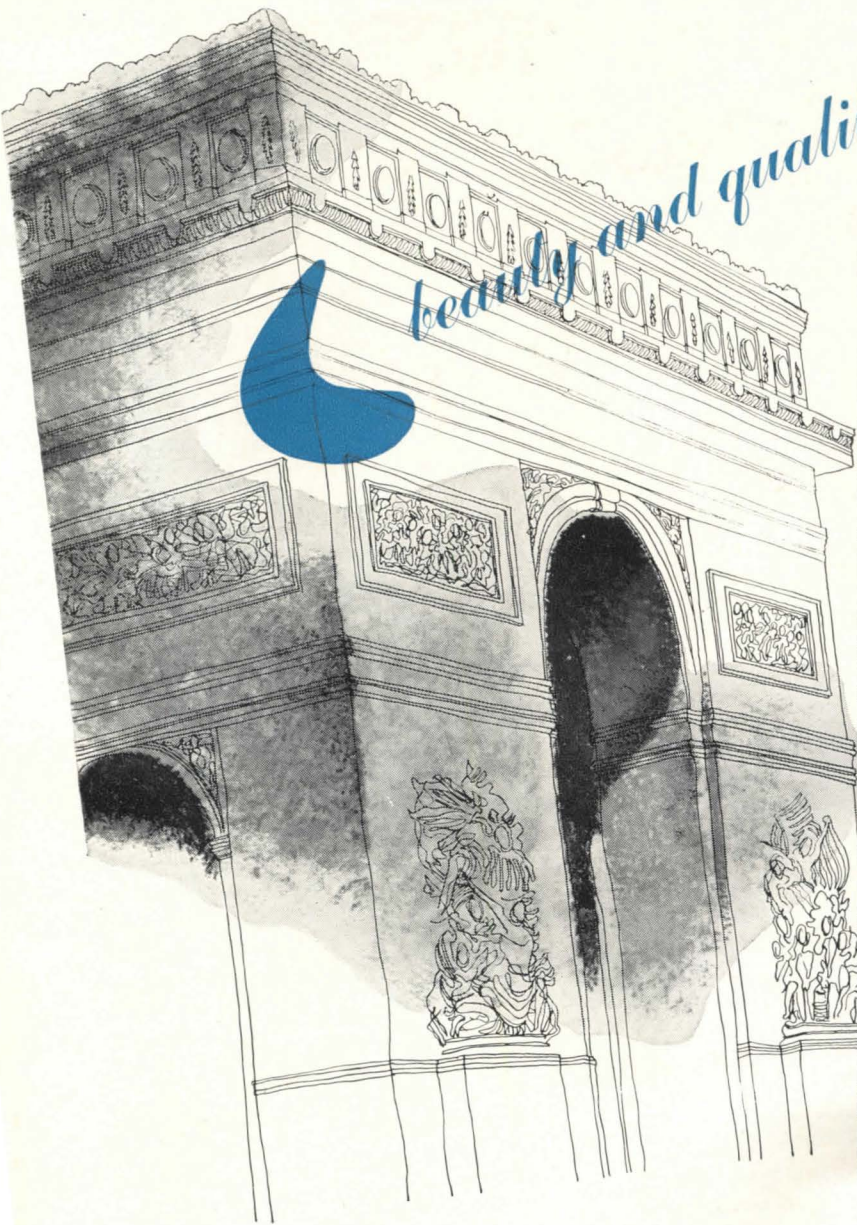
$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.

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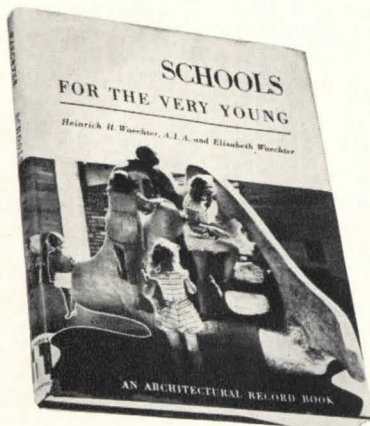
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REQUIRED READING



Jacket design by M. Peter Piening. Play sculpture by Moller-Neilsen

PRESCHOOLS

Schools for the Very Young: An Architectural Record Book. By Heinrich H. Waechter, A.I.A., and Elisabeth Waechter. F. W. Dodge Corp. (119 West 40th St., New York 19, N. Y.), 1951. 7 $\frac{3}{8}$ by 10 in. 184 pp., illus., \$6.50.

REVIEWED BY ARNOLD GESELL, M.D.*

This book has several virtues. It combines the outlook of an architect and of an educator in its man and wife authorship. It reflects first-hand contacts with numerous "preschools" both in America and abroad. The introduction and a bibliography of 187 titles show an awareness of the social forces which are demanding more generous school provisions for children from two to six years of age.

During the last three decades the status of the preschool child has undergone a revolutionary change. Under the urgency of World War II, preschool child care centers and nursery units were multiplied on a vast scale. Here and there the nursery school has been made an integral part of our public school system. The present cultural crisis will create new problems and new solutions which inevitably come to a focus in community efforts to protect the welfare of the family unit and its

young children. There are so many social factors converging in this protection that the focus is easily blurred, particularly if the architect fails to see his role.

The authors recognize the diversity of these factors in their discussion of the preschool as part of community planning which may variously involve housing developments, a children's hospital, a child guidance center, a factory, a shopping center, a training center for handicapped children, a cooperative neighborhood, a college education, a public elementary school. The volume is illustrated with a wide array of floor plans and photographs. The photographs although concretely suggestive, scarcely convey an adequate impression of the manifold activities, both child and adult, which occur in the course of a preschool day.

It is these activities *in their context* as well as their essence, which must provide the functional basis for imaginative architectural planning. Ideally, a preschool is a vital center not only for the young child; but for adults and adolescents, for parents and older siblings; for the teen-agers who are taking home-making courses; for nurses, social workers, doctors and medical students who have professional and prospective interests in this crucial area of child development. For such reasons, the architec-

tural arrangements should definitely provide one-way observation facilities and other adjuncts which will enable adults and adolescents to participate more fully in "the miracle of life" and growth which transpires too much unseen.

In our zeal to provide schools it is easy to forget that the very young have a great deal to teach us. Architecturally and socially it is possible to plan accordingly.

The composition of nursery school groups varies enormously, with the age, temperaments and the home background of the individual children, to say nothing about the interpersonal imponderables which are introduced by the individualities of the guidance teachers. The authors therefore stress the importance of flexibility in basic layout and in movable sub-units and fixtures: "If there is but one playroom, school children of all ages from two to six are together and the room should be so diversified that different age groups can be formed or the individual child can follow activities of his own choice. The activities are so manifold that not only should special corners be provided for solitary play, domestic plays, music, wet play, block building, etc., but the main area should be large enough to provide sufficient flexibility for constant changes. In many instances there are enough children in the school to arrange rooms for each of several groups."

Two of seven chapters deal with preschool outdoor space and various technological problems of construction, lighting, ventilation, color, equipment and furnishings, abundantly illustrated by contemporary examples. The concreteness of exposition and the suggestiveness of the comment will reward both the technical and the general reader.

This volume marks a comprehensive approach to an extremely important field of human welfare — an area which is destined to increase rather than diminish in significance for it touches the vital center of a democratic culture, namely the status of child and family.

(Reviews continued on page 32)

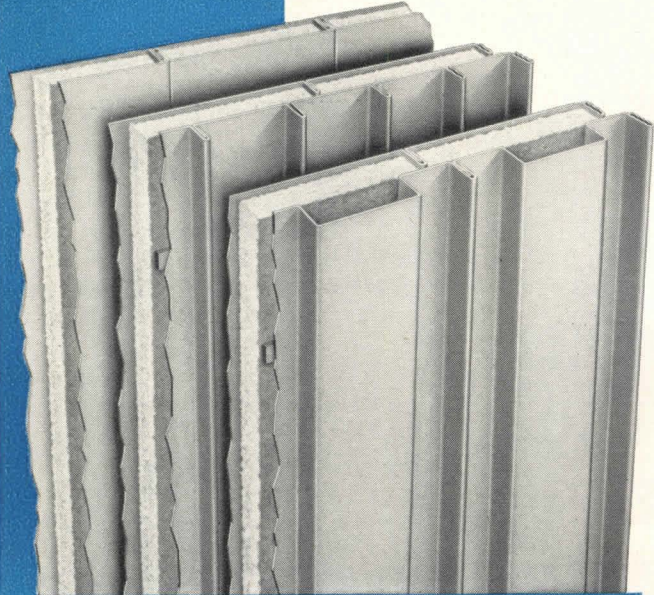
*Research Consultant, Gesell Institute of Child Development, New Haven, Connecticut.

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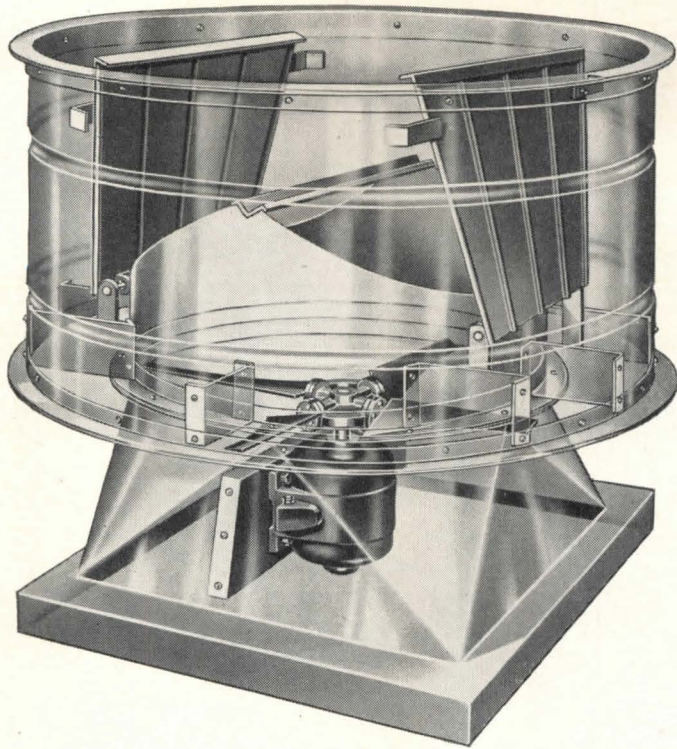
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M A H O N

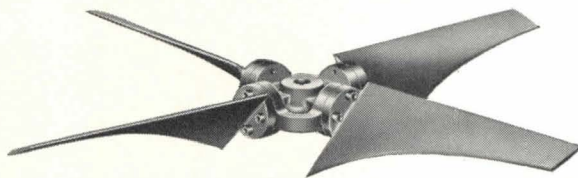


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REQUIRED READING

(Reviews continued from page 30)

OLD NEW ENGLAND

Salem Interiors: Two Centuries of New England Taste and Decoration. By Samuel Chamberlain. Hastings House (41 East 50th St., New York 22, New York), 1950. 7 by 9½ in. 176 pp., illus. \$6.00.

Readers of Mr. Chamberlain's earlier books will not be disappointed in this latest volume by him despite its limited scope. For many of the old Salem houses pictured here still retain their original furnishings, displayed just as they were a hundred or two hundred years ago, and many of them also contain examples of Samuel McIntire's wood carving. "The skill and subtlety of this gifted architect-craftsman," Mr. Chamberlain says, "who was inspired by the Brothers Adam but still remained a creative genius in his own right, had a lasting effect on American decoration. Salem had an almost complete monopoly on his work."

Mr. Chamberlain has let his excellent photos speak for themselves, confining his text to a foreword and brief captions. Some 52 historic Salem houses are represented, including many which are not open to the public. They are shown in chronological order, each with a capsule history, and a small photo of the exterior.

The book was prepared, of course, more for the general public than for the architect, and the text is devoted mainly to ownership records, color schemes, and furnishings. It is rather too bad, however, that there is almost no mention of who designed the houses, or of materials used in construction. Such information would have increased the value of the book without jeopardizing its appeal.

WHERE-TO-FIND-IT

The Architectural Index for 1950. Compiled and edited by Ervin J. Bell. *The Architectural Index (1904 Bellaire St., Denver 7, Colo.), 1951.* 6 by 8⅞ in. 32 pp. \$2.00.

This booklet is an index to the buildings and articles, architects and designers published in the four domestic architectural publications during the year 1950. Buildings are classified under general building types; foreign buildings are listed under the foreign country. Articles are indicated under subject, and news items and technical literature have been omitted.

It is an extensive undertaking, and

(Continued on page 34)



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REQUIRED READING

(Continued from page 32)

one which will be tremendously useful to those in the architectural field. This reviewer wishes that Mr. Bell might have used inclusive page numbers, and will be happy to see the day when Mies van der Rohe is to be found under M where he belongs. Also, Mr. Bell might pay more careful attention to the spelling of proper names.

In spite of its shortcomings (which easily can be ironed out in future issues) Mr. Bell's compilation is a truly helpful contribution to architects, engineers and students.

NEW EDITIONS

JOHN NASH, ARCHITECT

John Nash, Architect to King George IV. By John Summerson. George Allen & Unwin, Ltd. (40 Museum St., London, W.C. 1), 2nd ed., 1949. Distributed by the Macmillan Co. (60 Fifth Ave., New York 11, N. Y.), 5½ by 8½ in. 300 pp., illus. \$3.75.

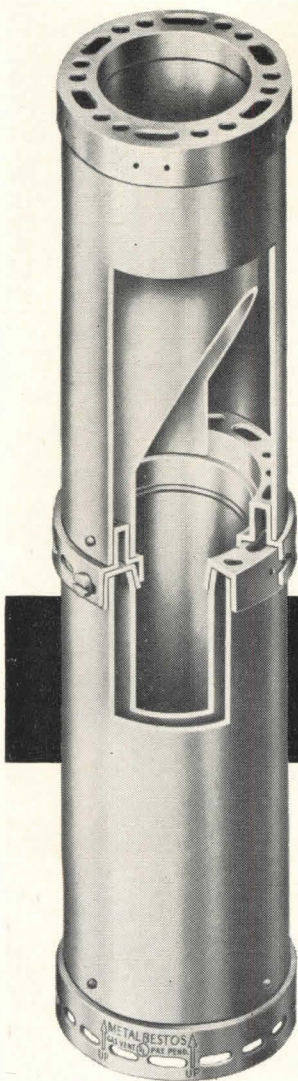
Mr. Summerson's biography of the 18th and 19th centuries' prominent English architect is an astute and often entertaining book, and a learned contribution to the history of architecture. The results of the author's research include critical information, photographs and drawings, source material, etc. The second edition remains much the same as the first, with only minor improvements and corrections.

BOOKS RECEIVED

Creating Better Cities. Chamber of Commerce of the United States, Washington, D. C. — A complete report on the third Businessmen's Conference on Urban Planning.

Laboratory Design. Edited by H. S. Coleman, with an introduction by Roland Wank. Reinhold Publishing Corp., New York — National Research Council report on design, construction and equipment of laboratories.

Related Instruction. Construction and Civic Development Dept., Chamber of Commerce of the United States, Washington, D. C. — A key to apprentice training programs in construction.



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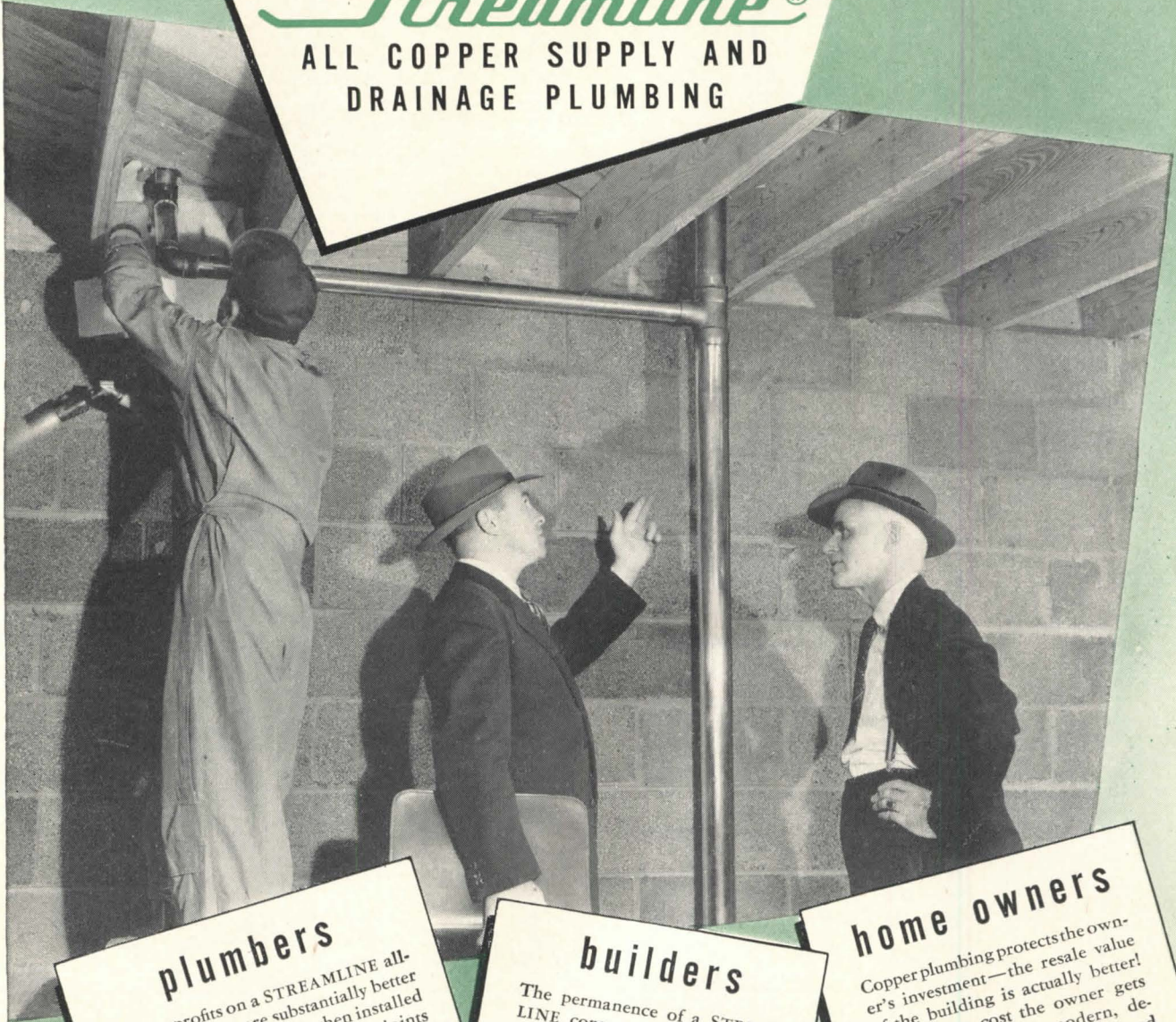


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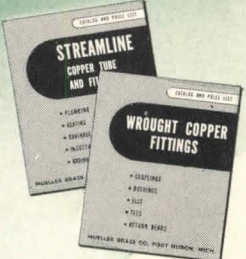
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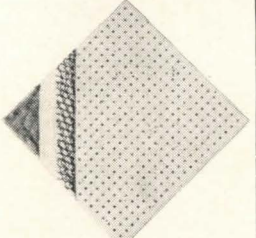
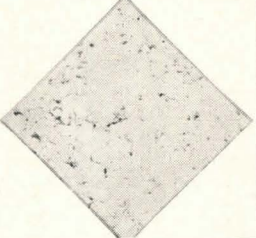
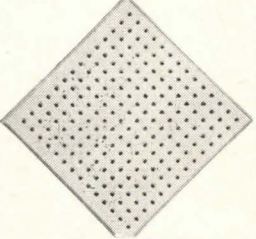
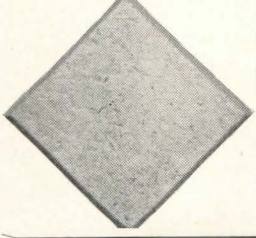

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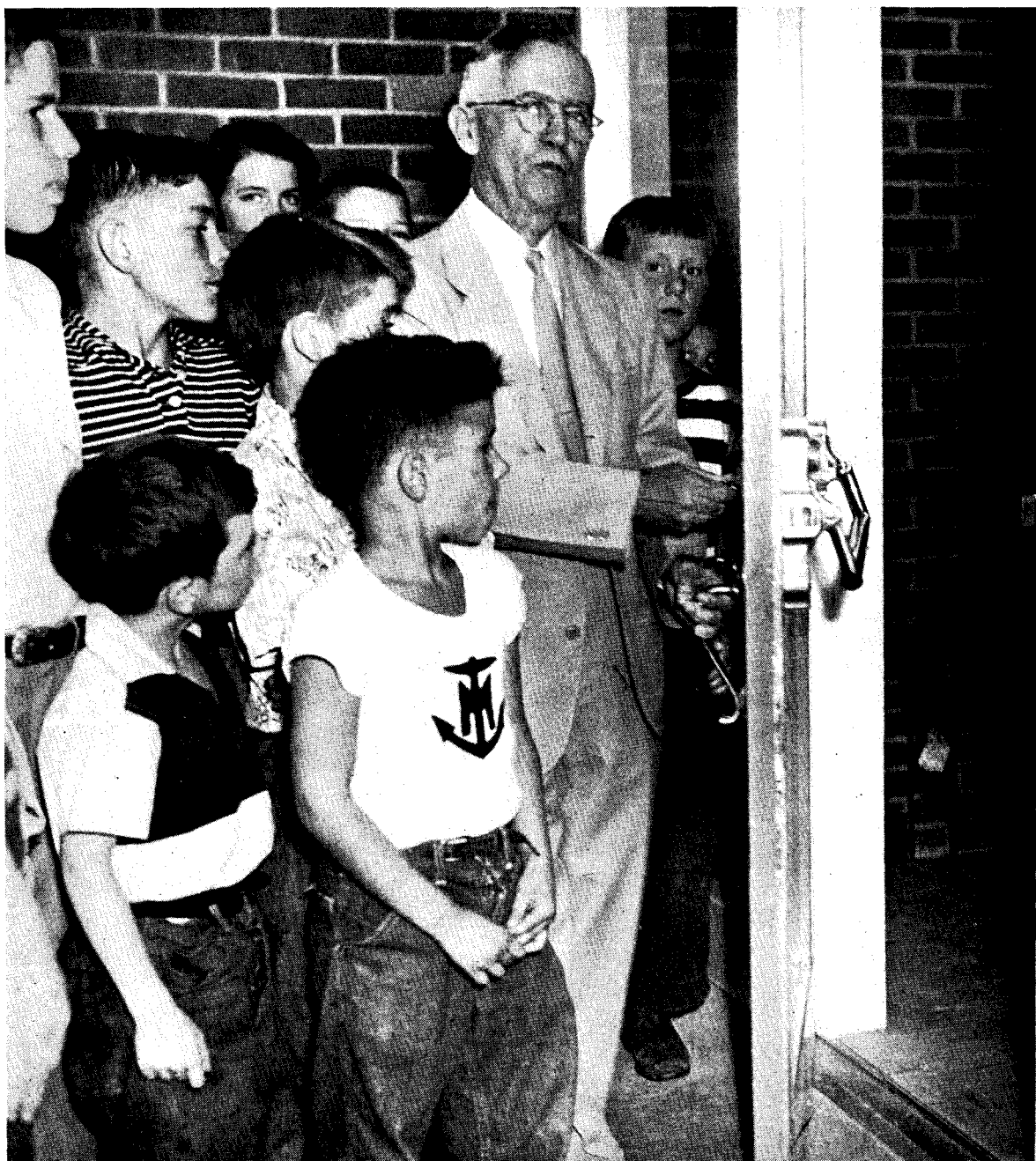
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		Noise Reduction Coeff.	Thickness	Sizes	Finish
	ACOUSTIMETAL Low maintenance cost. Can be washed or painted any number of times. Panels quickly removed for access to plumbing and wiring. Fireproof, permanent, salvageable.	.85	1 1/4"	12" x 24"	Alkyd resin enamel finish. Baked on by infra-red light. Bonding of metal assures greater adhesion of paint.
	TRAVACOUSTIC Fireproof mineral tile. Closely resembles beautiful travertine stone. Fissures vary in size, depth, and arrangement. Permanent, sanitary, acoustically efficient.	.65 .70	1 1/16" 1 3/16"	6" x 12" 12" x 12" 12" x 24"	Non-glaring white finish applied at the factory gives high light-reflection. Repaintable with brush or spray gun.
	ACOUSTIFIBRE Perforated wood fibre tile. Round, clean holes drilled deep into porous core. Chemically-treated against mould and fungus. Sanitary, cleanable, repaintable.	.50 .65 .70	1/2" 5/8" 3/4"	12" x 12" 12" x 24"	Factory-applied shell-white finish on face and bevels results in high light-reflection.
	ECONACOUSTIC Low cost wood fibre tile. Distinctive brushed texture surface offers unusual natural beauty. Cleanable with vacuum cleaner.	.60	1/2"	12" x 12" 12" x 24"	Prepainted white. May be spray-painted when other colors are desired.
	THERMACOUSTIC A mineral wool product which is sprayed to any desired thickness. Fireproof and rot-proof. Especially adaptable to irregular surfaces.	.80 at 1/2" thickness	As desired	Monolithic	Fissured texture can be repainted to harmonize with the decorative scheme without destroying its acoustical properties.

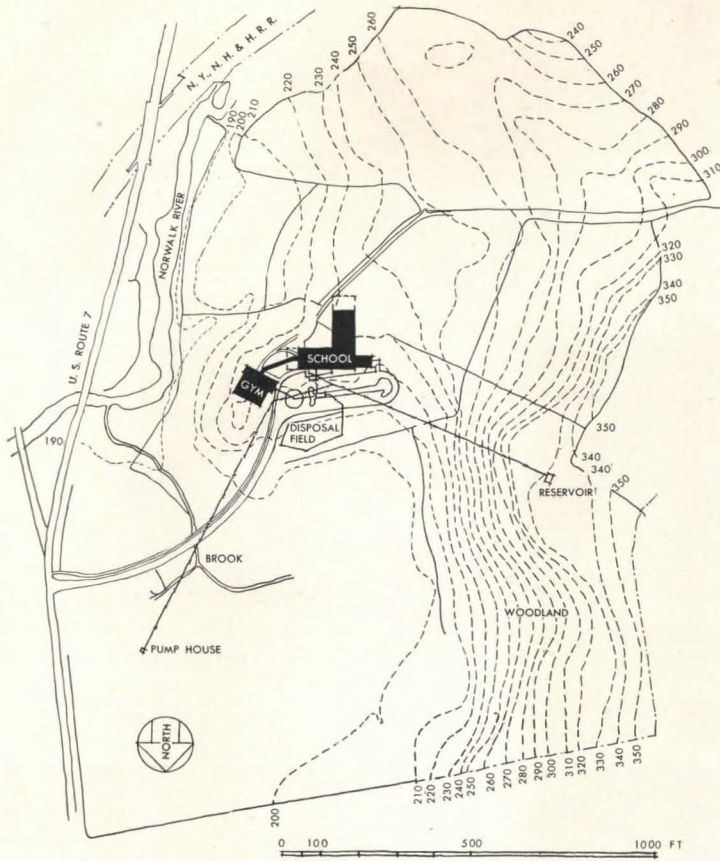


Joseph W. Mellor Photo

WILTON, CONN., BUILDS A SCHOOL



Edward N. Jackson Photo



WILTON JUNIOR

R. B. O'Connor and W. H. Kilham, Jr., Architects

Seelye, Stevenson & Value, Structural Engineers

Clark, MacMullen & Riley, Mechanical Engineers

Charles Downing Lay & Associates, Landscape Architects

Frouge Construction Co., Inc., General Contractors

Board of Education

Tilford W. Miller, Chairman
Caroline C. Rounds, Secretary
Clyde Beals
Paul Borglum
Leonard S. Bradley
Dorothy L. Moore

Building Committee

Nelson S. Hurlbutt, Chairman
Edith R. Gregory, Secretary
Georgia L. Batchelder
Leonard J. Bradley
Louis Gelders
Paul W. Jenkins
T. W. Miller
Iva R. O'Neill
Leo M. Rumely

Selectmen

Harry A. Marhoffer
Mary D. Russell
Julian A. Gregory

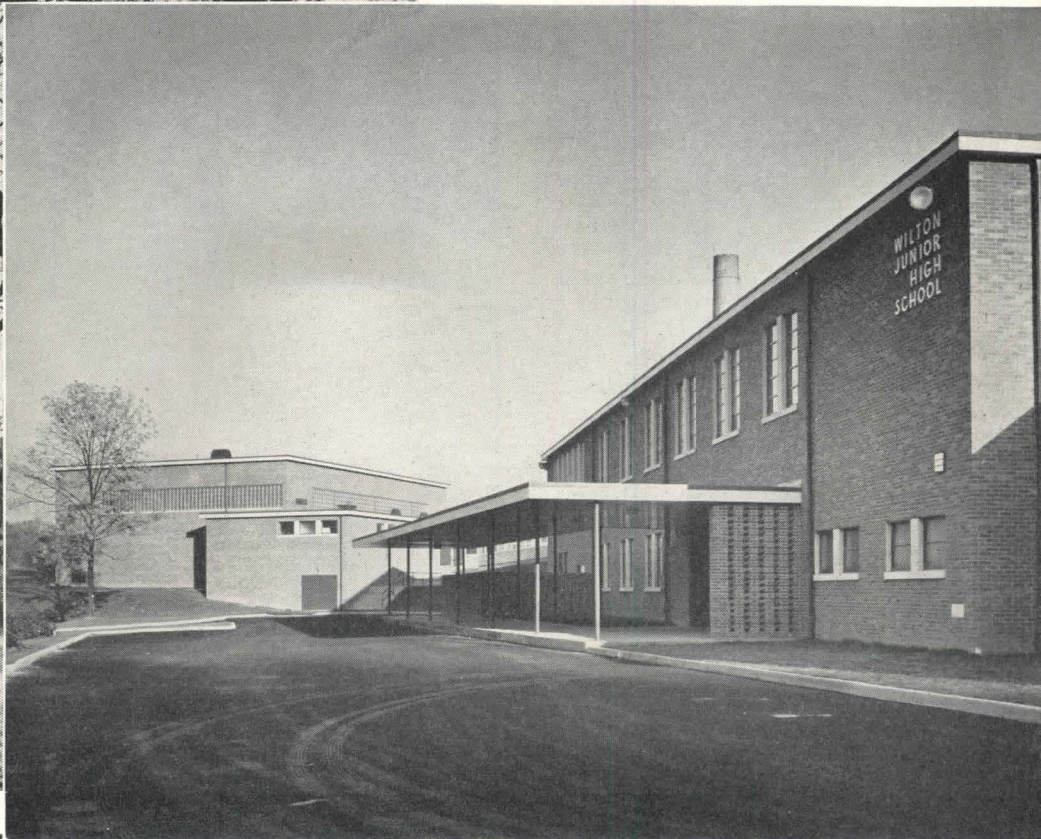


Joseph W. Molitor Photos

HIGH SCHOOL

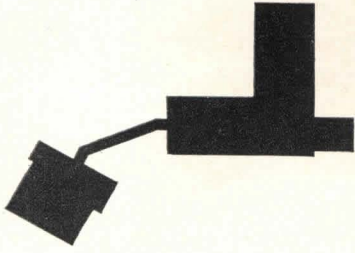
Wilton, Connecticut

THOUSANDS OF AMERICAN COMMUNITIES are now involved in building schools. Since a school is probably the greatest cultural or financial undertaking of the average community, the democratic process comes into play; the school project almost invariably excites local discussion which, violent or passive, cannot help but leave its mark on the resultant building. Emotions and desires of the school child's parents must be reconciled with practical points of view, memories of bygone schooldays with the aims of modern educators, costs of site, professional services, construction and maintenance with the tax rate. Today still other uncertainties plague building committees: however stringent controls over

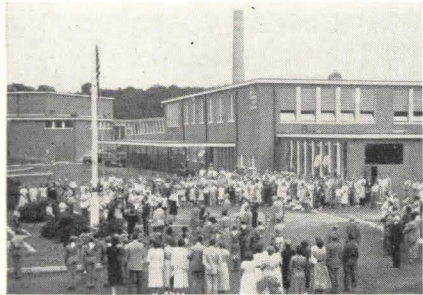
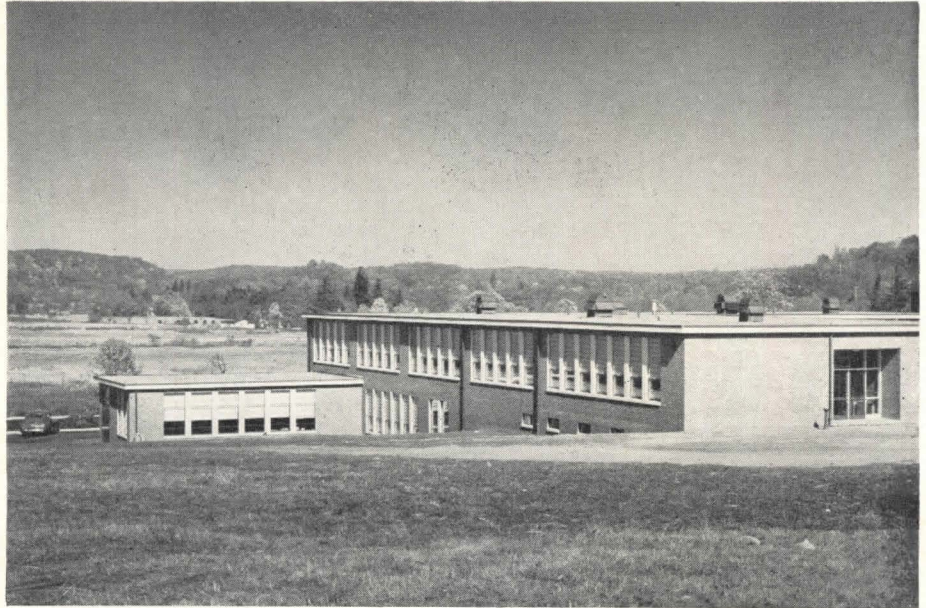


Conceived first as an elementary school with a junior-high wing, but built as a junior high school with the knowledge that it would temporarily house grades 4 through 9, Wilton's new school sits in the middle of 65 rolling acres. From a car on Route 7 the gymnasium (far left) dominates the landscape even by night; it is in almost constant use by school or community groups

WILTON SCHOOL



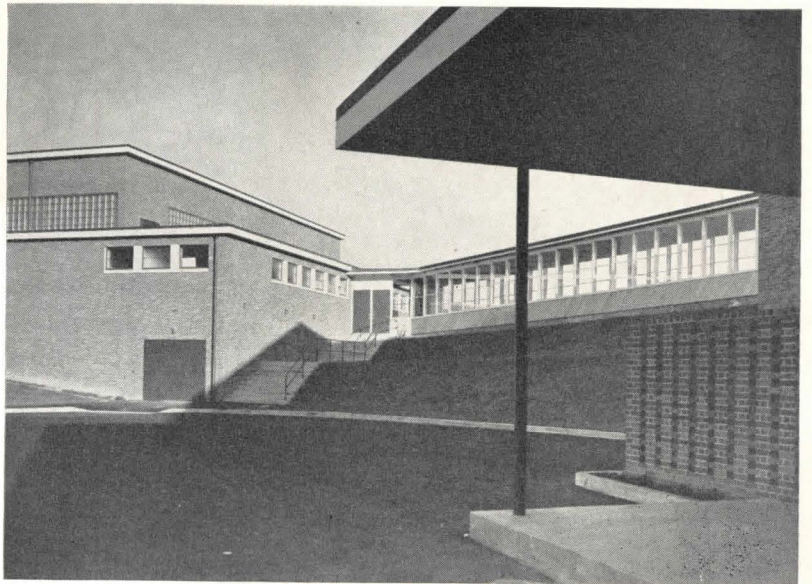
Designed throughout with no frills, Wilton Junior High at first caused some local comment on esthetic grounds. Some called it a factory, not a school, particularly after the tall brick stack was built. The tall stack with a round flue provided the most effective natural draft, permitting not only most efficient boiler size but also conversion to coal in time of emergency without installation of forced draft systems. The architects' rejoinder also included an exposition of the costs entailed by a stylistic approach to design. So important was the cost question that the gymnasium was planned for possible later construction, but a fortunately low bid by a reputable contractor permitted gym and school to be built at one time



Edward N. Jackson Photo

Dedication ceremonies (above) took place in September, 1950, only 26 months after authorization to start on drawings for the final scheme. Below, Building Committee Chairman Nelson Hurlbutt formally opens the building. Mr. Hurlbutt, one of Wilton's most respected and conservative citizens, and Mr. Miller, Board Chairman, were constant visitors to the job particularly during the last hectic rush to finish in time

Joseph W. Molitor Photos



Edward N. Jackson Photo

COST DATA

General construction	\$351,172.25
Mechanical, electric	119,511.51
Temporary heat	6,913.76

TOTAL BUILDING COSTS . . . \$477,597.52

Site work (sewage disposal; water supply, except well; roads; parking areas)	58,042.38
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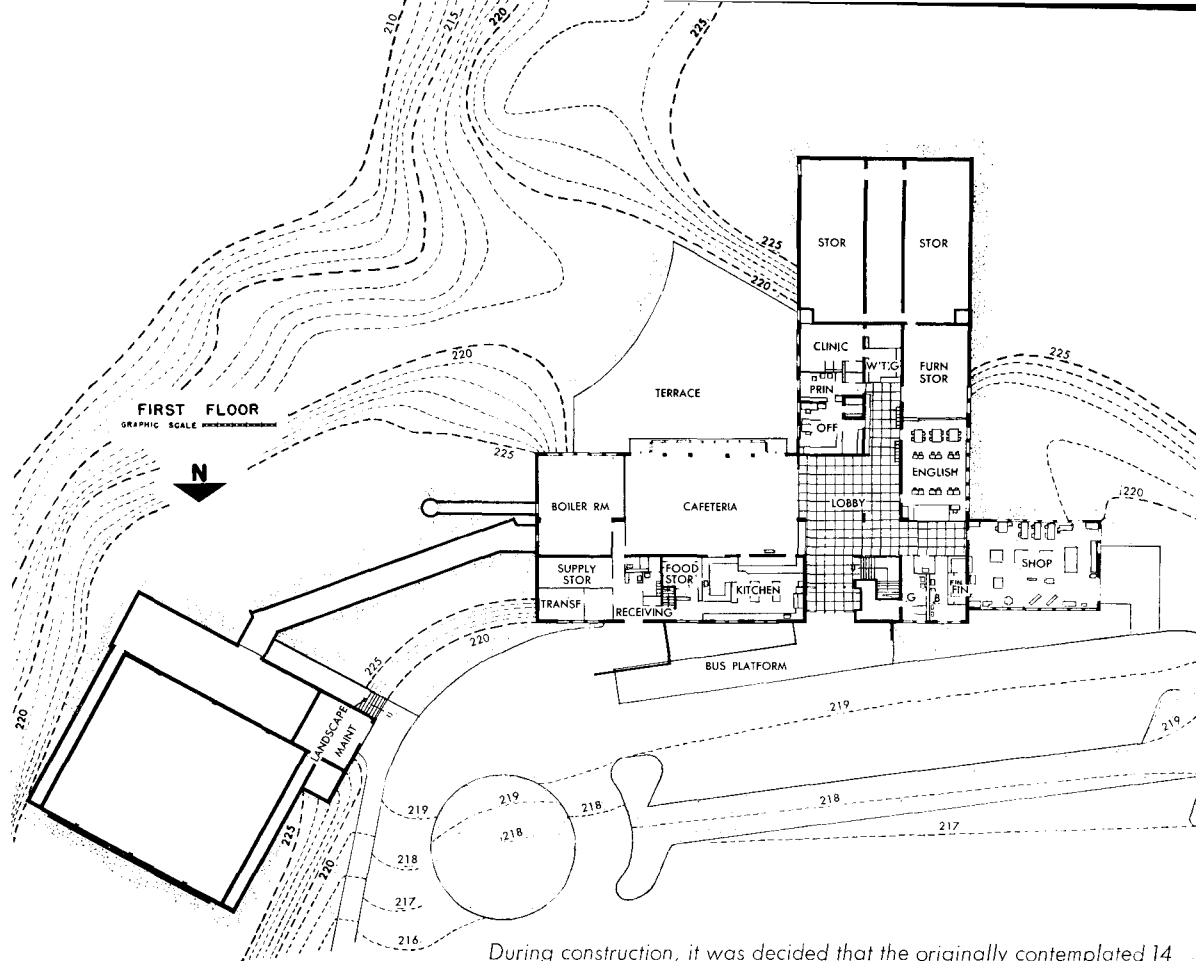
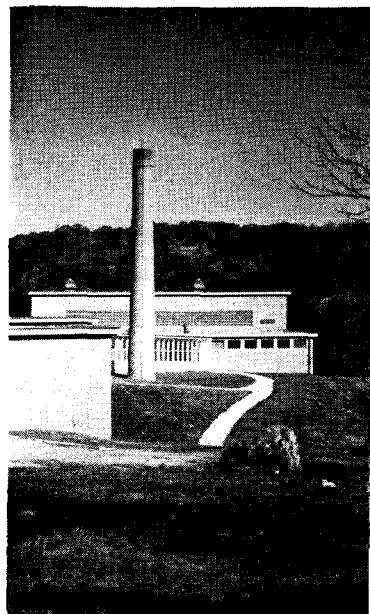
TOTAL BY GEN'L CONTR. . . \$535,639.90

Planting	\$ 4,445.50
Well, pump, elec. service, etc	6,662.75
Furnishings and equipment.	36,768.37

UNIT BUILDING COSTS

(based on \$477,597.52)

Number of classrooms	15
Cost per classroom	\$ 31,839.83
Designed occupancy	420
Cost per student	\$ 1,137.14
Total volume	616,600 cu ft
Cost per cu ft.	\$ 0.7746
Total area	41,120 sq ft
Cost per sq ft.	\$ 11.61



During construction, it was decided that the originally contemplated 14 classrooms were not enough. Room labeled furniture storage, though not ideal, was furnished and equipped to serve as a fifteenth classroom

materials may become, there will certainly be high costs and some shortages to place a premium on ingenuity of design. In other words, the democratic process of building a school not only requires that the architect be technically and artistically competent, or that he know contract law, supply sources and labor's capabilities. He must also be a diplomat, a guidance counsellor — publicly or in private — ready to collaborate in the town's behalf with the intensely interested lay citizens. Nowhere is the broad scope of professional architectural activity better illustrated than in such a school as this one in the small suburban town of Wilton, Connecticut.

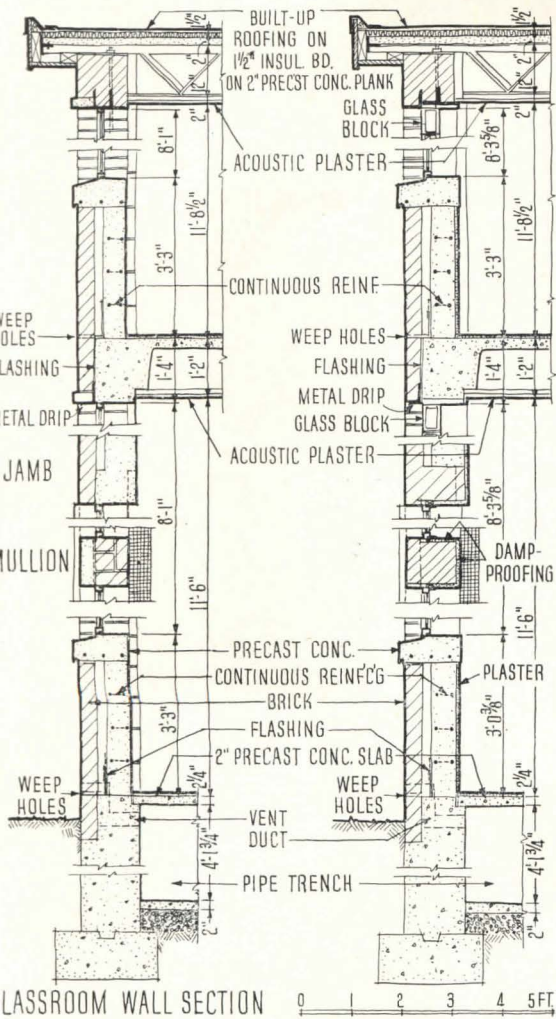
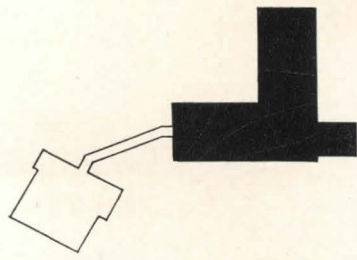
The school's history is long and complex. Ninety years ago Wilton had a population of 2200. By 1920 it had dropped to under 1300, but with good roads and automobiles it has increased to about 4500 in 1950 and is still growing. On the rim of New York's metropolitan area, Wilton is on the receiving end of the flight to the suburbs which is affecting countless outlying American communities. Most of its new population, arrived since 1940, consists of commuter families. As a group these are substantial people, interested in civic affairs, appreciative of Wilton's semi-rural advantages and also determined to continue improving the school housing situation.

Since its several one-room schools were abandoned many years ago, two schools have served Wilton's children: the Center School, located in its approximate geographical, business and population center; and Gilbert and Bennett School in its extreme North end.

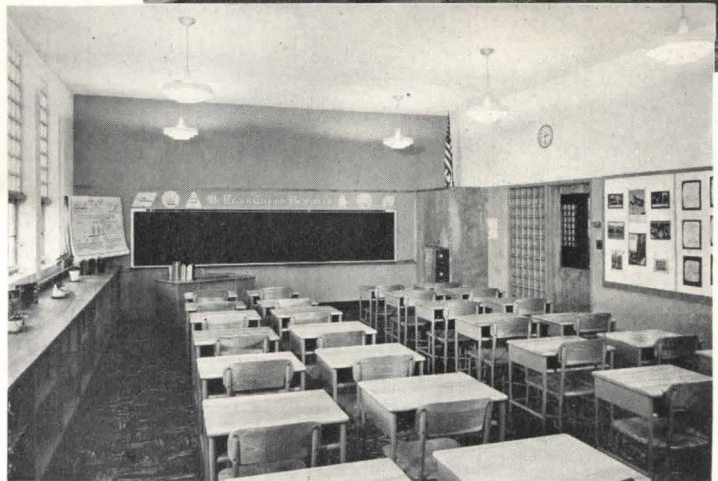
The latter draws pupils from "School District No. 10", which is made up of parts of Wilton and of the neighboring towns of Redding, Ridgefield and Weston. Until now, Wilton's school system, not large enough for complete autonomy, has been administered by a regional superintendent who also oversees several other communities. Within a short while, however, it is likely to grow sufficiently to warrant having its own superintendent.

By the mid-30's it had become apparent that the Center School was overcrowded. Its kindergarten was functioning in an adjoining remodeled private house. In 1940, concurrently with the acceleration of population growth, Wilton bought a 65-acre tract on U. S. Route 7, the Danbury Pike, along which were strung, ribbon-fashion, most of the town's few businesses and industries. At one time the tract was projected as a war memorial recreational center in which a school building would be an incidental, but before long school needs became dominant. In 1940, also, a survey group from Yale recommended establishment of a regional high school for Wilton and two adjacent communities. At this time, and indeed until the Junior High School was opened in the fall of 1950, Wilton's junior and senior high students attended school in another neighboring town, Westport; seventh and eighth graders went to Gilbert and Bennett School, and District 10 sent its secondary students to Danbury High School.

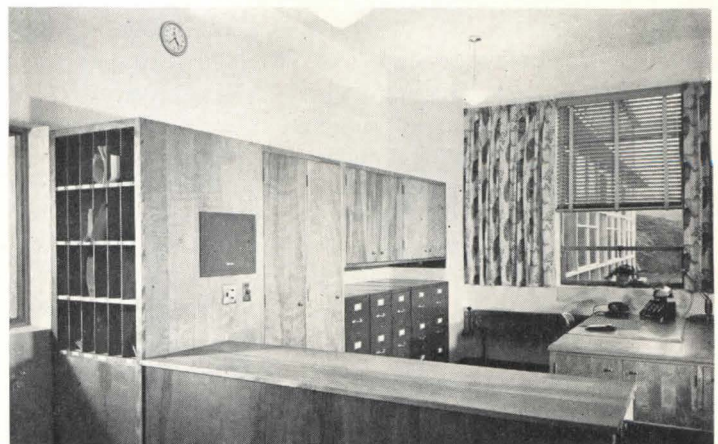
By September, 1945, a School Planning Committee had been appointed and reported to a typical New Eng-



During construction the builder found that the cavity wall with inner cinder block with the exposed was costly and time-consuming to lay up. He was permitted to plaster interiors (at slight extra cost) to obtain a better finish more quickly; details of cast sills, piers, and brick bands at window heads were changed accordingly. At left, wall as designed; right, as built. In main building, bearing wall construction was used to avoid delays—and resulting increased labor costs—contingent on use of steel. This accounts for the brick mullions

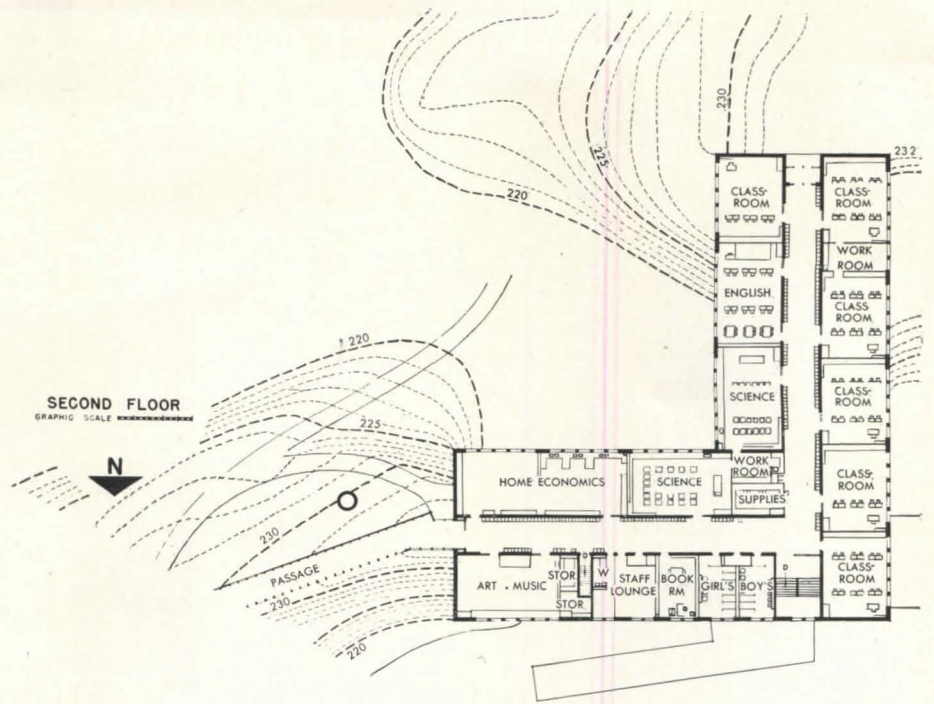


Top of page, science room; immediately above, typical classroom for lower grades; below, administrative office, unpretentious and friendly in design



Unposed photo of children leaving a class indicates students' healthy pride in their new building

Sam Vandvert Photo



Upper grade students occupy second floor rooms. Some rooms designed for secondary school classes are small for elementary school use; occasionally such a project as a long mural is painted on wrapping paper spread out on corridor floor

land Town Meeting that the regional high school had been voted down by one of the towns. An Elementary School Building Committee was constituted to get an elementary school for Wilton. By March, 1946, this committee had selected O'Connor and Kilham as its architects, Westport had notified the Wilton Board of Education that after 1950 it could not take Wilton's junior high students, a ninth grade was added to the scheme, and the first moneys were appropriated.

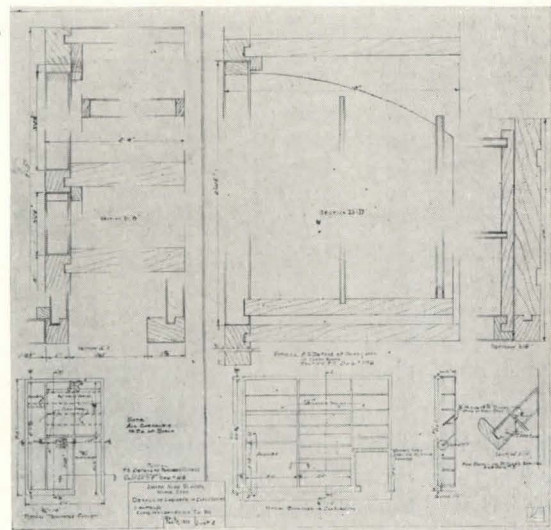
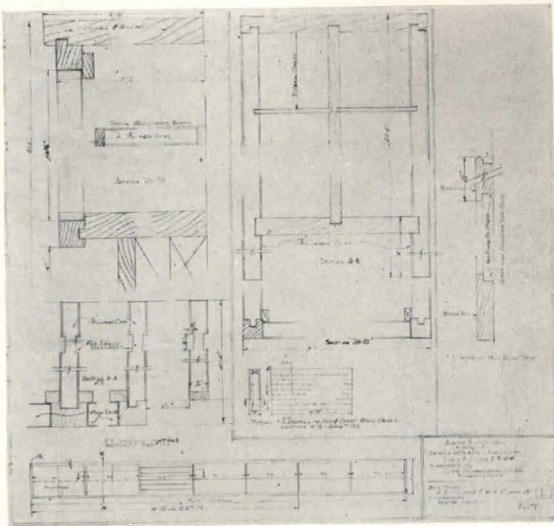
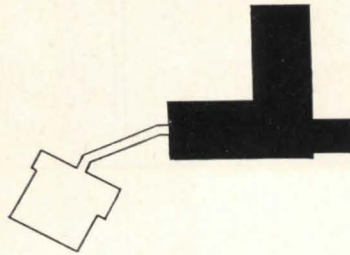
The minutes of Town Meetings, held at frequent intervals over the next two years, tell only a part of the story. As more money had to be appropriated and taxes inevitably rose, so also did the level of local interest. There were pro-elementary school, pro-junior-high-school and anti-any-school groups. At a Town Meeting and innumerable public gatherings and group meetings Walter Kilham, representing his firm, was called on to explain, to counsel, to offer alternatives. O'Connor and Kilham eventually prepared complete plans and specifications for an elementary school.

Then the storm broke. Just before Christmas, 1947, the antis, out in full force, succeeded in rescinding the construction money appropriation by a decisive vote. However, the pros demanded an impartial school survey and Wilton hired Englehardt, Englehardt and Leggett for the purpose. These respected authorities recommended immediate construction of a junior high school which would temporarily house grades 4 through 9, later construction of an elementary school in South Wilton near a core of dense school population, and

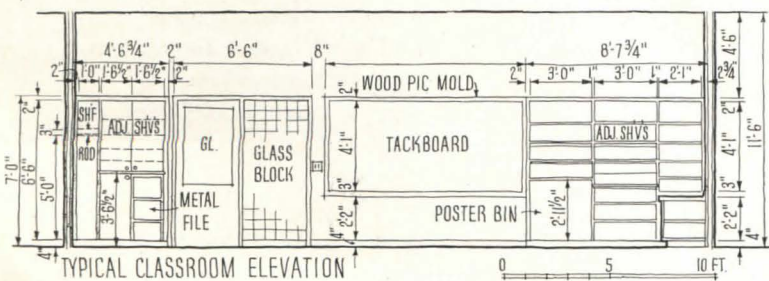
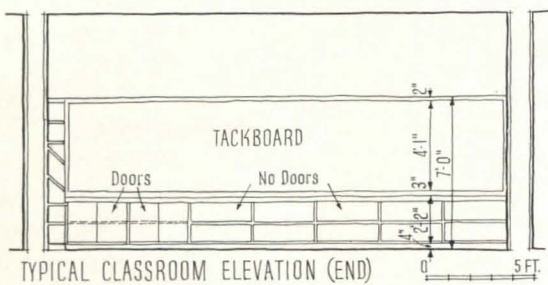
eventual construction of a senior high school and another elementary school on the central 65-acre site. In mid-1948 the necessary funds were appropriated, O'Connor and Kilham were reimbursed for their work to date and were authorized to proceed with the junior high school.

The new building was opened in the fall of 1950. The democratic process, slow but certain, had carried out the will of the majority. It had also provided a severe test of all the professional capabilities of the architects, which, one can safely say, only a few citizens truly appreciate. Nor could any reasonable fee fully compensate the architects; much of their reward must come from knowing that Wilton's people are almost unanimously proud of their new school.

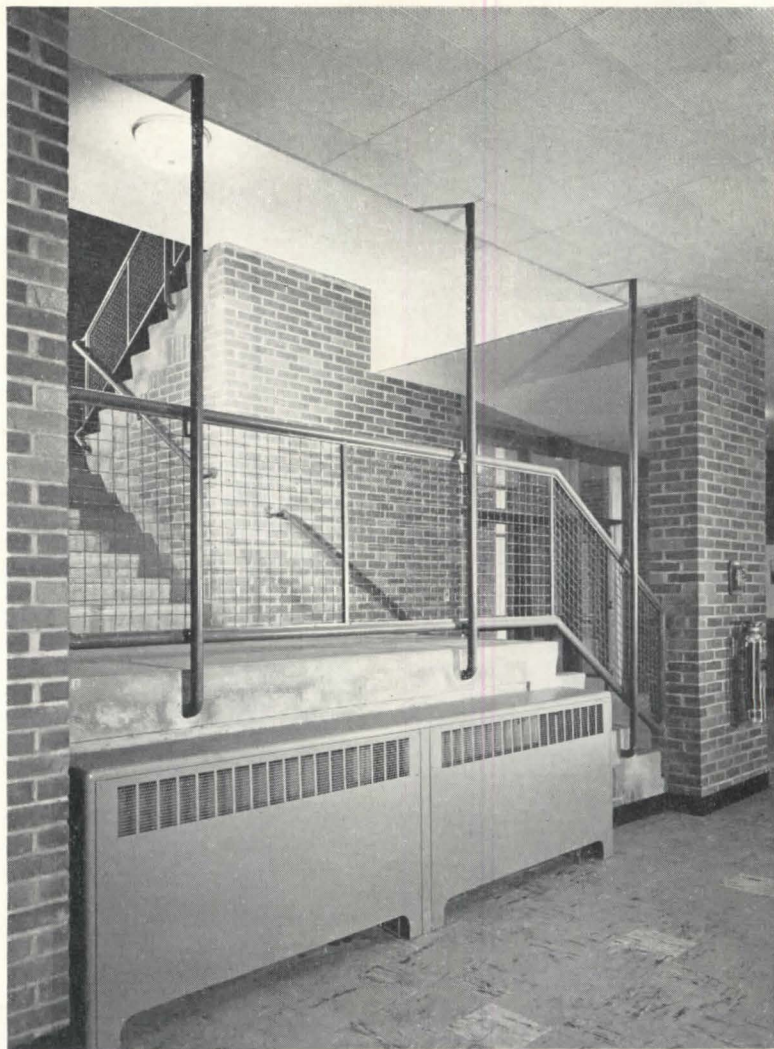
Some architects of schools have followed the practice of staying in the background and preparing an explanatory brochure for the Building Committee to issue. Wilton had been flooded with propaganda, written, printed and oral, during the entire long preliminary period. One more brochure would have been just one more brochure. Interviews with Wilton citizens who had been deeply involved leave no doubt that the architects' patience, diligence and good humor were exemplary from the day they were first interviewed by the Building Committee to the job's completion. Construction cost for the building itself, not including site work, fees, furnishings or equipment, was 77½ cents per cubic foot. How this phenomenally low figure was achieved is explained in accompanying captions.



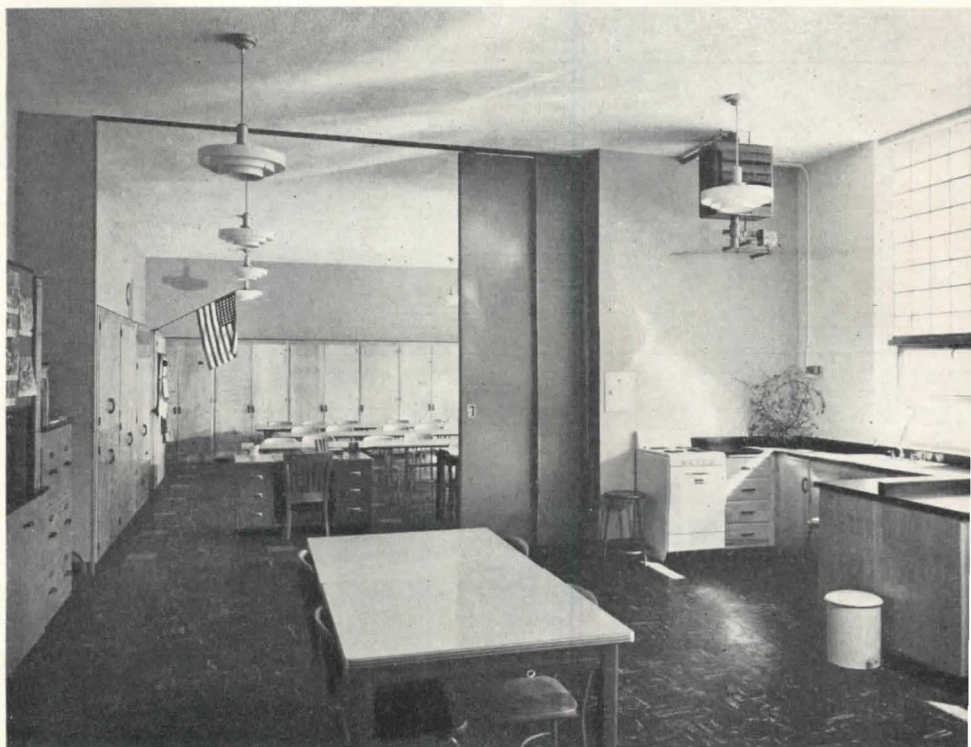
Cabinet work drawings were made in no greater detail than 1/4 in. scale elevations (below); sizes of plywood and types of joints were carefully specified. The mill man made shop drawings directly from these, reducing drafting costs and ensuring a surprisingly high level of craftsmanship for so low-cost a job

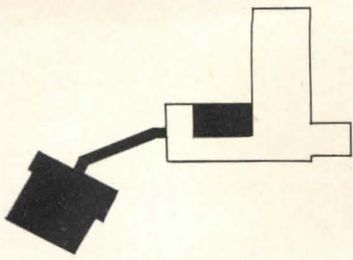


Above is home economics laboratory, with gas and electric equipment because both are in local use. Bottom right, home economics classroom, separated from laboratory by a sliding wall. Upper right, stair from lobby to second floor

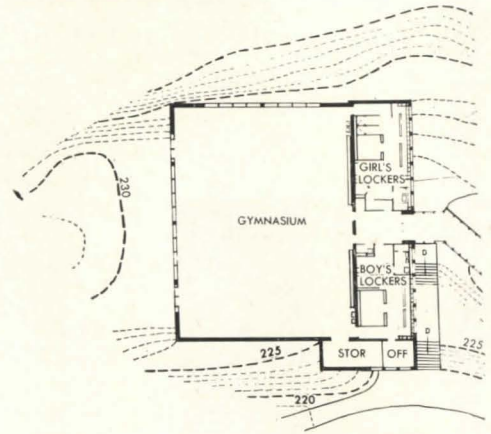
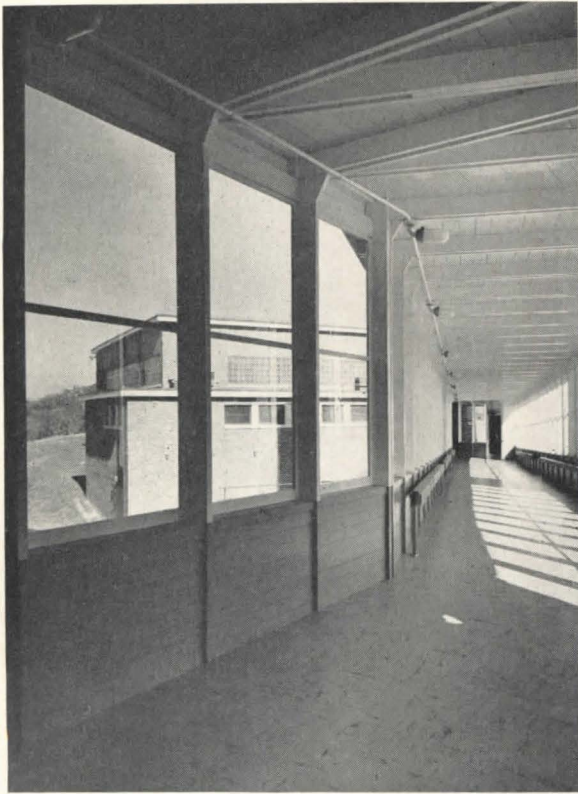


Joseph W. Molitor Photos

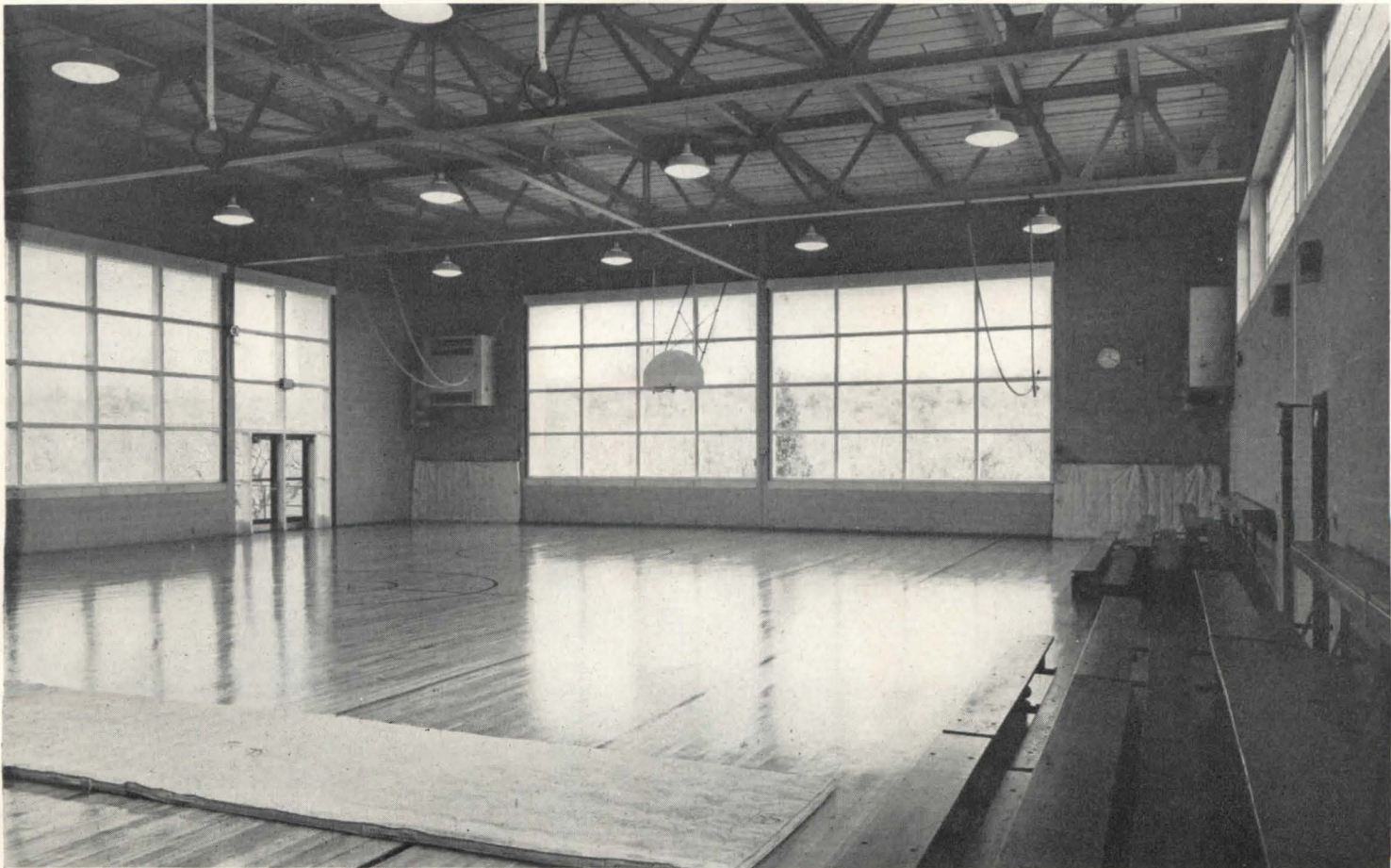


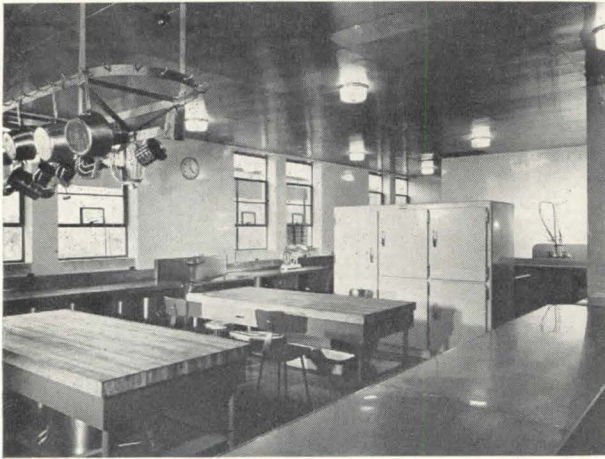


WILTON SCHOOL

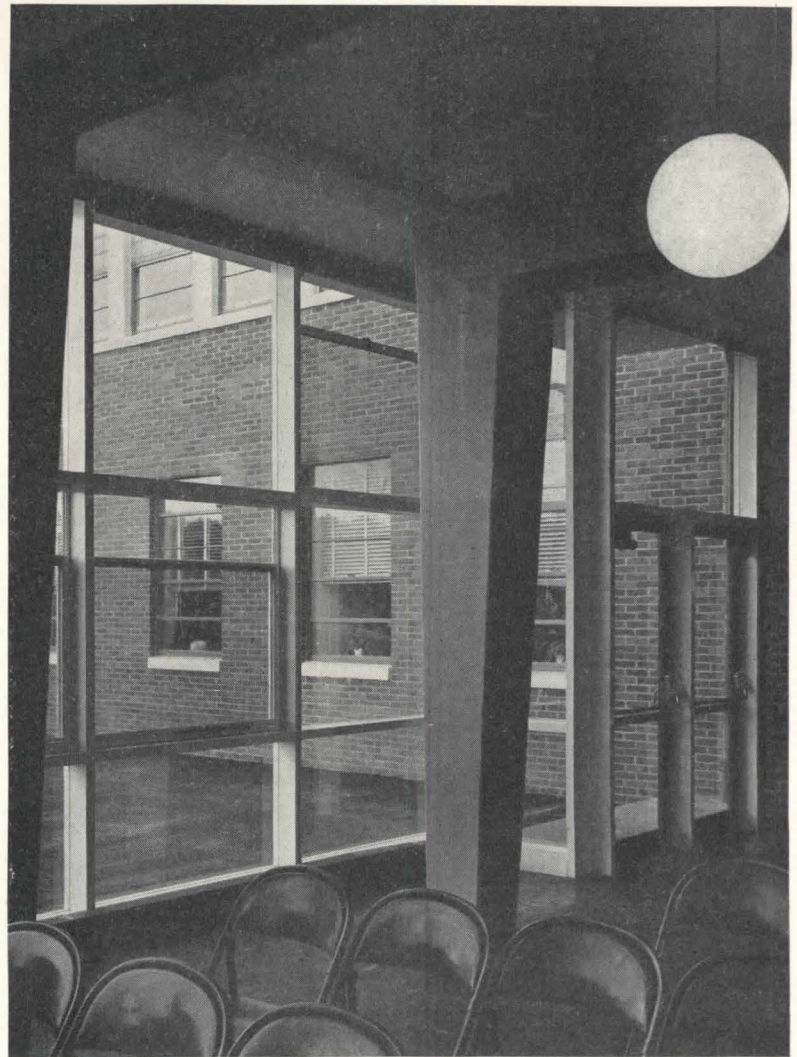


A long corridor ramps gently down the slope from school proper to gymnasium building. The gym not only accommodates school and non-school athletics; it serves also as bad-weather play space during recesses. The large expanses of fixed glass, protected by steel screens, make the most of the attractive surrounding countryside. Construction is similar to that prevailing elsewhere in school: cavity walls, steel roof framing supporting built-up roof; concrete under-floor, here with a floating maple finish floor



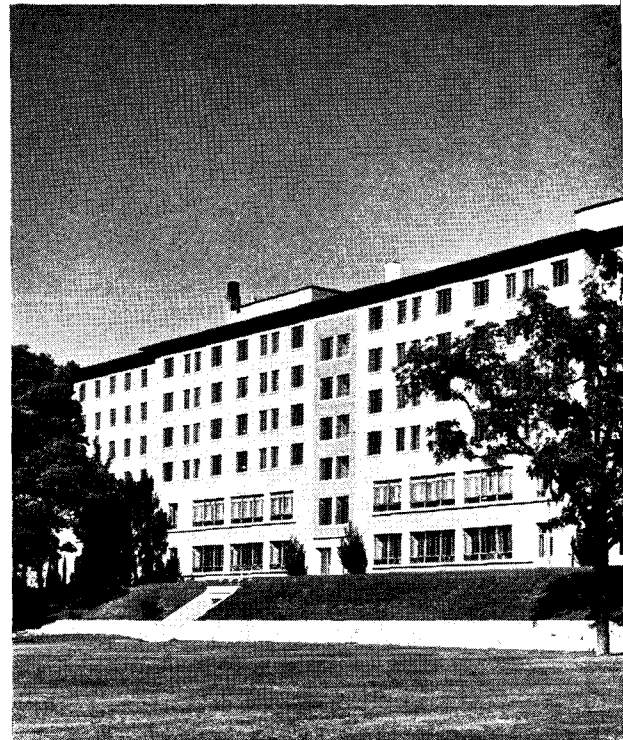
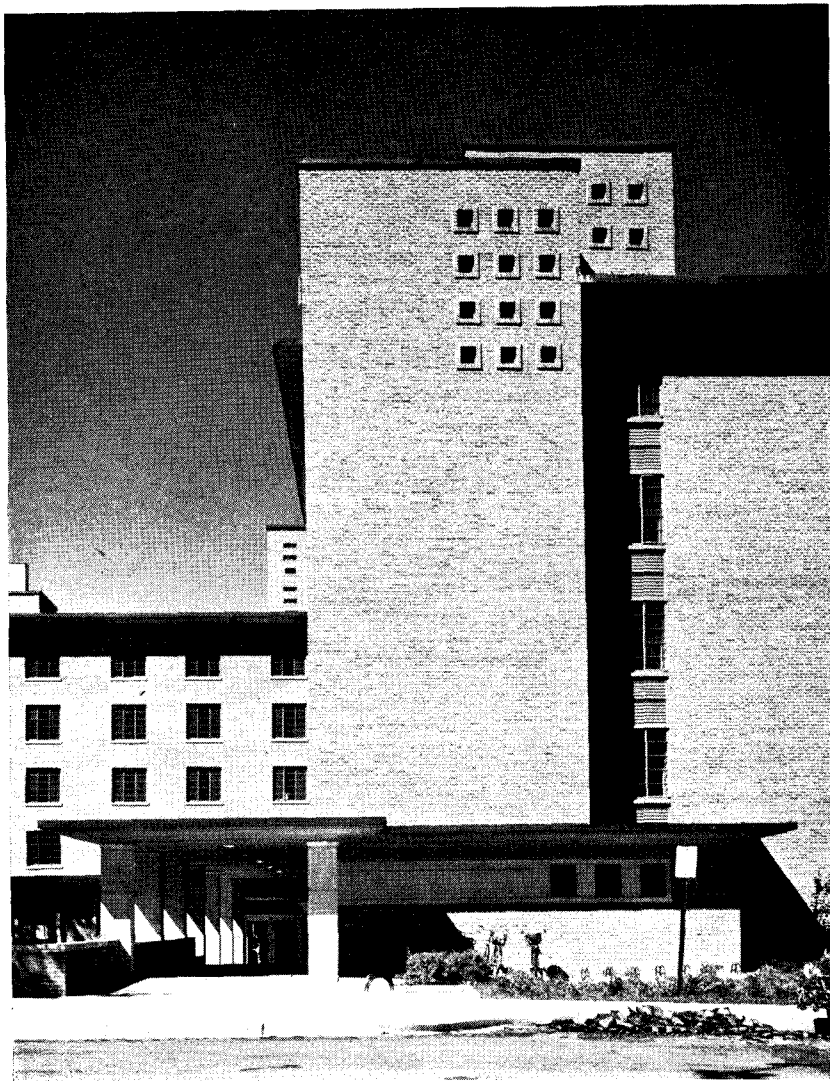


Cafeteria kitchen (above) is staffed partly by paid help, partly by school mothers, who also participate actively in many school-community functions. Cafeteria (right and below) can serve 200 at a sitting. It also becomes, on occasion, the school assembly room, meeting room and even dance hall for community and school gatherings. Stage consists of portable platforms at far end; stage curtain is hung from one of the rigid concrete frames. Heating throughout is steam, fired by burners utilizing lowest-cost grade of oil; can be converted to coal



Joseph W. Molitor Photos





Elmer L. Astleford Photos

ALICE CROCKER LLOYD RESIDENCE HALL



University of Michigan News Service Photo

Photos: top of page, left to right: entrance, West facade; entrance court. Immediately above: looking across women's playfield, with Alice Crocker Lloyd Hall visible at left



University of Michigan, Ann Arbor

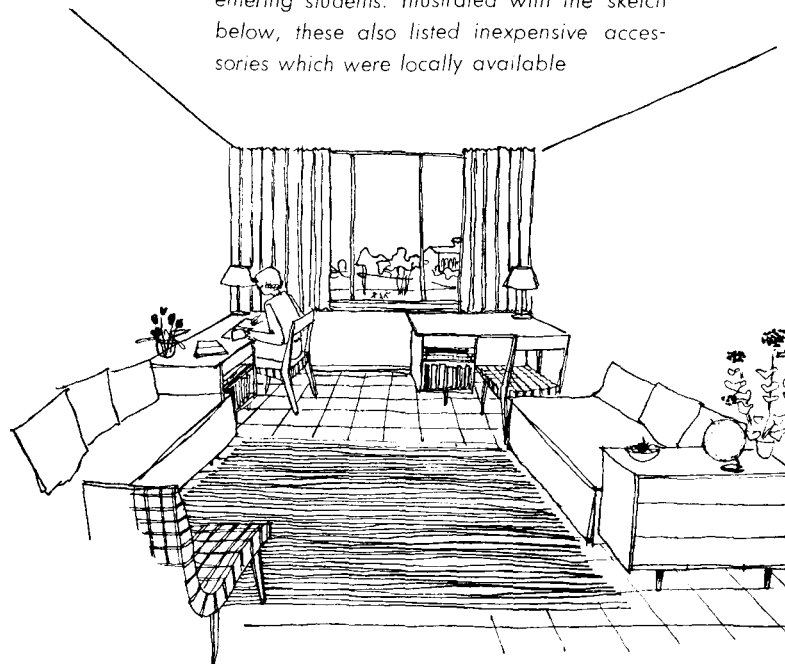
Clair W. Ditchy, Architect

Lynn W. Fry, Supervising Architect

WHEN ALICE CROCKER LLOYD HALL WAS DESIGNED, in 1945, costs of labor and materials were continuously mounting, and consequently programming was subject to constant change. Many desirable features were eliminated, others stripped of non-essentials. At the same time, the original capacity of 400 was increased to 512; while the site first chosen was abandoned and another selected along a precipitous bank which rose thirty feet from the women's playfield to a campus street.

This situation was not without advantages. Cost prohibited slate roofs or stone-brick-and-half-timber extravagances. The solution had to be simple and direct, with reliance on materials, proportions, contrast and interior color. The program required four houses or student groups with certain common facilities and others — such as director, government, living and dining rooms, etc. — repeated for each house. The site prevented symmetrical arrangement, so the capacities of the four houses are not equal. The long main block of the building faces West, overlooking the playfield. To the East, or street, side are two projecting wings flanking a pleasantly landscaped court.

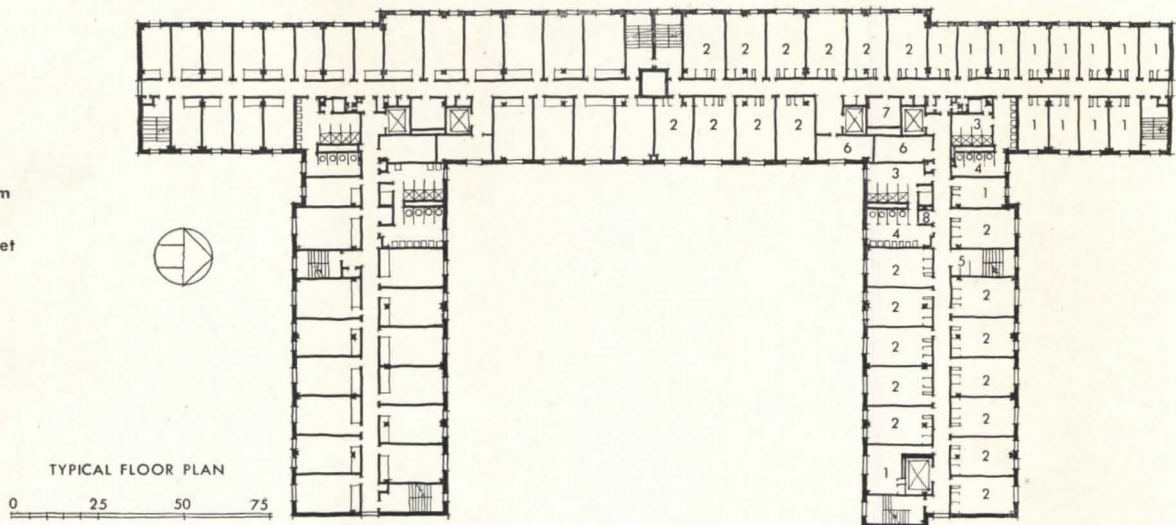
Knoll Associates, interior designers, provided suggestion sheets for the University to give entering students. Illustrated with the sketch below, these also listed inexpensive accessories which were locally available



MICHIGAN DORMITORY: TYPICAL ROOM

LEGEND

- 1 Single Room
- 2 Double Room
- 3 Bath
- 4 Toilet
- 5 Telephone
- 6 Pressing Room
- 7 Linen
- 8 Janitor's Closet



Harvey Croze Photos

After the structure was completed, Knoll Associates were engaged to select, provide and place furnishings in student rooms and public areas. Because color was important to the entire concept, the interior designers took into consideration not only walls, drapes and furniture but also asphalt tile flooring, to attain harmony and simplicity. Glass has been used generously; the plan is open; natural vistas increase the rooms' attractiveness.

Construction is reinforced concrete and steel with brick and stone exterior walls, built-up roofing with vermiculite fill insulation; and gypsum tile partitions surfaced with plaster, wood and tile. Ceilings are acoustically treated; casements are steel; entrance doors are aluminum; interior doors, flush wood. Heat is supplied by the University plant.

Landscaping: University of Michigan

Interiors: Knoll Associates

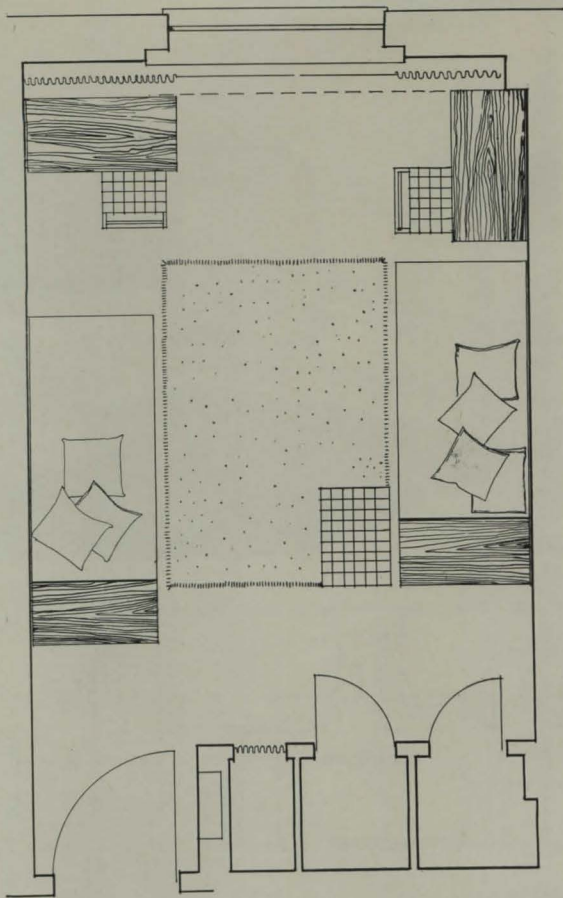
Mechanical Engineering: N. B. Hubbard

Structural Engineering: Ray W. Covey

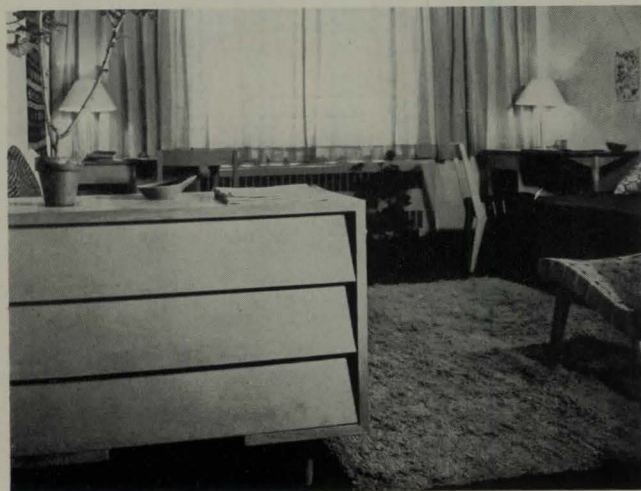
Kitchen Layout: J. Earl Stephens

General Contractor: George A. Fuller Co.

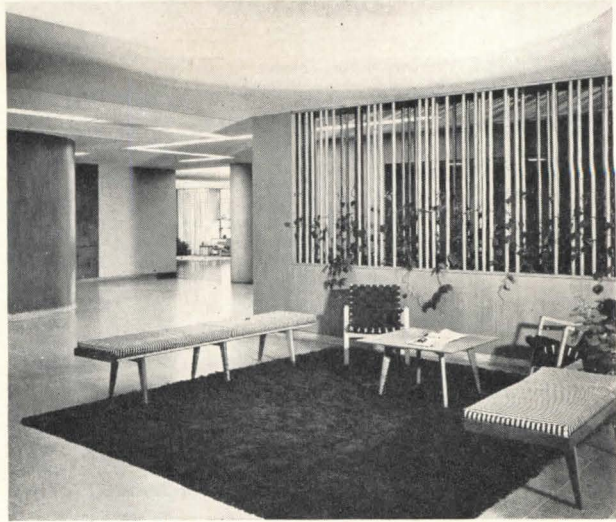
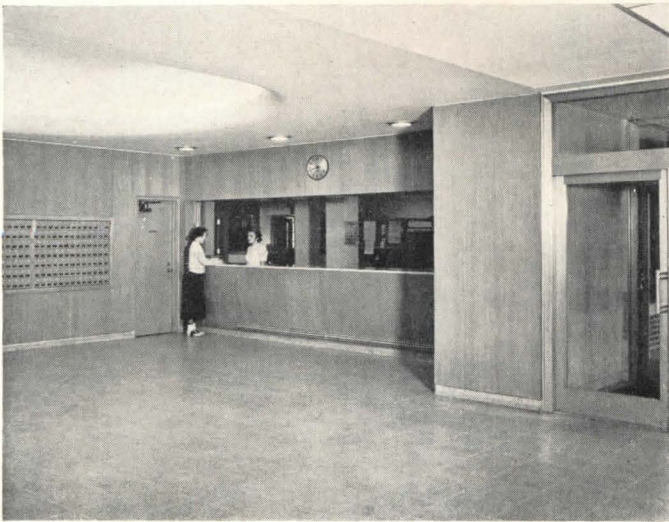




Typical double room, approximately 11½ by 14 ft (including closets), appears spacious because furniture is simple, small in scale and carefully placed. A single unit at each bed serves as headboard, night table and dresser; these face the closets, which include an alcove for bad weather clothing and shelves for accessories. Such items as the triple-purpose dresser and other economies permitted inclusion of an additional lounge chair and curtains in each room within a low budget. The five basic color schemes were picked up in asphalt tile flooring, curtains, and webbed chair seats. All walls are off-white

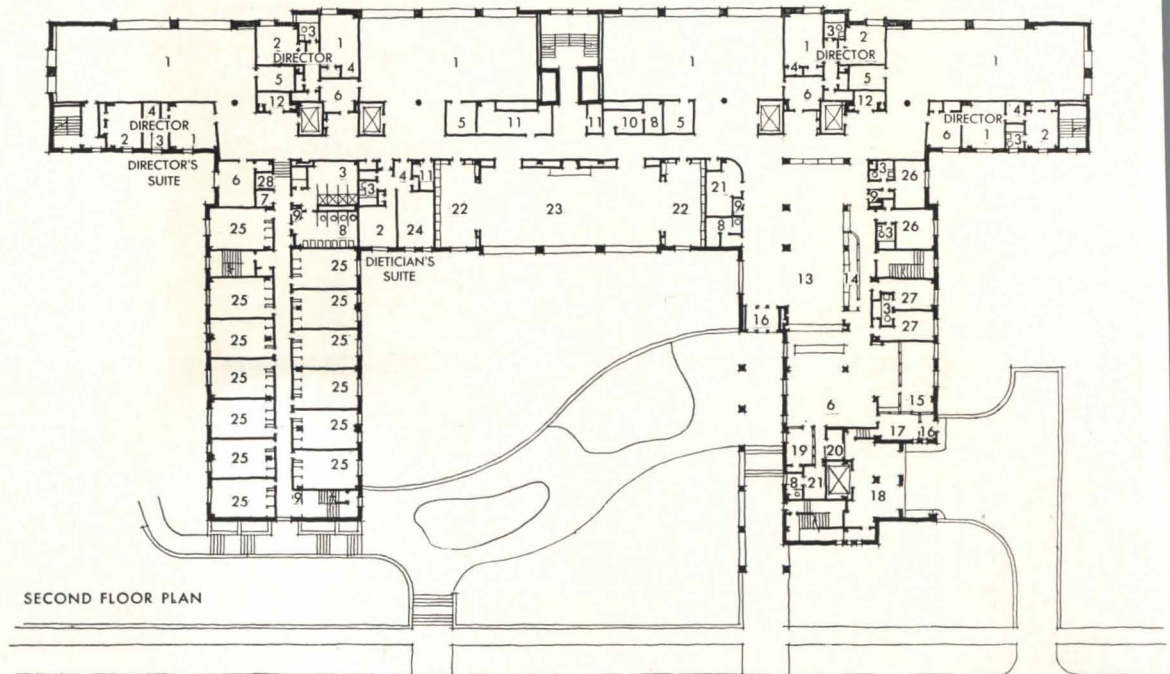


MICHIGAN DORMITORY: PUBLIC ROOMS



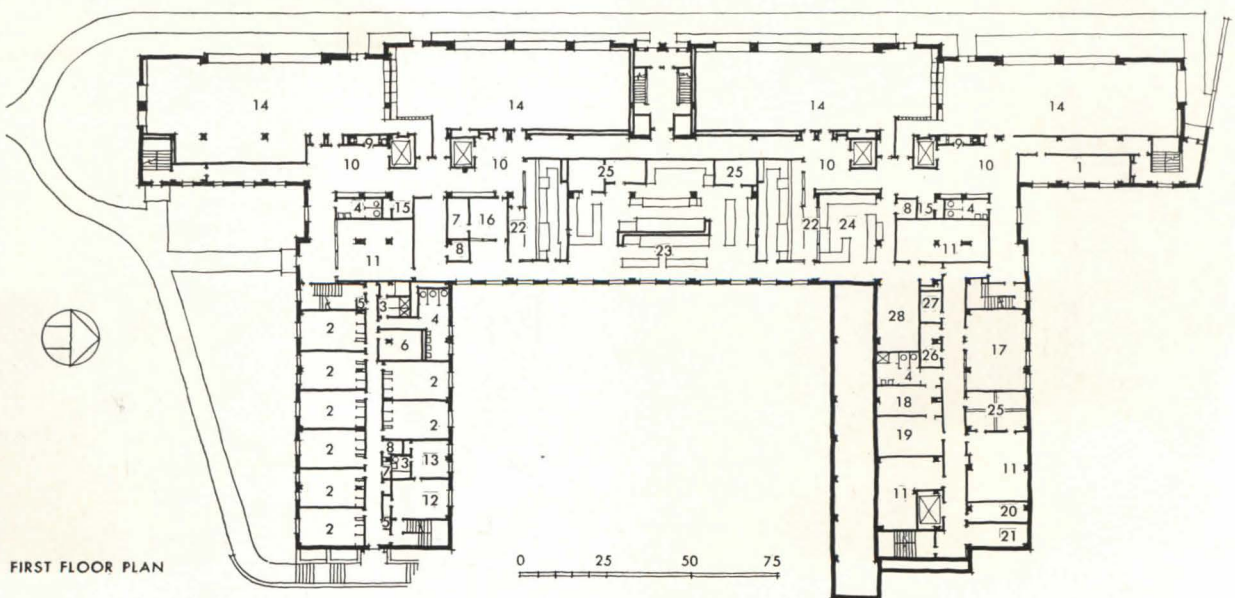
LEGEND

- 1 Living Room
- 2 Bed Room
- 3 Bath Room
- 4 Kitchenette
- 5 Tea Preparation
- 6 Office
- 7 Janitor's Closet
- 8 Toilet
- 9 Tel Booth
- 10 Powder Rm
- 11 Storage
- 12 Incinerator, Linen Chute
- 13 Lobby
- 14 Mail Boxes
- 15 Tel Switchboard
- 16 Vestibule
- 17 Receiving
- 18 Loading Room
- 19 Dietitian
- 20 Supplies
- 21 Coats
- 22 Library
- 23 Lounge
- 24 Living Rm
- 25 Double Room
- 26 Single Room
- 27 Chaperone
- 28 Laundry Closet



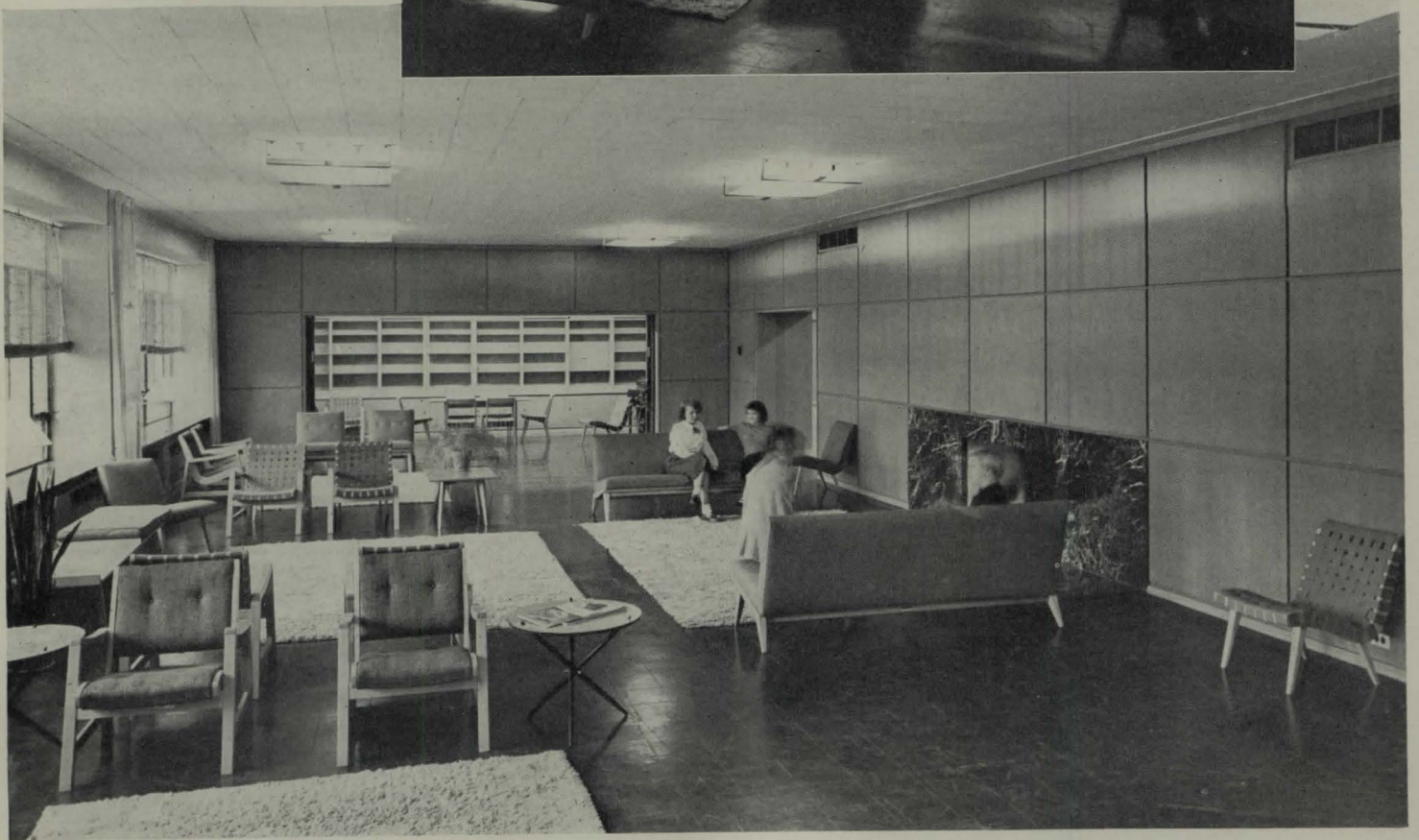
LEGEND

- 1 Study
- 2 Double Room
- 3 Bath
- 4 Toilet
- 5 Tel Booth
- 6 Pressing Room
- 7 Linen Room
- 8 Jan. Closet
- 9 Incin., Linen Chute
- 10 Lobby
- 11 Storage
- 12 Living Rm
- 13 Bed Rm
- 14 Dining Room
- 15 Book Alcove
- 16 Dietitian's Office
- 17 Help's Dining
- 18 Locker Rm—Female Help
- 19 Rest Room
- 20 Soap Storage
- 21 Waste Trucks
- 22 Serving
- 23 Kitchen
- 24 Dishwashing
- 25 Refrigerator
- 26 Can Washing
- 27 Towel Drying
- 28 Pot and Pan Washing



Photos: far left, main lobby; left, looking from lobby through an elevator hall to a living room; right, one of the living rooms; center below, main lounge with library alcoves at ends

Elmer L. Astleford Photos



Kitchen has two serving rooms (photo at right), one at each end; each serves two dining rooms. Circulation has been carefully studied throughout building. Passenger elevators, one per house, discharge on main (second) floor into a wide passage from which public rooms are reached. Each living room has its individual color scheme, expressed in upholstery fabrics (washable plastics, durable cottons), and floors and walls. Each of the four houses has its own entrance, used during daytime; for protection and control only the main entrance is open at night



GOOD ARCHITECTURE PAYS DIVIDENDS

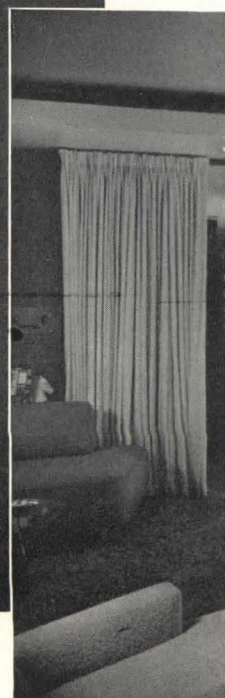
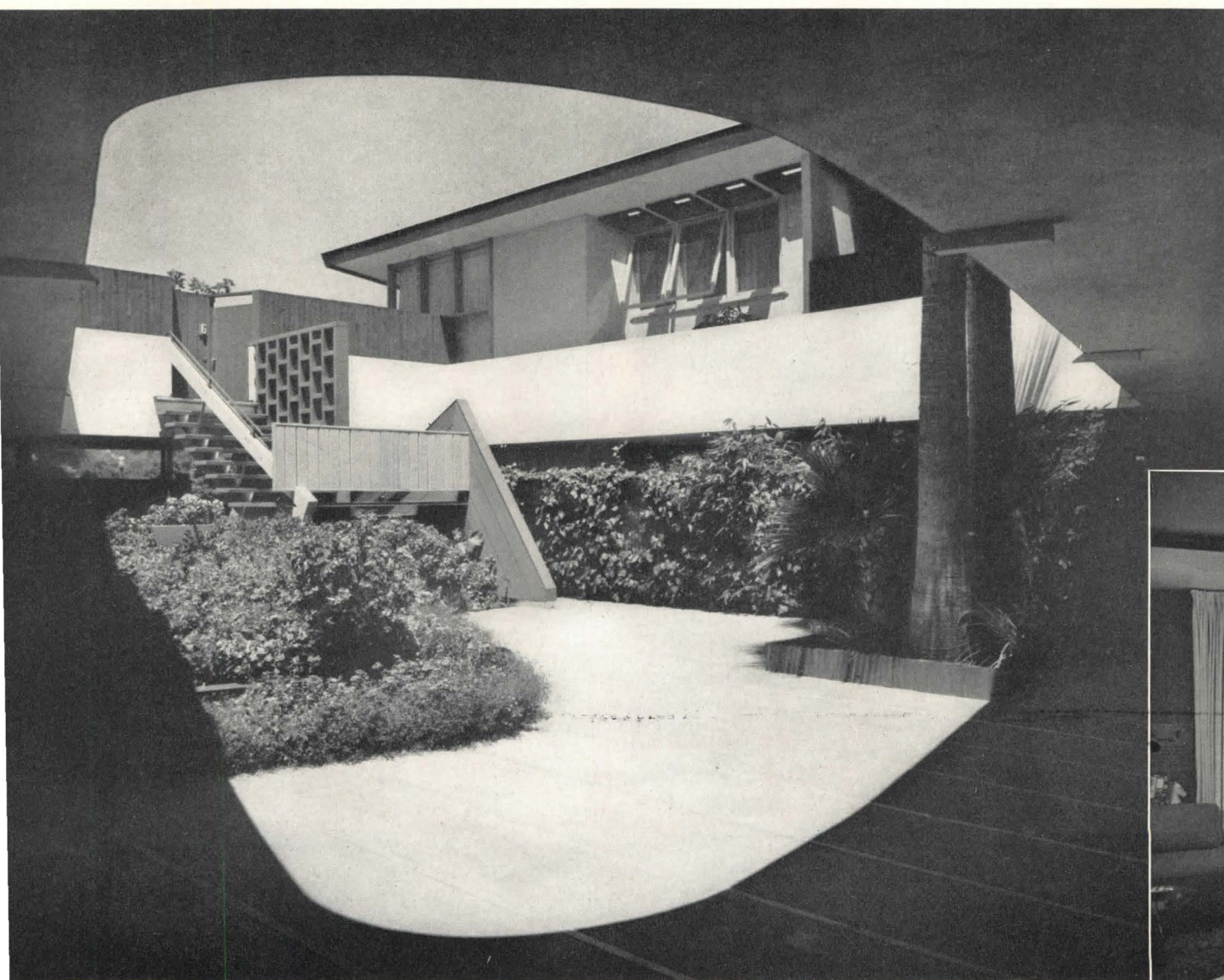
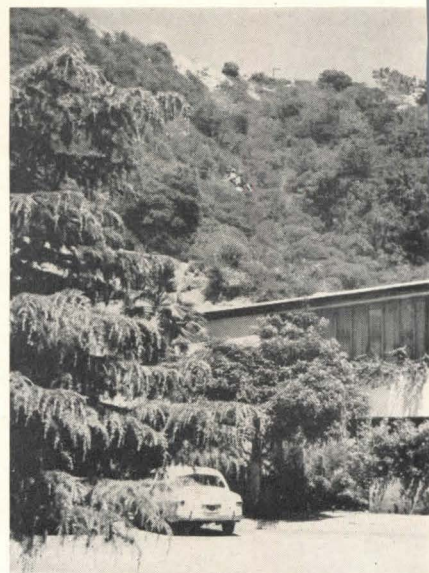
Bel Air Garden Apartments, West Los Angeles, Calif.

A. Quincy Jones, Jr., Architect

Edgardo Contini, Structural Engineer

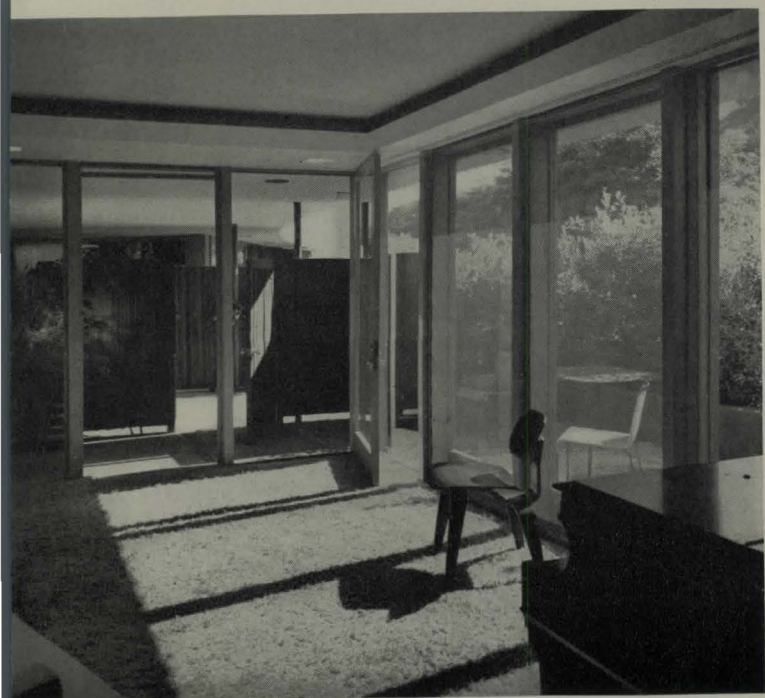
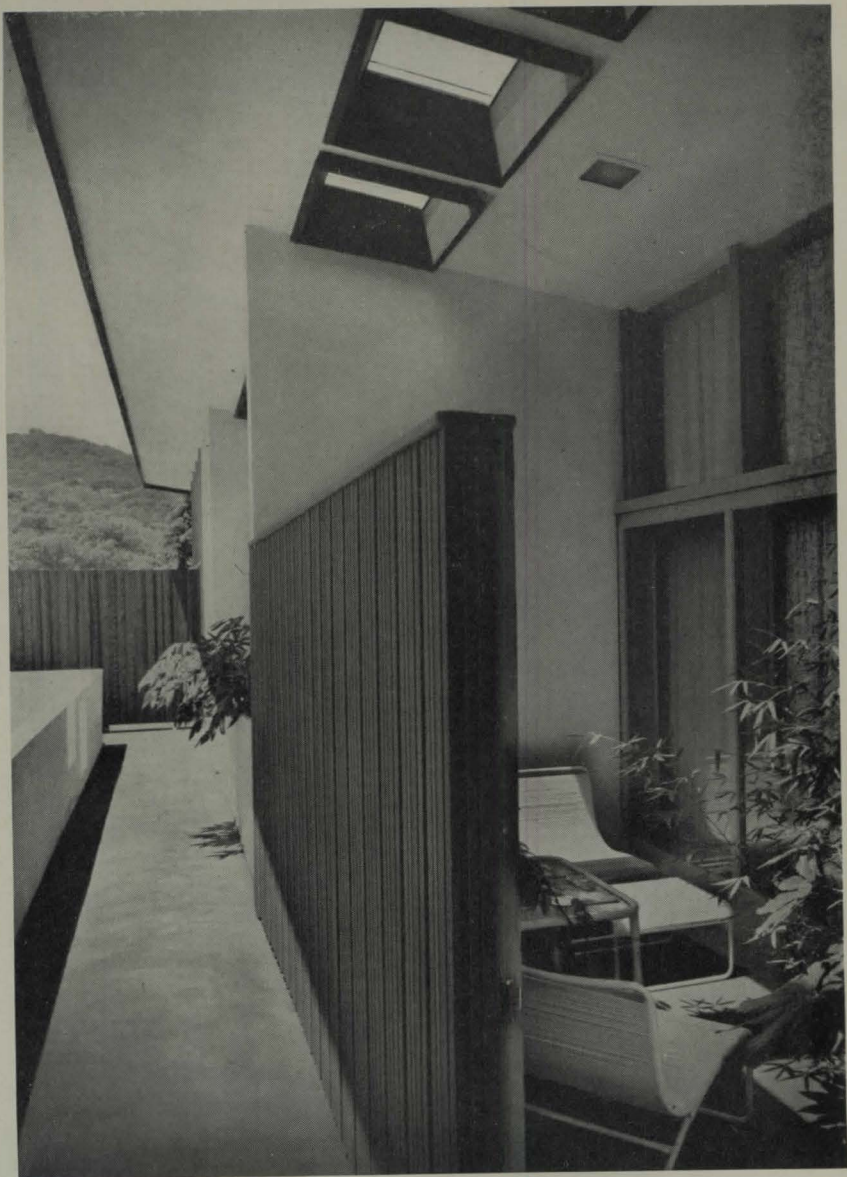
Dickason Construction Co., Contractor

Julius Shulman Photos





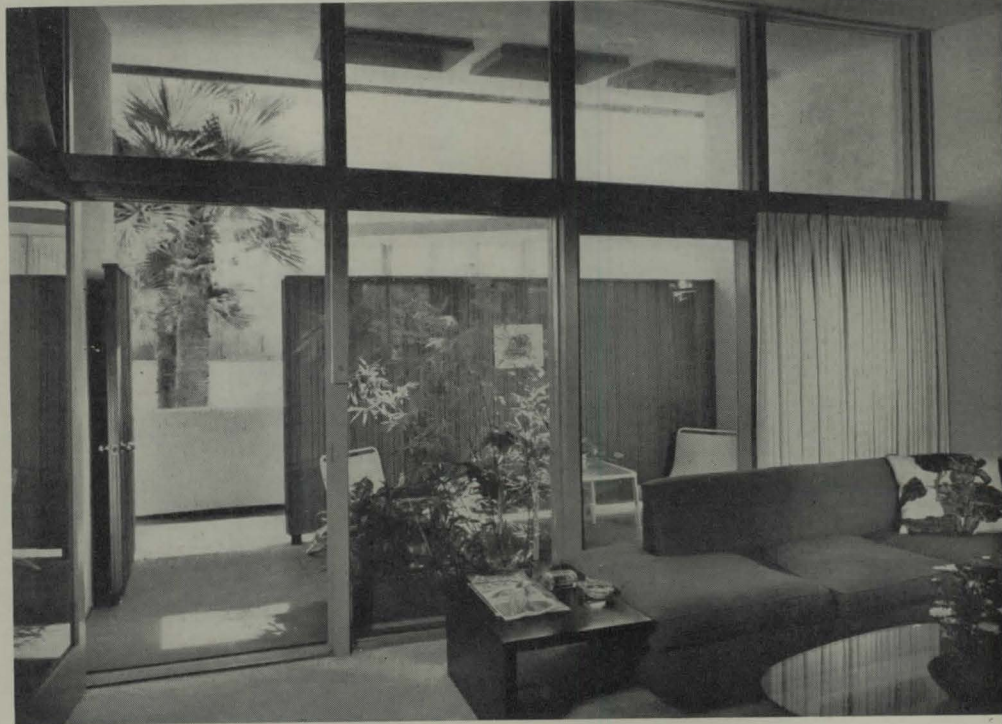
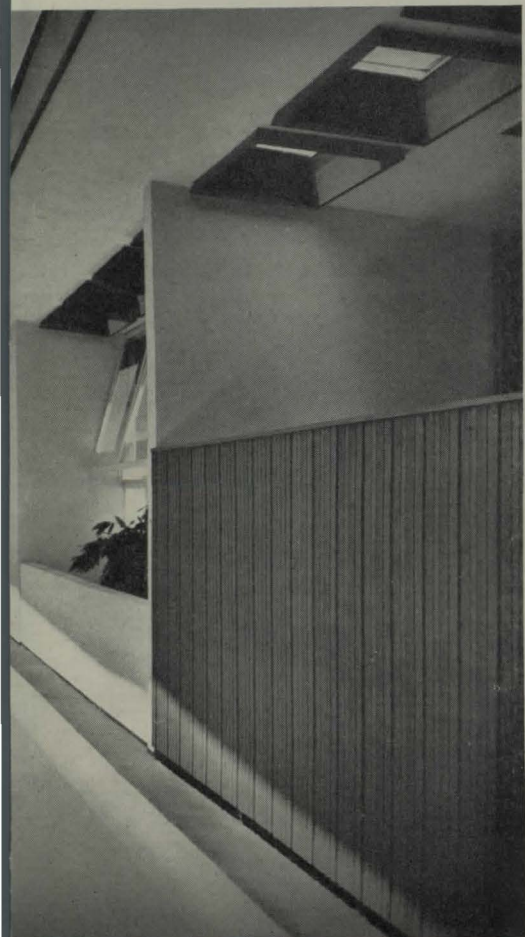
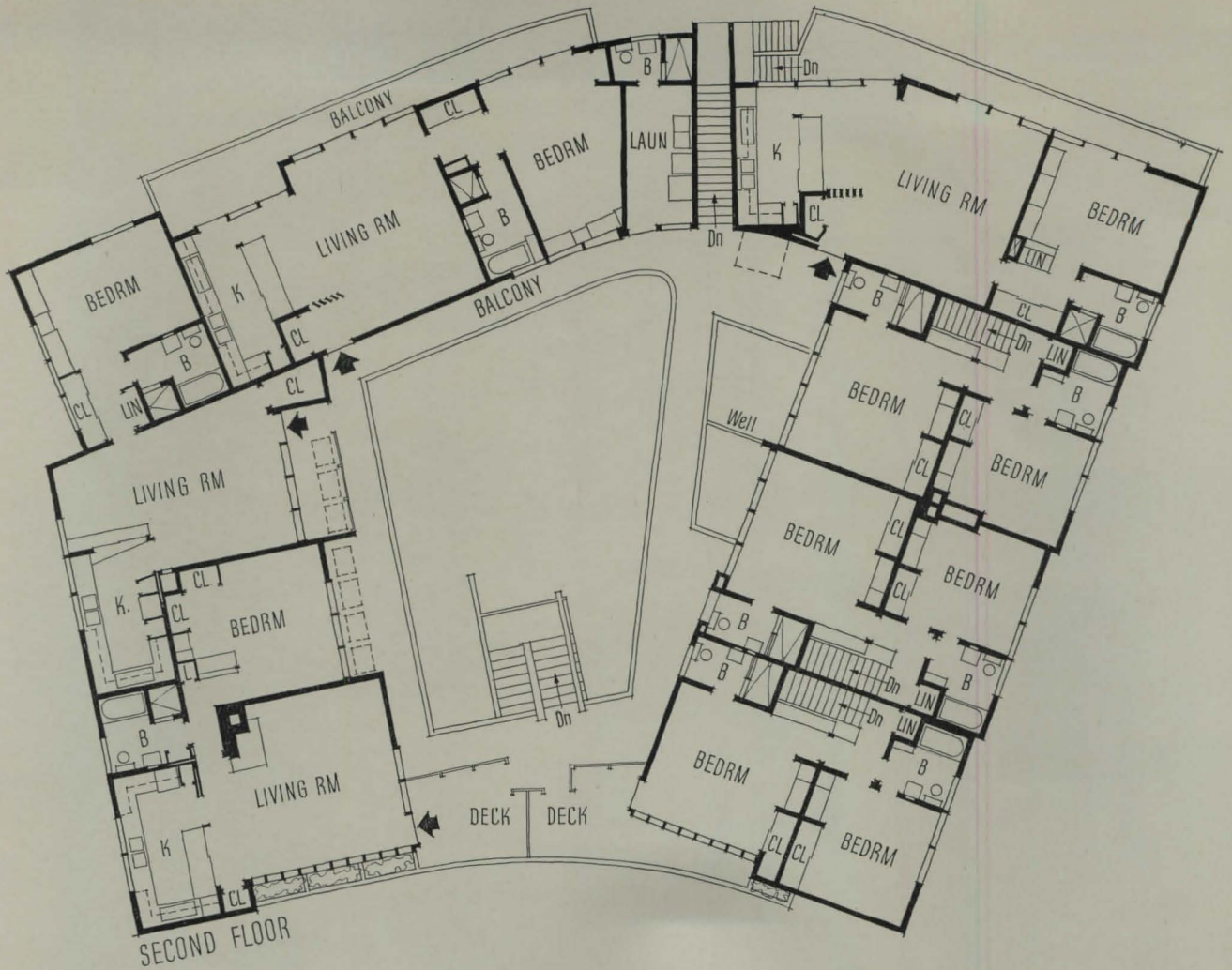
Even such imponderables as a hilly site and mild climate are turned into revenue producing assets in this nine-unit apartment house. Sunny open air terraces (at right in photo below), balconies (right), and a central court (left) afford outdoor living areas, increase sense of spaciousness. Judicious use of screens gives privacy, permits occasional vistas



THAT CAREFUL ARCHITECTURAL PLANNING PAYS DIVIDENDS is evident in this California apartment house: after a year's occupancy, the project shows a 20 per cent of gross investment return, contrasted with 12 per cent usually expected.

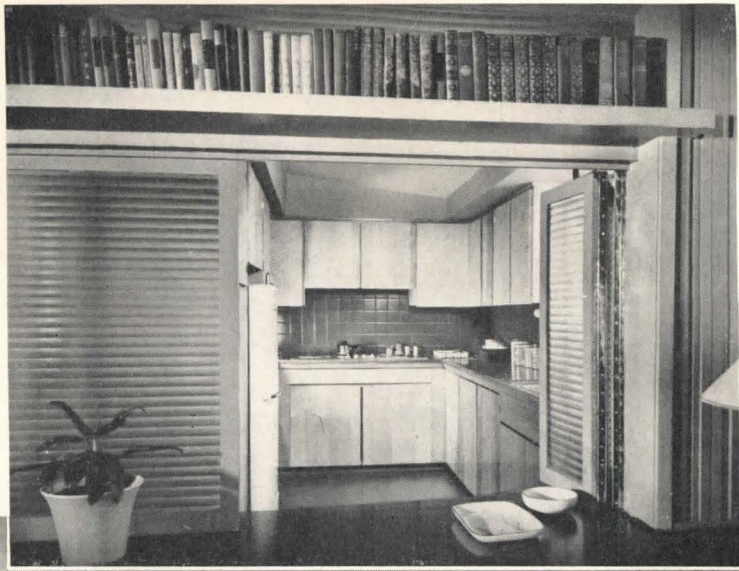
The owners desired to build a "luxury" apartment house on a relatively small, expensive site. After analyzing costs of property, construction and improvements, it was determined that six one-bedroom and three two-bedroom units were required to insure a safe investment. To justify the high rent, the architect was faced with the problem of providing a sense of space, a garage, and at least a minimum private outdoor living area for each unit.

The final solution incorporates many amenities for pleasant living within the confines of the limited plot. The building centers around a common garden, which serves as entrance lobby and as space for entertaining large groups. In addition, each unit has a small terrace, screened by a 6-ft fence for privacy. All landscaping for the project was designed by the architect.



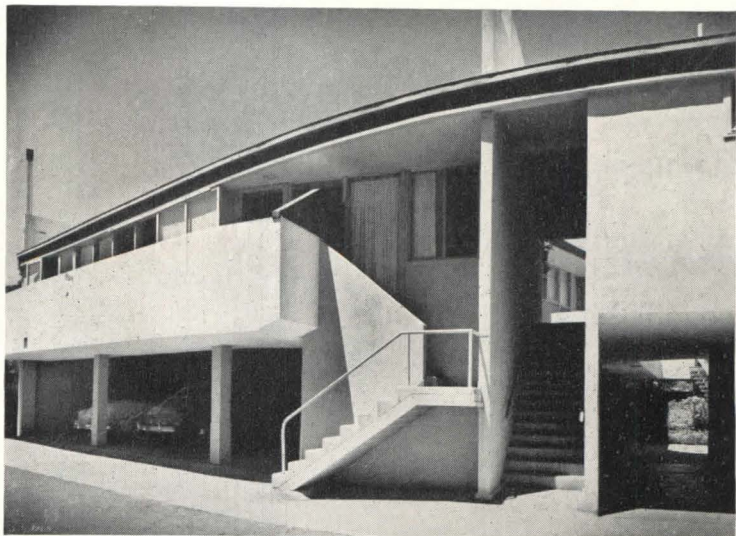
Wooden screens, integrated with building design (left), shield apartment entrances and extend usable living space (above). Openings in overhangs filter sunlight into living rooms

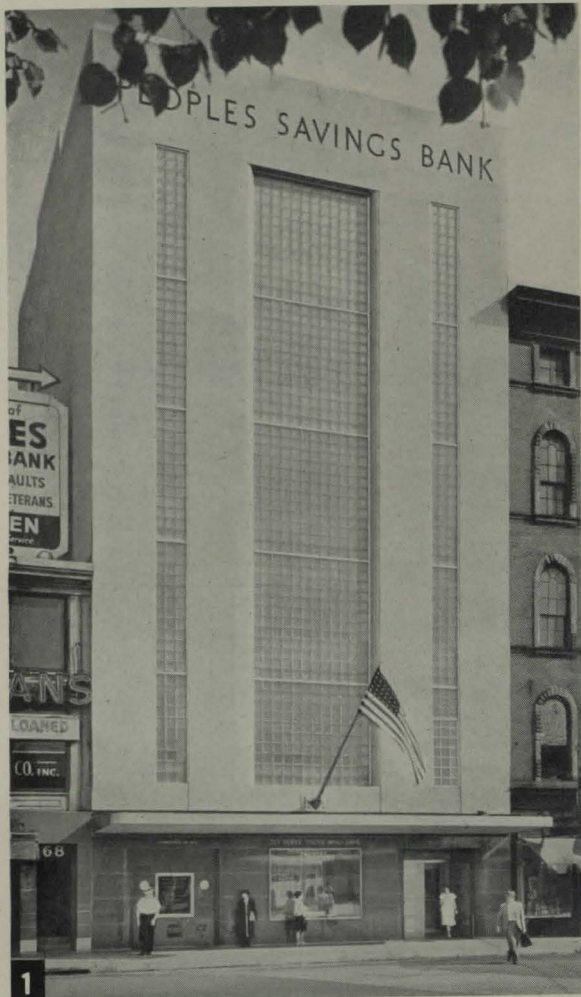
Pass windows and broad counters, as in this typical apartment (right and below), facilitate meal serving. Kitchen cabinets are finished in wood, walls are tile. Each apartment is equipped with refrigerator and built-in range and oven



Julius Shulman Photos

Service entrances and a garage for each apartment are located off the alley (right). The building has one laundry that can be scheduled for use. Each tenant is allotted 50 sq ft of storage area in the basement. The owner provides garden maintenance and limited maid service, and will also furnish an apartment if desired. Tenant reaction to the building and its operation is very favorable





Sigurd Fischer Photo



Phillip Fein Photo
Joseph W. Molitor Photo



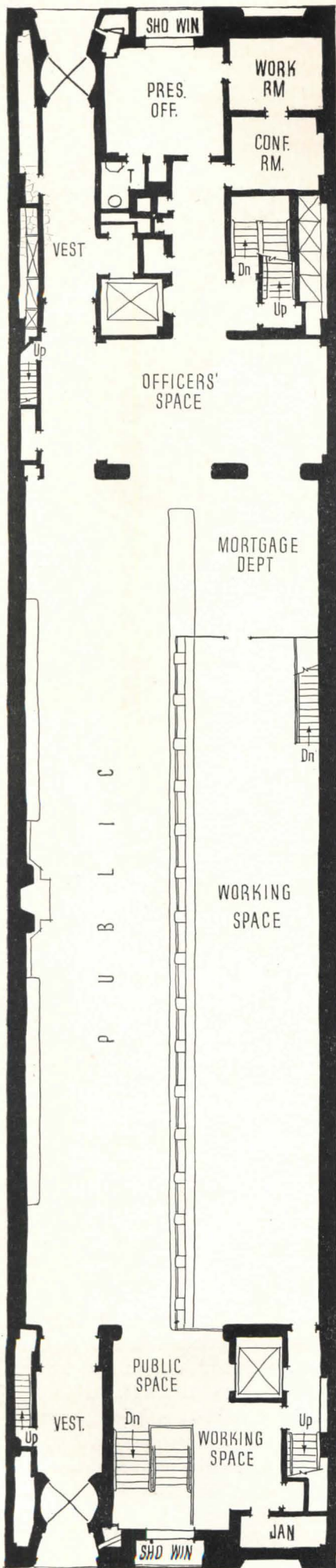
A COMPARATIVE GLANCE AT THREE NEW BANKS

1. *People's Savings Bank*
Providence, Rhode Island
Cram & Ferguson, Architects-Engineers
2. *Central Branch, Continental Bank & Trust Co.*
Salt Lake City, Utah
Snedaker & Macdonald, Architects
3. *Broadway Savings Bank*
New York City
Harold R. Sleeper, Architect
Ackerman & Ramsey, Associates

NOT SO LONG AGO the emphasis in bank design was on the monumental facade and the lofty interior considered essential to impress the general public with the institution's solidity. Banks were cold, unfriendly, over-ornamental, and quite frequently impractical from the public's point of view.

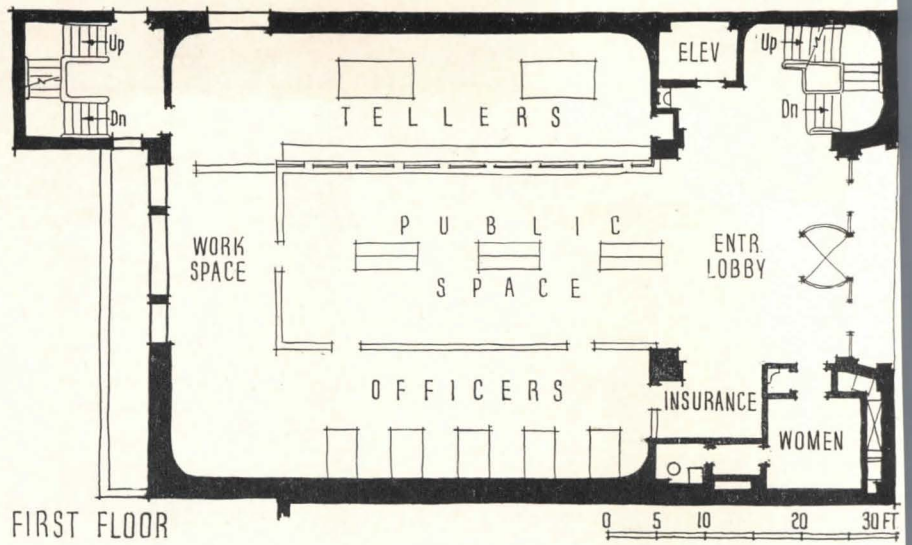
In recent years there has been a strong trend away from that old tradition. The banks being built today are straightforward expressions of their function; they are out not to impress the public but to attract it.

The three banks shown above and on the following six pages are far apart geographically. They are quite different in shape and size. Yet all three have treated their public areas, safe deposit facilities, and general working arrangements in much the same way. For purposes of comparison, they are shown here as a unit.



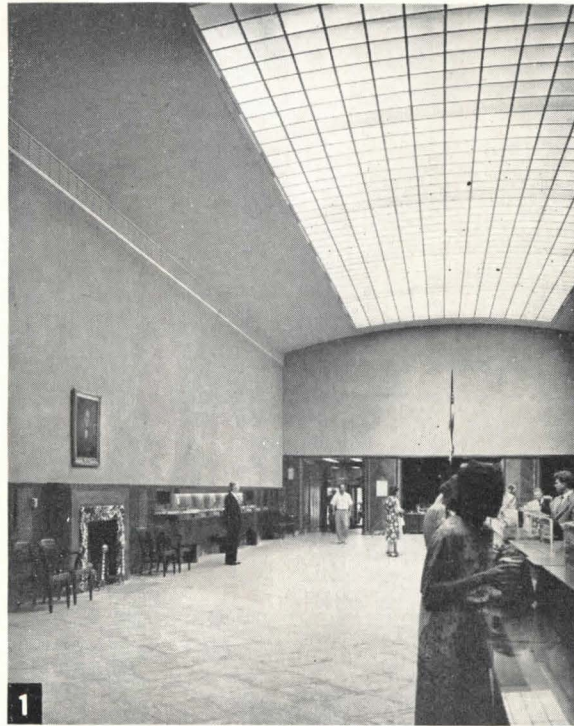
FIRST FLOOR

PLAN 1

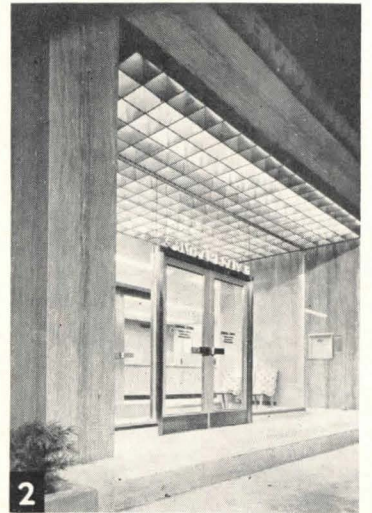


FIRST FLOOR

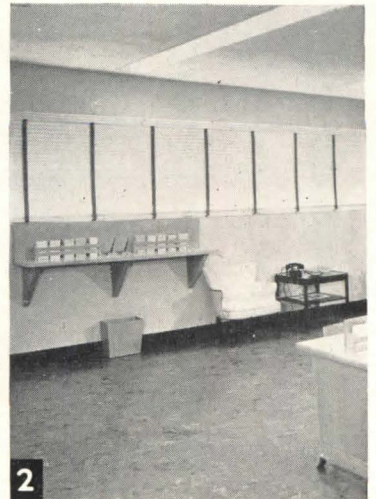
PLAN 3



Sigurd Fischer Photo



Philip Fein Photos





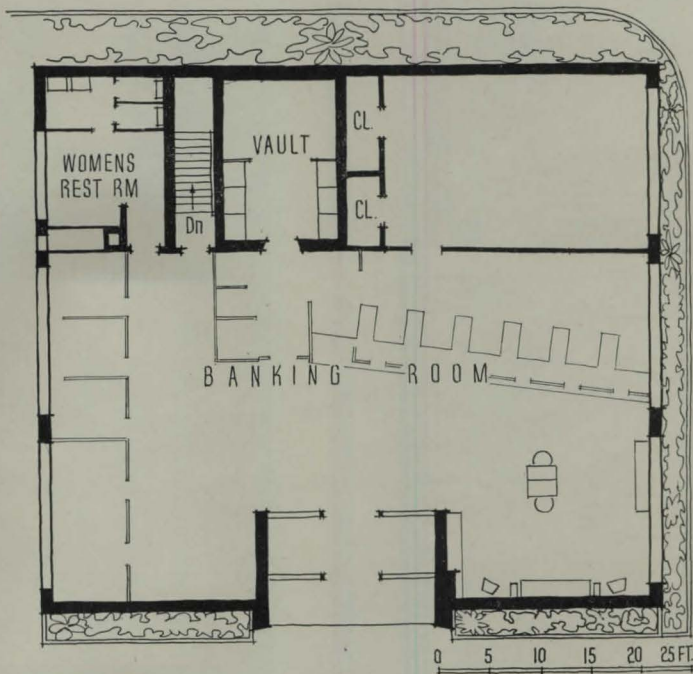
3

THREE NEW BANKS: PUBLIC SPACE

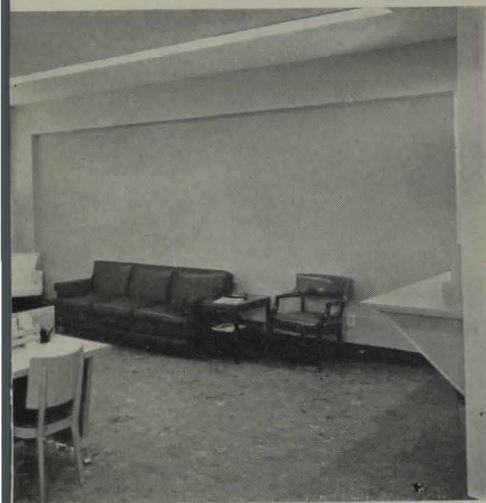
Despite the difference in overall shape of these three banks, each has a more-or-less rectangular public area, visible in its entirety from the main entrance. There is no island of tellers' cages around which the customer must play hide-and-seek, but instead a neat row of tellers' windows ranged along one side. Grille work is happily missing. Lighting is good, public desk and waiting space is convenient, ceilings are acoustically treated. Access to all facilities is obvious and easy. Of particular note are the skylighted ceiling of the People's Savings Bank (1) and the angled tellers' desks of the Continental Bank & Trust Co. (2).

Joseph W. Molitor Photo

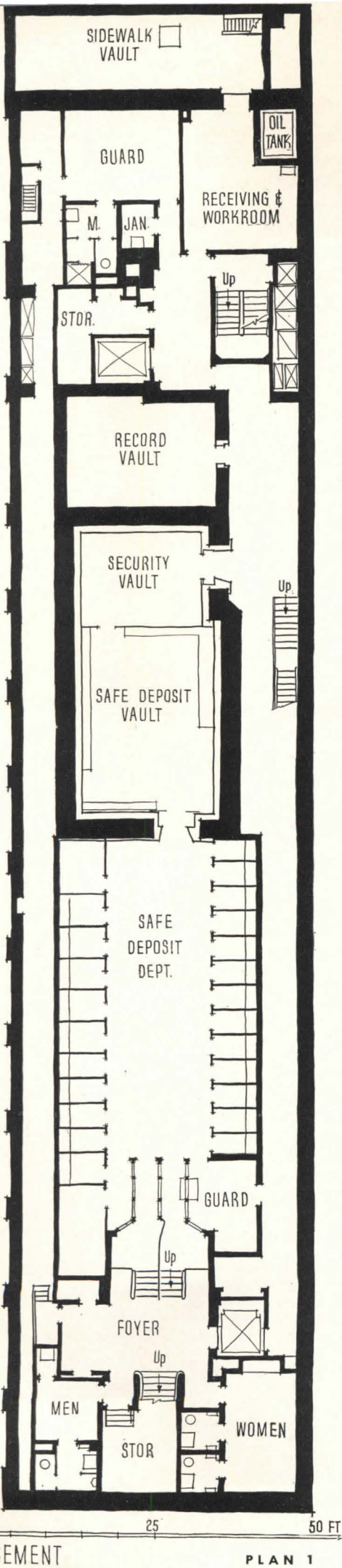
- 1. *People's Savings Bank*
- 2. *Continental Bank & Trust Co.*
- 3. *Broadway Savings Bank*



PLAN 2

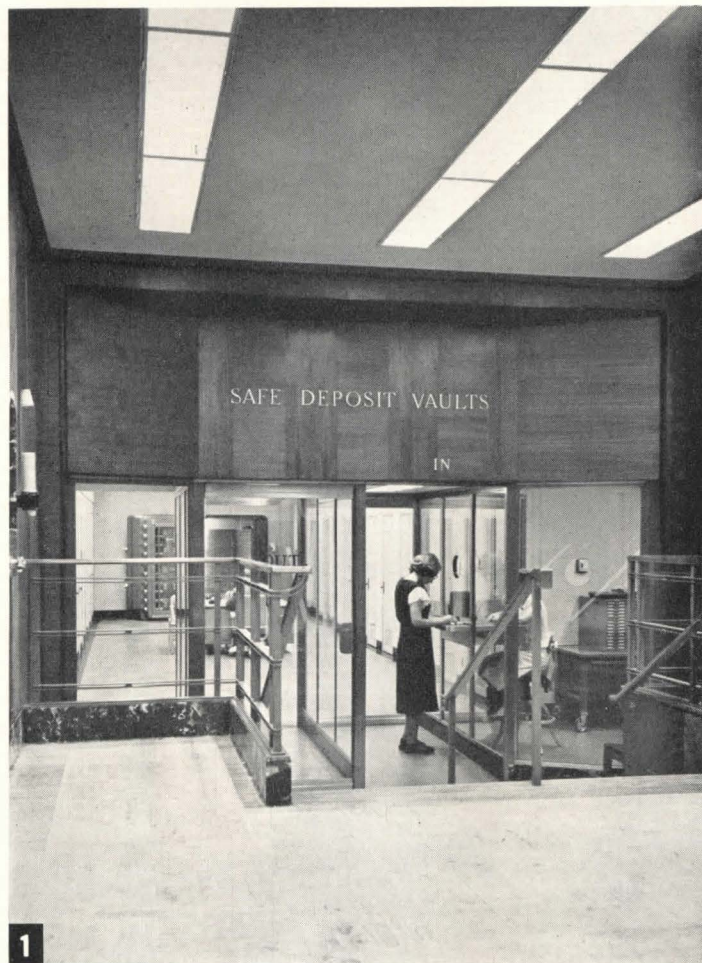
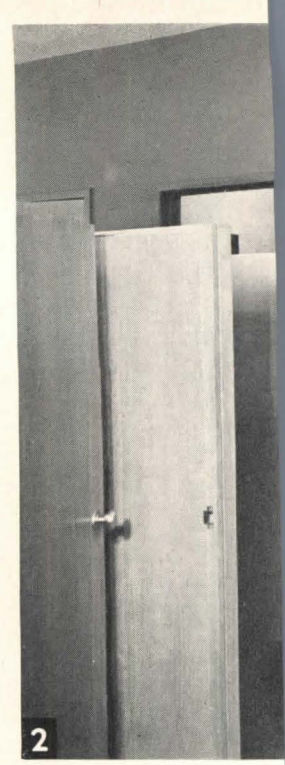


2



Because Providence has had several severe floods in the past (the 1938 hurricane caused a great deal of flood damage), special precautions were taken in the design of the People's Savings Bank (1). The architects describe the lower portion of the building as a heavy waterproof concrete box extending well above flood level. The four openings in the walls of the "box" — a show window and a door on each street front — are equipped with water-tight doors which are closed after banking hours or in case of flood. Each entrance doorway also has a low portable metal dam for use in case of shallow street floods, to protect the building and still permit access to it.

Should water seep in despite all these precautions, it would drain into a pit in the sub-basement and be removed by a waterproof electric pump capable of handling 250 gpm. A larger pump, with a capacity of 600 gpm, would go into action automatically if the smaller one should be overtaxed. The building has an emergency power plant on the 6th floor to provide power if the usual sources should fail.



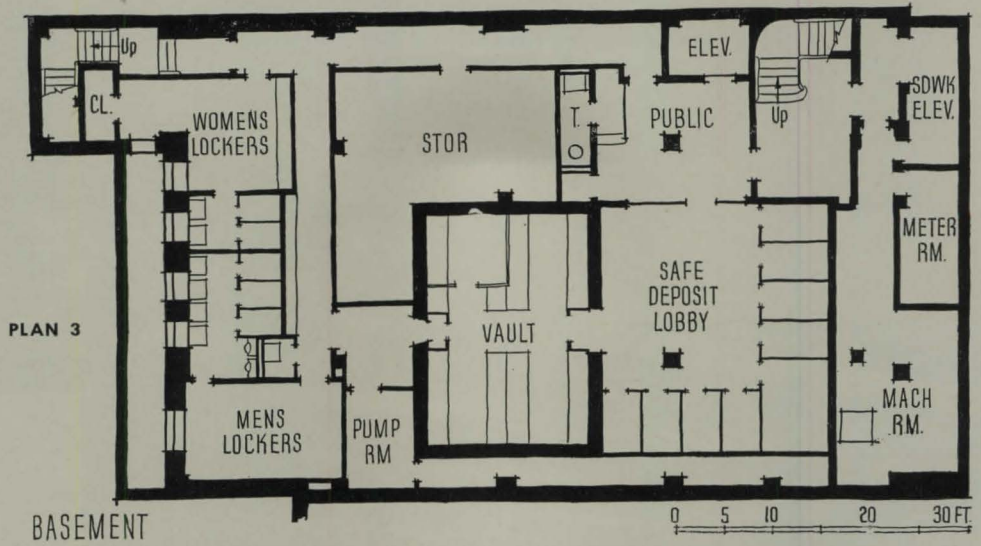
Sigurd Fischer Photo



Philip Fein Photo

**THREE NEW BANKS:
SAFE DEPOSIT FACILITIES**

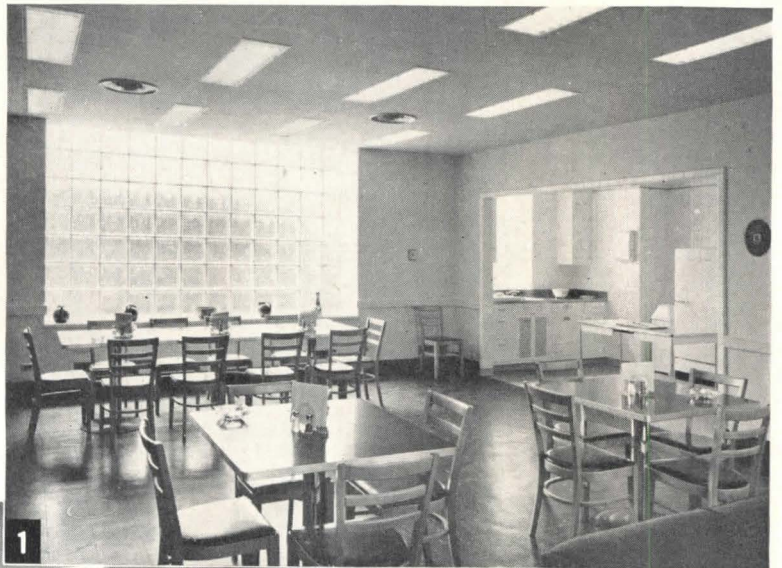
1. *People's Savings Bank*
2. *Continental Bank & Trust Co.*
3. *Broadway Savings Bank*



THREE NEW BANKS: WORKING SPACE

Space allotted to bank employees has been carefully worked out in all three plans. Both of the larger buildings (1, 3) have well-lighted and pleasantly decorated employee dining rooms and kitchens on upper floors. All three banks have easy access from public to working areas, and conveniently placed officers' platforms. The smallest of the trio (2) has a compact built-in tellers' area.

1. *People's Savings Bank*



Sigurd Fischer Photos





3. Broadway Savings Bank



Joseph W. Mollitor Photos

**2. Continental Bank
& Trust Co.**

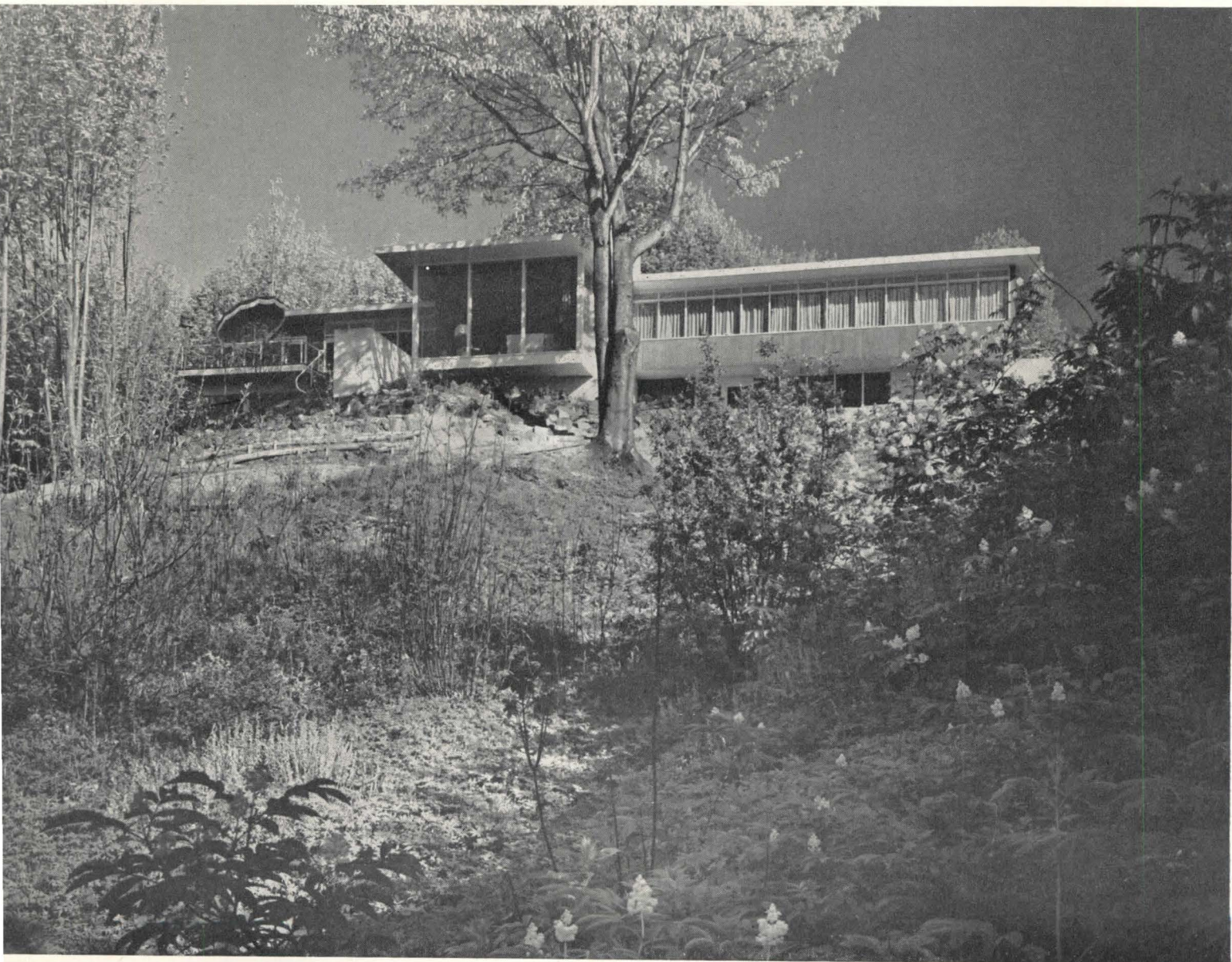


Phillip Fein Photo

HOUSE IN THE PACIFIC NORTHWEST

Residence of Mr. and Mrs. Trevor Roberts

Charles R. Pearson Photos



Young & Richardson

Architects & Engineers

Blue Ridge, Washington



THE OWNERS OF THIS RESIDENCE facing Puget Sound had an unusually long list of special requirements: the house must be of straightforward contemporary design and must have an office-display room for Mr. Roberts, a salesman; it must have a shop for him, since his hobbies are woodworking, carpentry and landscaping; it must have four bedrooms (the family consists of three adults and two children), a playroom with outdoor terrace, and a dining patio. Since the site is a sloping wooded hill overlooking Puget Sound and the Olympic Mountains, the house obviously also had to be oriented toward the view.

The plan which resulted (page 133), and the way in which it was carried out, subsequently brought Architects Young & Richardson an award from the Washington Chapter, A.I.A. Living and dining rooms, three bedrooms and the kitchen all face the view; so does the large

recreation room in the basement. A shop of generous proportions opens through the carport directly to the exterior. The office is strategically located just within the main entrance, virtually cut off from the rest of the house, and accessible from the shop, in effect giving Mr. Roberts a separate suite for his business and hobby requirements. The lower terrace has a built-in barbecue, and doubles as the play terrace and dining patio; the recreation room opens to it.

The house is of wood frame construction on a concrete foundation. Exterior walls are handsplit cedar siding, natural finish. The built-up roof is topped off with white marble chips to give overlooking residences a pleasant aspect — the first roof in the Northwest, the architects report, to be so treated for such a purpose. Heating is hot water panel in the concrete slab and hot water convectors in bedrooms and recreation room.

The sloping site permitted a basement recreation room over 30 ft long, opening to a paved terrace. The owner did much of the landscaping himself





Above: a brick walk curves under living room windows toward lower terrace

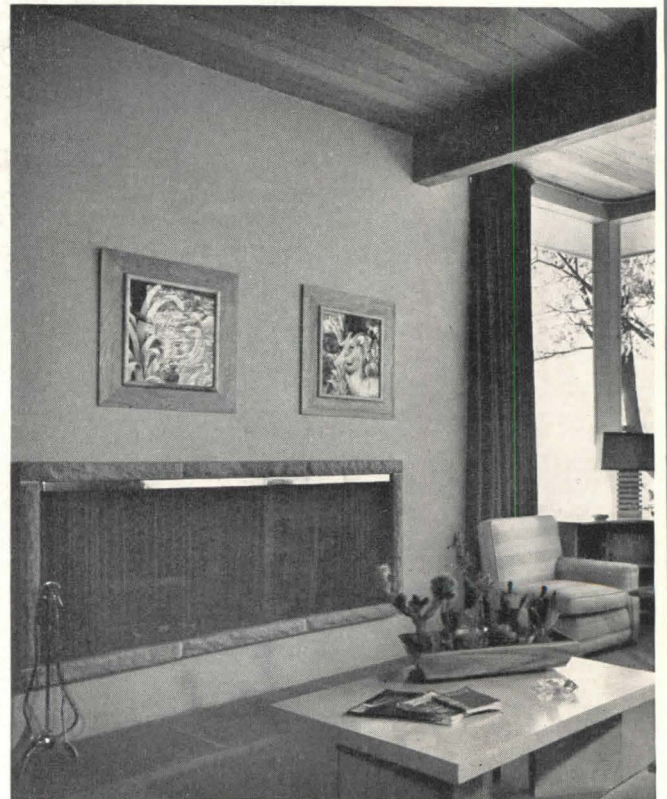
Above right: upper terrace can be reached directly from living room and breakfast alcove as well as from lower level, but is completely secluded

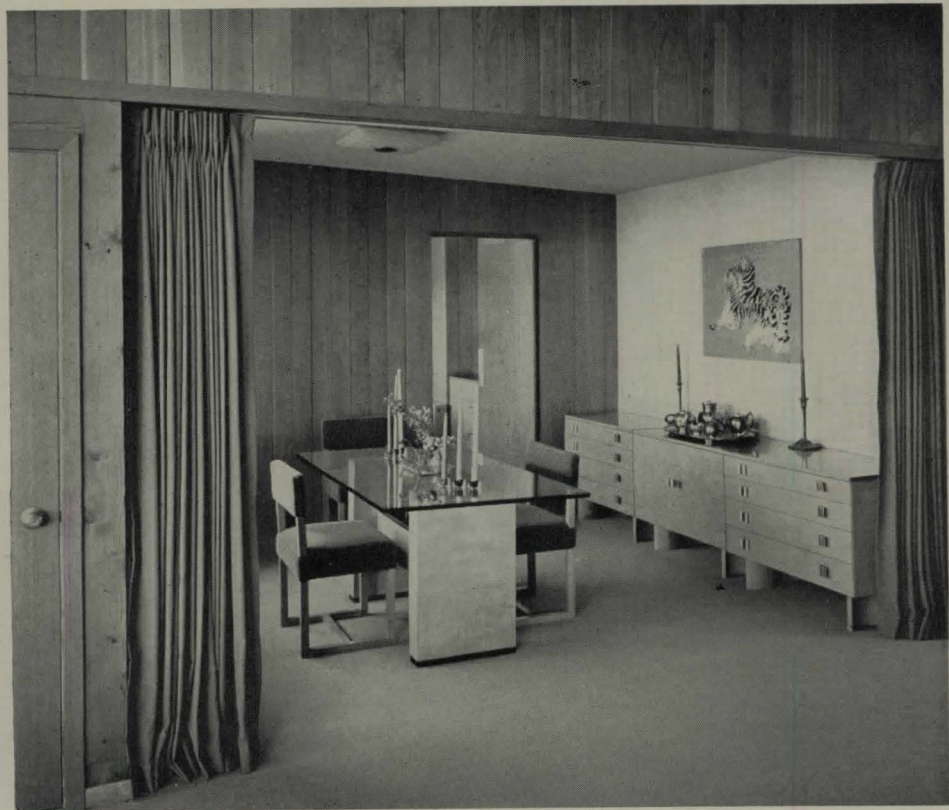
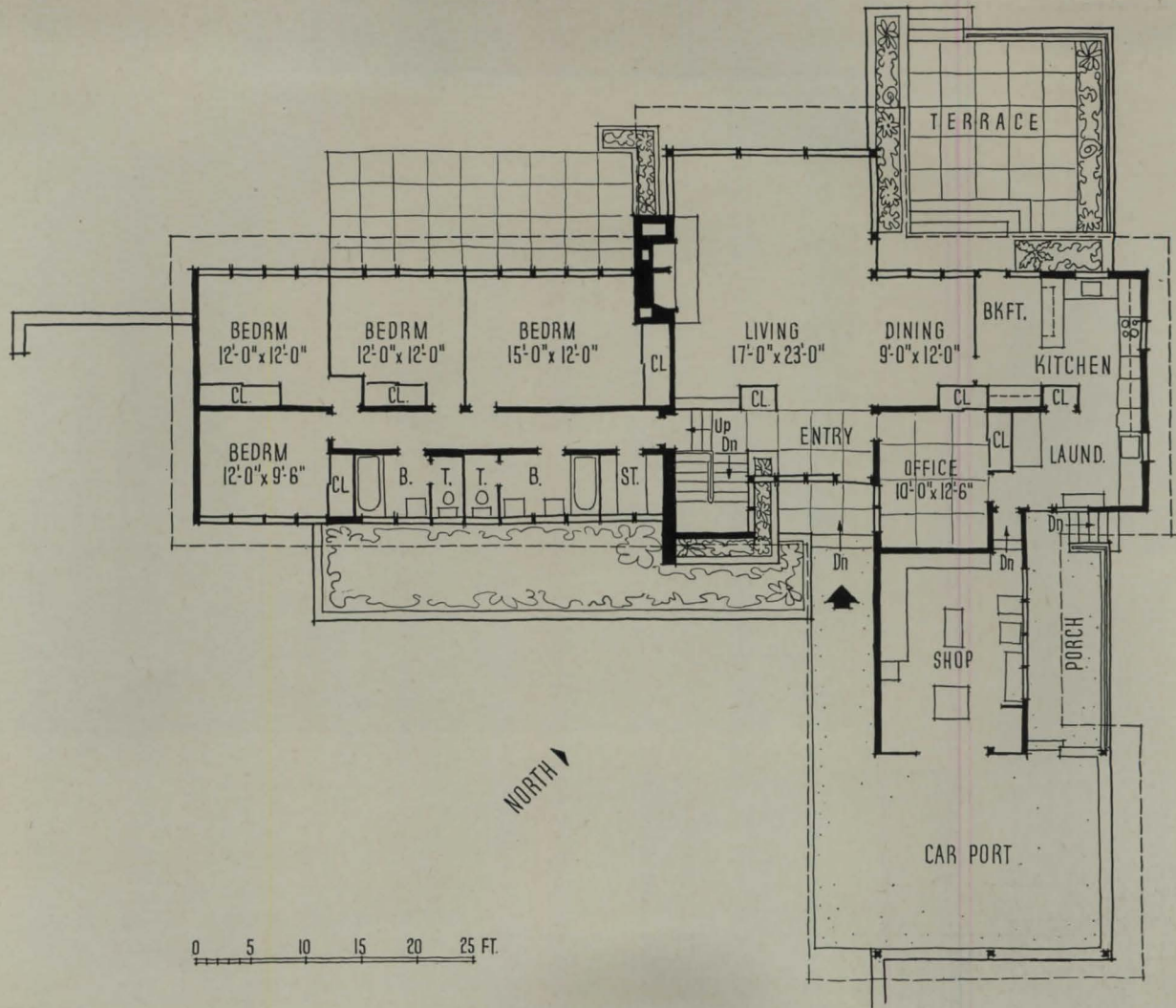
Right: main feature of living room is the glass-walled alcove cantilevered out to take full advantage of the view

Far right: dining area is tied to living room with one wall of vertical T & G fir, but is really a separate room; door at extreme left leads to upper terrace



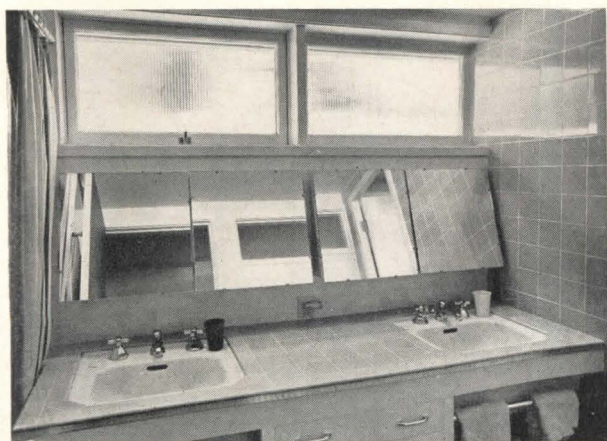
Charles R. Pearson Photos







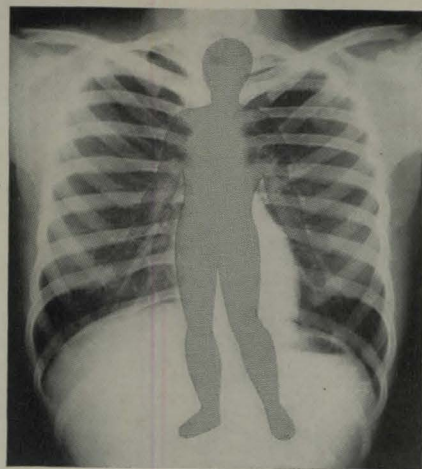
Charles R. Pearson Photos



Above: even the kitchen looks out on the Sound. Left: larger of the two baths has well-lighted sloping mirror. Below: three of the four bedrooms face the view



TUBERCULOSIS HOSPITALS *



THE NEED FOR HOSPITAL FACILITIES

By Robert J. Anderson, M.D.

Chief, Division of Chronic

Disease and Tuberculosis

U. S. Public Health Service

and James E. Perkins, M.D.

Managing Director

National Tuberculosis

Association



AT THIS POINT in the development of the tuberculosis control program, the interest of the architectural profession in the construction of tuberculosis hospital facilities is particularly timely. Because the need for additional hospital facilities is great, architects will be called on frequently in the future to participate in planning to meet these needs.

Despite the tremendous gains we have made against tuberculosis in recent years, the disease is still very much with us. Tuberculosis continues to kill about 40,000 Americans each year, and there are perhaps 500,000 people in this country who have the disease, half of them without knowing it.

Because tuberculosis is a communicable disease, there are certain rather rigid prerequisites which must be met before the disease can be wiped out completely. First, since the presence of unrecognized and unknown cases in a community invariably means that new cases will develop through spread of the infection, every existing case of the disease must be found and identified. Second, all infectious cases must be isolated, in order to block further infection. And finally, the cases found and isolated must be given prompt treatment and returned to normal living fully capable of remaining well and non-infectious.

What has been our record of progress toward these goals? In case-finding, the record has been excellent. In providing for isolation and treatment, however, the record has not been so good.

By the most conservative estimate of our tuberculosis hospital requirements, it appears that

we now have a little more than half of our barest needs. Actually, this estimate of our hospital bed deficiency is probably grossly understated because it is based on a minimum standard of 2½ beds per annual death from the disease (an arbitrary standard established several years ago by the Medical Section of the National Tuberculosis Association for want of a better yardstick). With progressive improvement in treatment, fewer tuberculosis patients are dying of the disease so that deaths from tuberculosis constitute a progressively less accurate criterion of the need for tuberculosis hospital beds.

The simple fact is that we will continue to require *more*, not fewer beds for the tuberculous for some time to come. As a result of the accelerated casefinding rate throughout the country, many states have seen their already overloaded hospital waiting lists grow appreciably. Some accept only certain types of cases — the far advanced, or the early cases, or those with demonstrably contagious disease — to the exclusion of all others. In some states, too, there are even limits on the length of time a patient may occupy a bed in a tuberculosis hospital. By the very fact that all of these practices contradict sound principles of public health, they serve to indicate the desperate need for additional hospital beds. Just as long as any tuberculosis patient must be denied needed hospitalization, the community will continue to receive inadequate protection from the disease.

In many states, efforts have already been made

* Additional plans and data on tuberculosis hospitals will be featured in the May issue of *The Modern Hospital*.

to meet actual tuberculosis hospitalization needs. Some have taken the expedient of converting surplus facilities abandoned by the military after World War II. Others have begun to plan for, and actually add tuberculosis wings as integral parts of general hospitals. This latter development has been a most encouraging one, for in the last analysis, tuberculosis treatment is only one part of medicine, and the care of patients ill with the disease cannot fail to benefit from the ready availability of the entire range of medical and surgical services, including specialist consultation, which abound within a general hospital. This is, of course, to say nothing of the operating economies which invariably derive from such an arrangement.

To some extent the provision of the Hill-Burton Act, or the National Hospital Survey and Construction Program, have helped provide some of the much needed tuberculosis hospital facilities. It is expected that states in need of hospital beds for the tuberculous will take advantage of its liberal provisions to a greater extent than they have thus far.

Time was when the tuberculosis sanatorium was invariably located in remote and inaccessible

corners of the countryside, long miles away from any sizable community or any center of medical practice. Today, however, the tuberculosis hospital is moving toward the large, metropolitan centers which they are meant to serve, toward closer contact with other medical and surgical specialties, and toward the sources of skilled and trained personnel.

Nursing and other personnel, which in the past have been extremely difficult to obtain and more difficult to hold on the job because of remoteness and inaccessibility of the hospitals, will, as a result of this trend, become more readily available. All of this will mean more effective care for the tuberculous themselves, as well as better service to the communities involved.

More than ever before in the history of the world, victory in the fight against tuberculosis seems in sight. We have the knowledge and the skill to find the disease early, while it is still amenable to treatment, and to treat it effectively. The medium for treatment, however, remains as always the hospital bed, so that future progress in the fight against the disease will of necessity be dependent upon the progress we shall make in providing an adequate supply of these beds.

CONSTRUCTION AND PLANNING OF TUBERCULOSIS HOSPITALS

By John W. Cronin, M.D.

Chief, Division of Hospital Facilities, U. S. Public Health Service

THE MODERN HOSPITAL FACILITY for the care of tuberculosis patients bears but little resemblance to the "pest houses" of a few generations ago, and yet much remains to be done if we are to continue our slowly winning battle against the disease.

At present only six states and one territory meet the recommended minimum ratio of $2\frac{1}{2}$ tuberculosis beds per average annual death from the disease in the respective state during the five-year period 1940-44. On the basis of this prescribed minimum ratio, a total of 146,926 tuberculosis beds is needed — 67,477 beds in addition to the present supply. In other words, only 1.4 acceptable beds per average annual death from tuberculosis are now available in the United States and Territories. This is just slightly more than half of the total beds estimated as the minimum need.

The hospital bed still remains the most essential medical weapon in our armamentarium needed to combat tuberculosis. The Hospital Survey and Construction Act provides an excellent opportunity for material advances in tuberculosis control

wherever the need exists. Needed liberal financial assistance for construction is available to the states and territories in meeting this costly phase of tuberculosis control. Therefore, all concerned should take every opportunity to make local tuberculosis hospitalization needs known to the state hospital planning agencies, advisory councils and to members of their communities from whom major support must ultimately be derived.

To help alleviate the shortage of tuberculosis beds, consideration should be given to integrating plans for tuberculosis bed construction with those of general hospitals. Past experience has shown this to be a highly desirable practice, and several states have adopted it in their plans for future hospital construction.

Cooperative endeavors between local, state and federal groups in good community planning and good design and construction of hospital facilities as provided in the Hill-Burton program is resulting in good hospitals which communities and states can operate effectively to maintain the health of our nation which is so essential at this the most critical period of our history.

NOTES ON TUBERCULOSIS HOSPITAL PLANNING

By Peter N. Jensen

Hospital Architect, U. S. Public Health Service

IN HIS APPROACH to the problem of the Tuberculosis Hospital, the architect must bear in mind three main factors. They are the long term aspect of the treatment, the specialized nature of the treatment and the infectious nature of the disease. These account for the variations between tuberculosis and general hospitals. In many respects the planning of tuberculosis and general hospitals is quite similar.

Although the average stay in Tuberculosis Hospitals varies from hospital to hospital, the overall average is probably about 18 months as compared to 8 days for non-governmental general hospitals. As a result, facilities supportive to medical care are required which are not usually found in the general hospitals.

An auditorium or an assembly room for the entertainment of the ambulant patients through movies, shows and general meetings is a basic requirement. In most cases, the auditorium may also be used for religious services.

A beauty and barber shop contribute greatly to the patient's morale, particularly that of the women. Provision of a canteen permits patients to buy items for their personal needs which are not supplied by the hospital. A library is another necessary adjunct.

Occupational therapy is an important consideration in this respect. For ambulant patients, space for this purpose should be provided in the patients' activities area. Facilities for the storage of items used for bed-fast patients are required on each nursing unit.

Vocational training facilities are needed for the rehabilitation of some patients who will be unfit for former occupation. This function may be provided for in the occupational therapy room when the load is small. For larger services extensive facilities may be necessary.

The above services should be placed where patients in nursing units will not be disturbed. A location near the elevator provides easy access for the patients.

The orientation of patients' wings assumes greater importance in a long term hospital. Plenty of sunshine, a pleasing view and freedom from noise and distracting surroundings means much to the patient who is room-bound for long periods of time. A suburban site may be required to ensure these important considerations but a rural location is no longer considered necessary for purposes of treatment.

The disease can be treated in hospitals located within large cities. Certain practical advantages are derived from such a location in that the hospital is close to consultation services, the labor market and the source of medical and other supplies. Accessibility to visitors

also contributes greatly to the morale of the patients.

The infectiousness of the disease and the specialized treatment required presents specific problems. Special techniques are required in caring for patients and handling articles used by them to protect hospital personnel and visitors. Proper planning can do much to implement these techniques.

Flexibility and segregation of patients can be accomplished by providing an adequate number of single rooms. It is recommended that not less than 30 per cent of the beds be in single rooms.

The tuberculosis nursing unit differs from that of a general hospital in that the following additional facilities are required for carrying out the protective techniques mentioned above:

Nurses Gown Room — The gown room provides facilities for donning and changing gowns and hand washing as the nurses enter and leave the unit.

Visitors Gown Space — For use by relatives and friends visiting infectious patients, the visitors gown space must also be located at the entrance to the unit.

Corridor Hand Washing Space — Knee or foot controlled lavatories placed intermittently along the nursing unit corridor are required for staff use in carrying out isolation techniques.

Sputum Disposal — Proper disposal of sputum is one of the most important factors in the prevention of spread of infection. The method of sputum collection varies. In some cases patients use paper cups in metal holders which are distributed daily as necessary. Used paper cups are filled with sawdust or cellulose, wrapped with clean paper, several to a package, tied and incinerated. The holders are washed and sterilized before being returned to the patient.

Another method involves the use of clean paper wipes which patients place in paper bags after use. The bags are collected periodically during each day and disposed of in the incinerator.

Disposal of sputum cups may be assigned to an area especially designed for this purpose or it may be done in a contaminated utility room.

The nurses station and clean utility room are similar to those found in the general hospital. Toilet facilities for each patients' room, a lavatory in each room and dental basins all contribute to easier, safer nursing techniques.

Treatment Room — In tuberculosis, surgical collapse treatment of the lung is necessary. This is sometimes accomplished by means of artificial pneumothorax which is a method of introducing air into the pleural space. In

connection with this treatment a fluoroscopic examination is used to determine the amount of air required and as a quick method of determining the progress of lesions.

The facilities required for this process consist of a waiting room, treatment room and fluoroscopic room. One such suite is usually required for each 100 patient beds and should be located on a patient's floor, for easy access. Wherever out-patient work is contemplated in the small hospital, it may be possible to locate the suite centrally for the convenience of both types of patients. For extensive out-patient work, a separate suite is recommended.

The other departments of the Tuberculosis Hospital are affected to a lesser degree by the specialized nature of the disease. Separate dining rooms for staff and patients are required. Hand washing facilities for each should be provided in the adjacent corridor. Attention must be given to dishwashing facilities including provision of high temperature water to insure complete disinfection of dishes.

Although some hospitals sterilize all linen before laundering for the protection of the laundry workers, a good body of evidence exists to indicate that it is unnecessary. Care in handling linen will protect the laundry worker and the high temperature water used in the washers completely disinfects contaminated linen. A demand of 7 pounds per day per bed can be used to calculate the size of the equipment required.

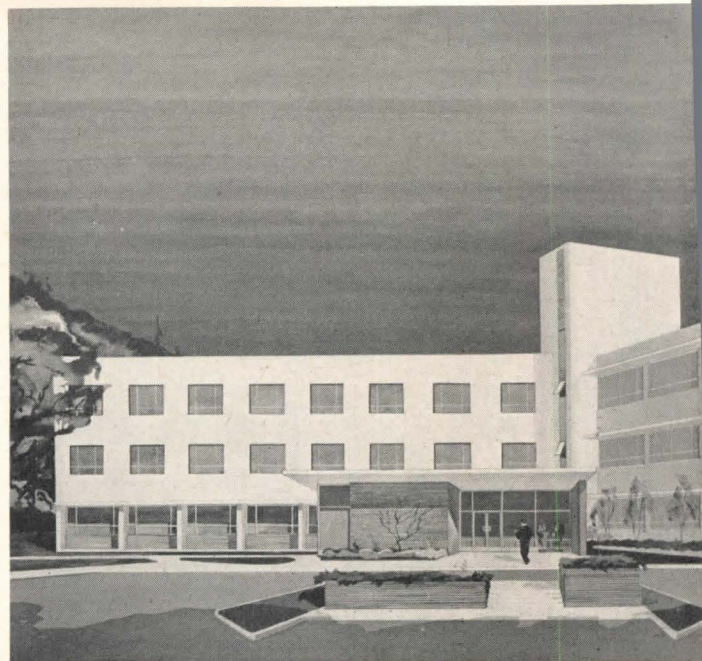
Unless the Tuberculosis Hospital is a part of a larger institution, storage facilities should be provided on the same basis as a general hospital. In addition, space is required for the storage of patients' clothes.

The morgue should be completely isolated from any patient activities and located so that bodies may be removed unobtrusively.

Offices for a medical director and assistant medical director are required in the administration department in addition to the usual requirements for this department. Some authorities are inclined toward a provision of an office in this department for each physician on the staff on the basis that such private facilities are necessary for discussion between the attending physician and the patient's relatives.

Laboratory and x-ray facilities are a necessary adjunct to the treatment of tuberculosis and should be as complete as those of the general hospital. The pharmacy can be kept to a minimum and in a hospital of 100 beds or less drugs can be dispensed from the laboratory.

The ratio of surgical cases to beds is much smaller in the Tuberculosis Hospital and the major operating rooms can be apportioned on the basis of 1 to approximately 200 beds. A large hospital would require a cystoscopic room and fracture room with the necessary adjuncts. Sub-sterilizing facilities, clean-up rooms, personnel locker rooms, central sterilizing room, etc., are, of course, also required. In addition, facilities for dental and eye, ear, nose and throat work should be provided.



SAN MATEO COUNTY

Redwood City, Calif.

Stone and Mulloy, Architects

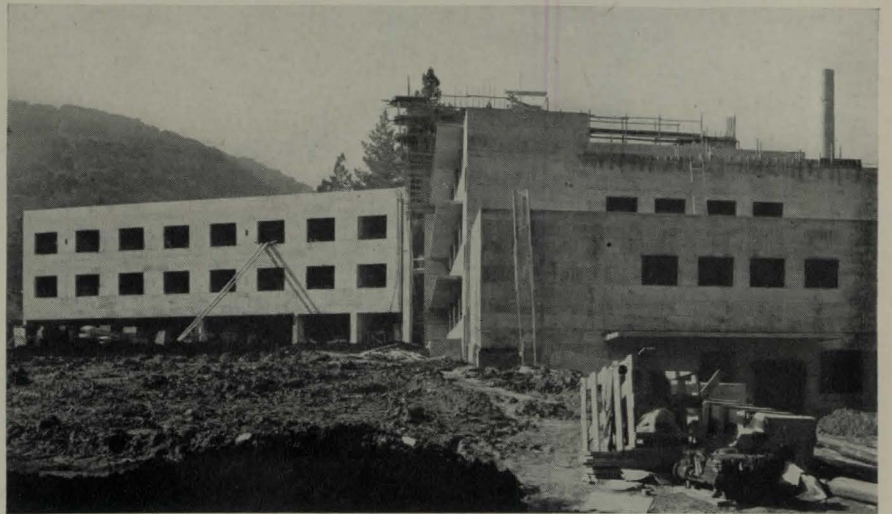
S. P. Marraccini, Associate Architect

ALTHOUGH THIS HOSPITAL WAS DESIGNED PRIMARILY for the treatment of tuberculosis patients, thought was given to the possibility that this disease may at some time be greatly reduced or entirely eliminated. The plan is therefore adaptable to simple conversion to more general hospital needs: space for expansion of the surgical department is made easily available by break-out panels built into the second floor, east wing walls toward the roof area; and structural columns of the floors below were designed to take additional floors, and the third floor is likewise adaptable to expansion. All mechanical and dietary facilities have been generously planned so as not to limit future growth.

As a T. B. hospital, it is an excellent example of the modern hospital with the full range of elements. And the same thoughtful planning is seen in the organization of the various elements in good relationships. Administration, diagnostic, patient and service areas are so located as to avoid interference with each other. Centralization of all service facilities in the heart of the plant creates an easily controlled unit, with economy.



Lionel T. Berryhill Photos



San Mateo County Tuberculosis Hospital, now under construction, will add 100 to 120 beds for California's attack on T.B. Should the control campaign reduce the patient load in later years, this hospital can be used as a general hospital

TUBERCULOSIS HOSPITAL

Nursing units of 25 beds spread out from each side of the central core, placing all patients within easy reach of the nurses' station on each nursing floor. Patients' rooms, 12 ft by 17 ft 6 in., are somewhat larger than normal, and were planned to accommodate two patients. The location of the day rooms near the elevators and directly opposite the nurses' stations opens up this usually congested area nicely and affords a pleasant view for visitors and patients, as well as for the nurse during her daily work.

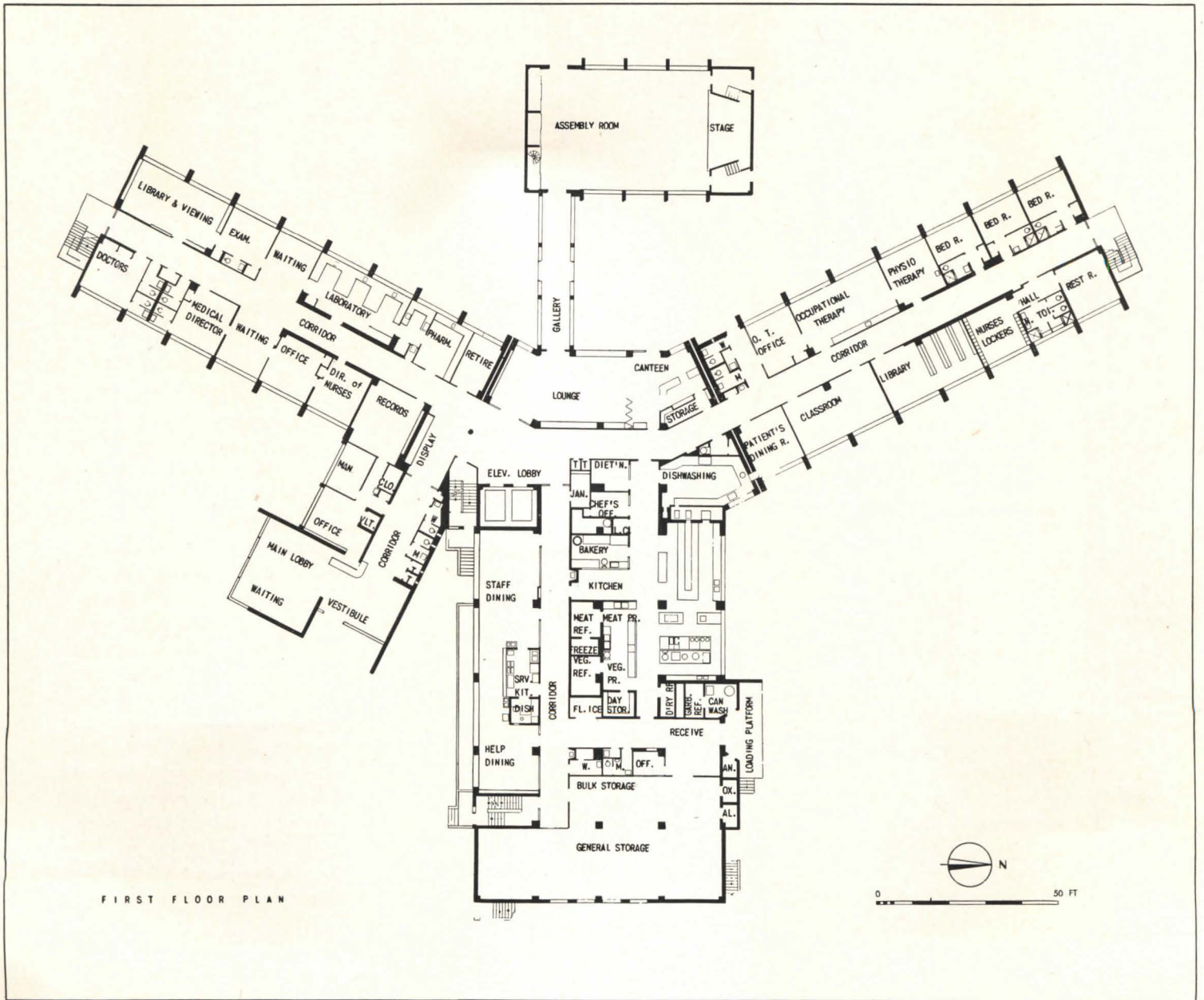
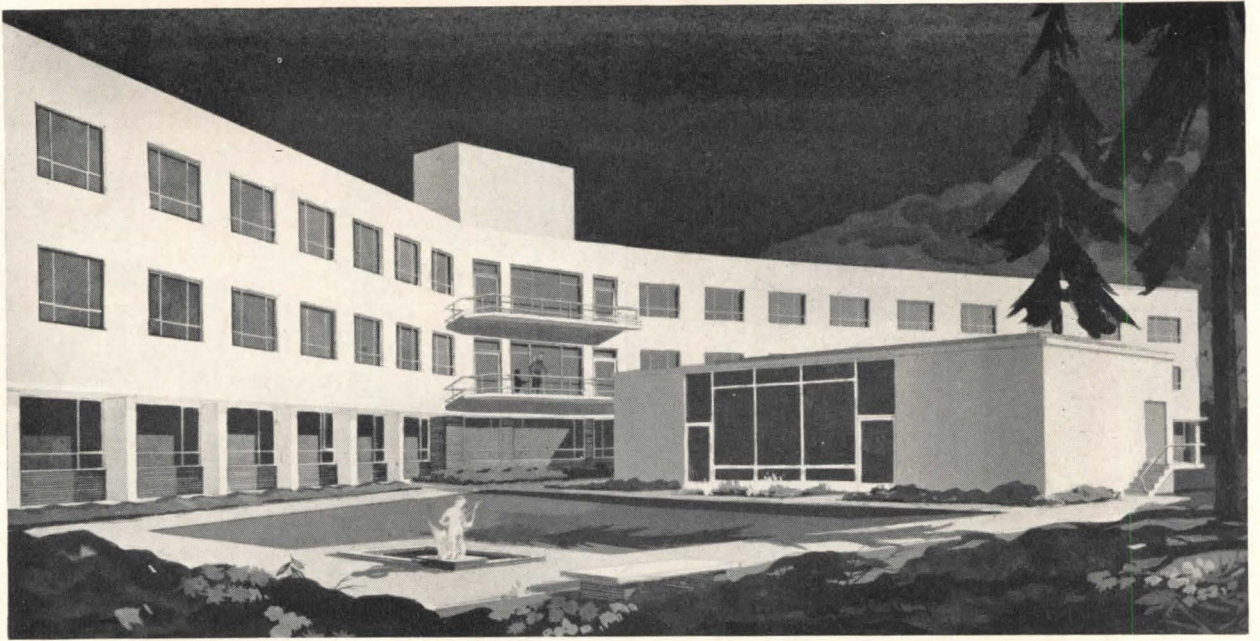
Medical facilities are on one side of a double corridor, surgical on the other, with the commonly used fluoroscopic and x-ray facilities between. This concentration makes for efficient operation, yet does not subject the treatment patients to unpleasant contacts with the surgical department. Major and minor operations would be performed in the single operating room, while the sterile supply room is located for use of both operating room and nursing units. The pneumothorax suite, x-ray and fluoroscopic facilities on the second floor are designed to serve in-patients as well as out-patients.

To avoid disturbance to patients the boiler room, maintenance shop and morgue have been placed well away from the nursing areas. Delivery and help's entrance is controlled by a receiving clerk, who also has charge of issuing supplies. Although a small laundry has been provided for processing a limited amount of material, most laundry will be decontaminated at the hospital and sent out to a local commercial laundry.

The hospital was planned for a normal capacity of 100 beds, but is easily capable of handling 120 beds within the original building. Construction throughout is earthquake-proof, reinforced concrete. Face brick has been used at certain ground floor and entrance areas. Windows are steel combination fixed, hopper, and casement types. Resilient floor coverings were used for circulation, office and patient areas. All lavatory floors are terrazzo, and quarry tile was used for laboratories and floor preparation areas. All equipment was designed for utmost durability and ease of maintenance.

The contract price and fixed equipment, exclusive of radiographic, is \$1,331,550.

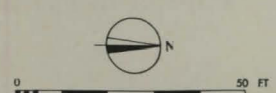
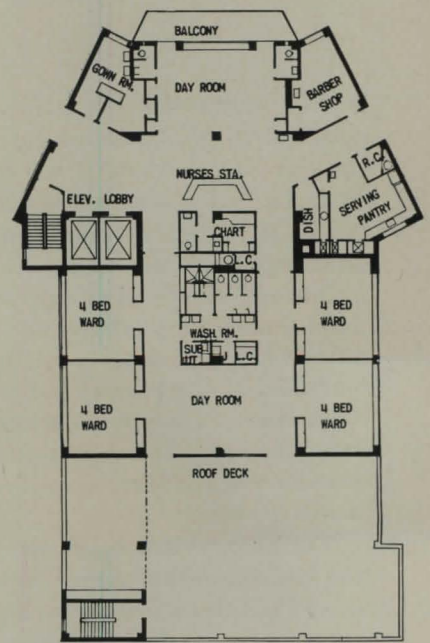
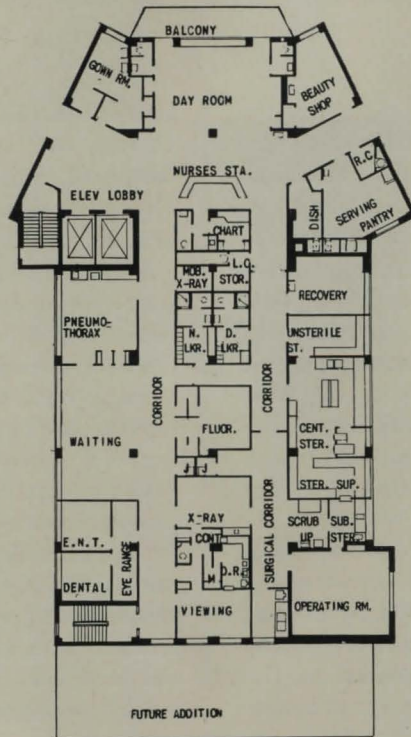
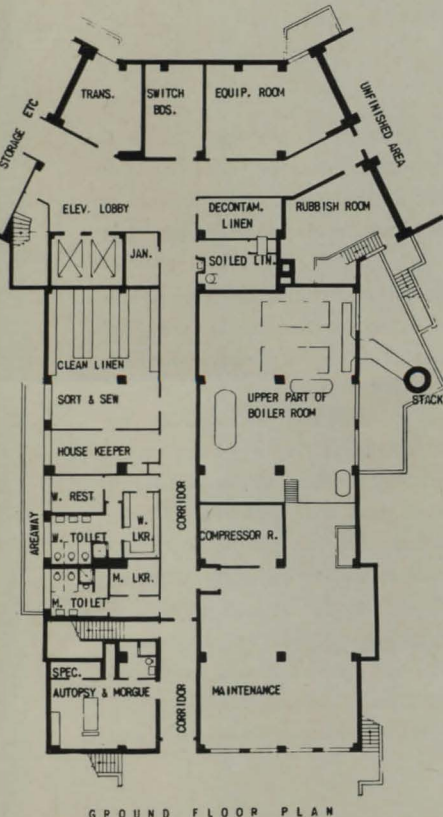
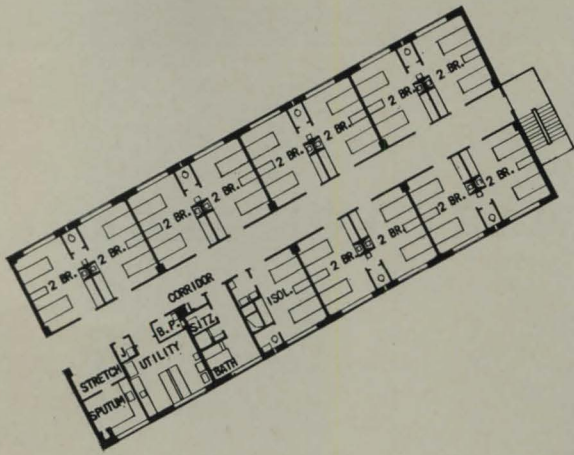
SAN MATEO COUNTY TUBERCULOSIS HOSPITAL

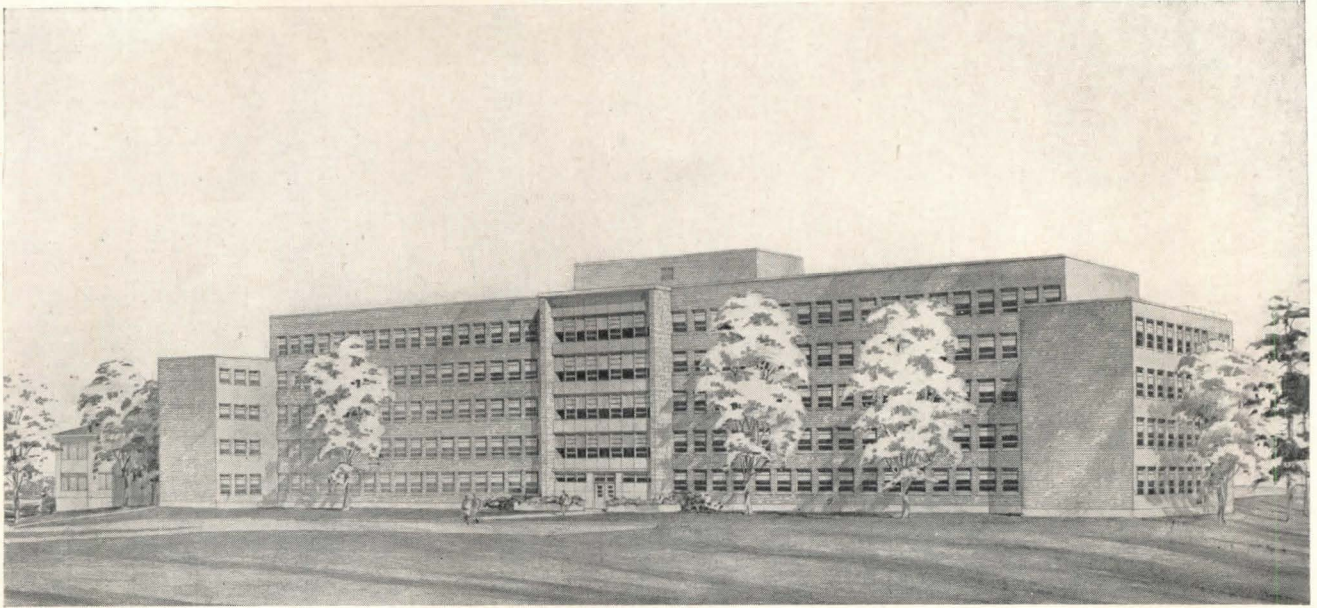


FIRST FLOOR PLAN

Typical nursing wing (below) repeats on both sides of central cores (bottom of page) on second and third floors. This scheme gives two nursing units of 25 beds each, both served from central nurses' station. This station has excellent control of patients' rooms, day room, lobby and various service facilities as well

Lionel T. Berryhill Photos





TUBERCULOSIS INFIRMARY FOR NEGROES

Mississippi State Sanatorium, Sanatorium, Miss.

R. W. Naef, Architect — Engineers

Biggs, Weir & Chandler, Architects and Consulting Engineers

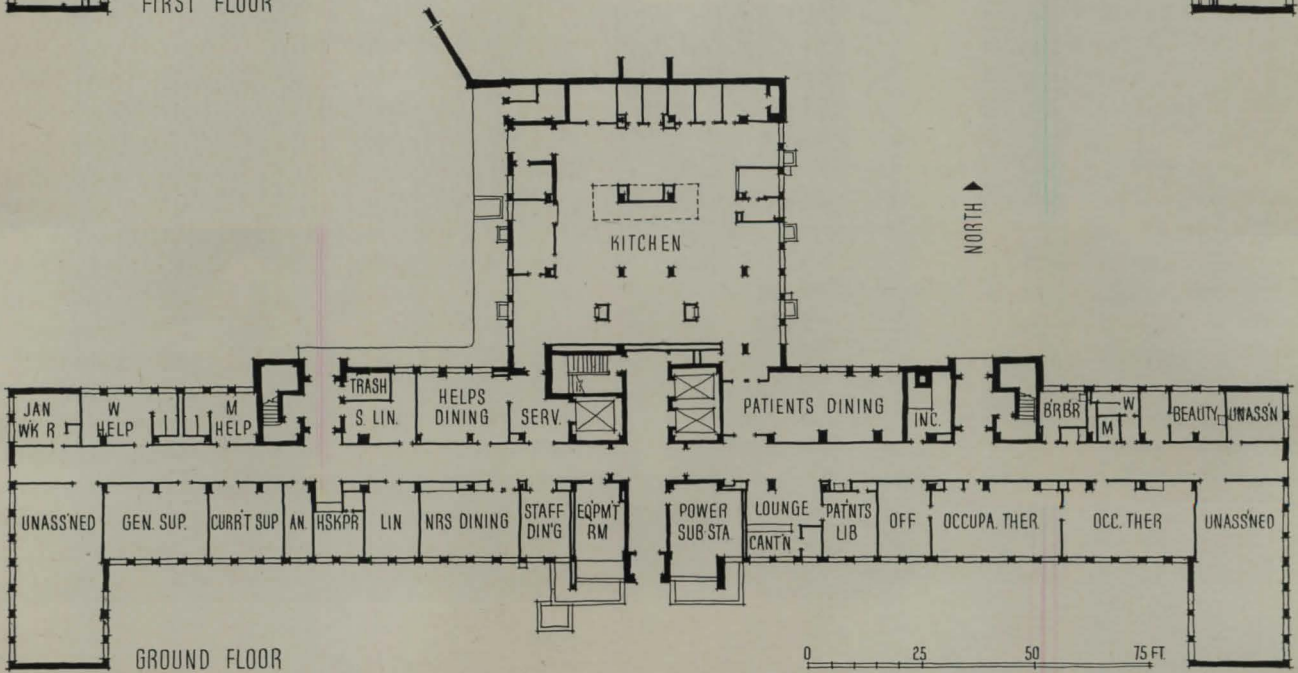
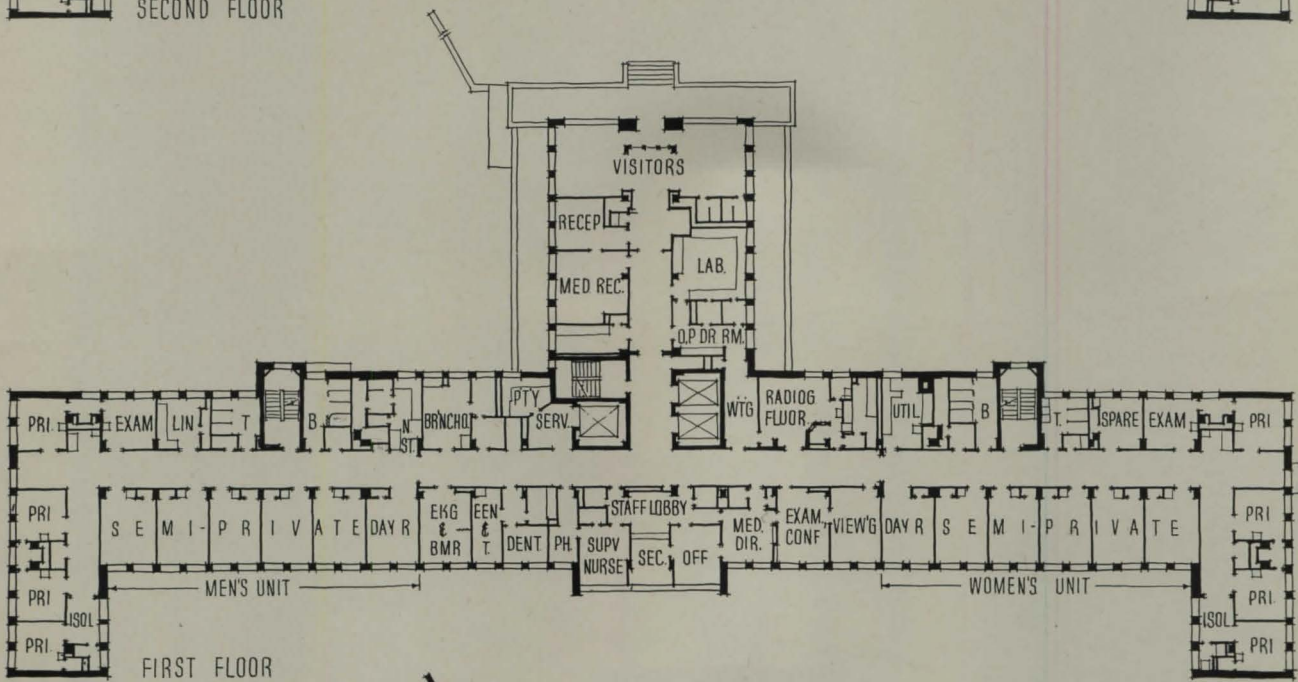
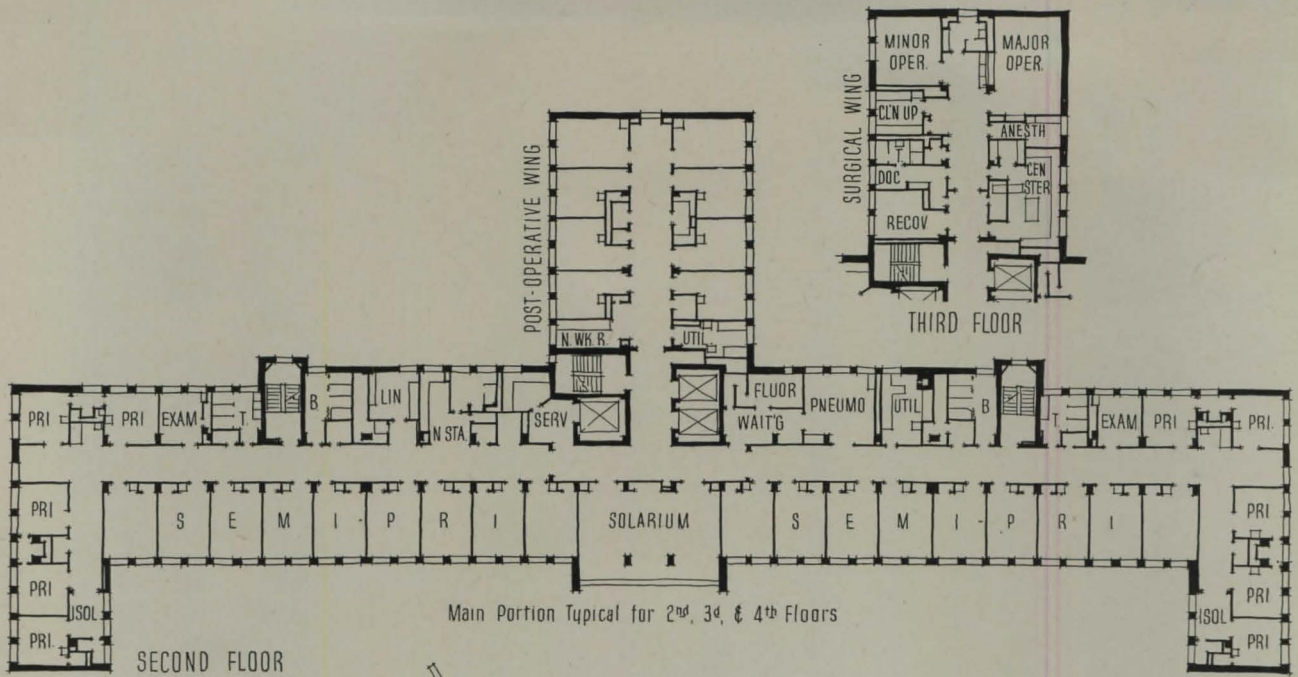
THIS NEW INFIRMARY BUILDING is an addition to an existing state sanatorium, and is entirely for negro tuberculosis patients. It will not only add 166 needed beds, but will also set a new standard for care and treatment. It is part of Mississippi's currently enlarged efforts to control and eventually wipe out tuberculosis.

Since it is a part of a larger institution it concentrates on definitely hospital facilities, omitting administrative offices, laundry, boiler room, and so forth, as these are provided in the existing buildings. Every attempt has been made to assure the comfort and rehabilitation of needy patients, through careful planning, and through provision of facilities, amenities and finishes which are above average.

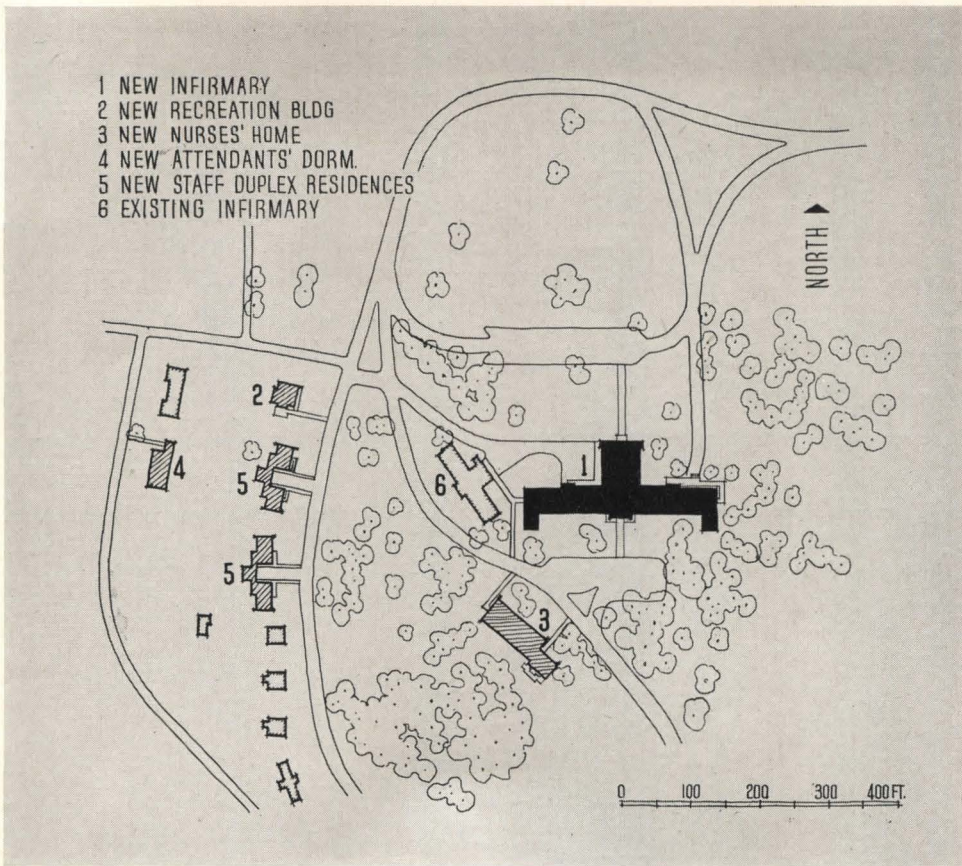
The hospital is well laid out, with the relationship of the departments designed to maintain correct traffic flow. Facilities which are to be used jointly by in- and out-patients, such as laboratory and x-ray, are placed conveniently to both, and facilities essential to the proper care of tuberculosis, such as surgery, pneumo-

thorax, dental, etc., are all provided. An occupational therapy and recreational department is provided in the basement, which is far above average and much more in line with what the authorities recommend for this activity.

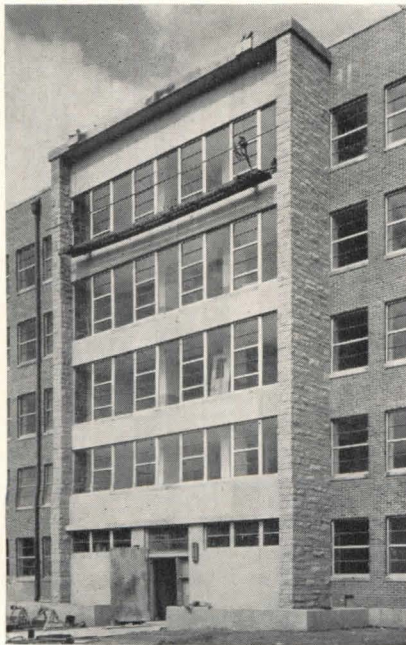
Perhaps the most individual item in this plan is the post-operative unit, which occupies the north wing of the second floor. This is a unit of eight beds which includes a nursing station, utility room, bed pan room, storage, etc., to make it a completely self-sustaining nursing unit, which can give the highly specialized nursing care necessary immediately before or following a major operation. This type of unit will undoubtedly be provided more and more in tuberculosis hospitals in the future, since the latest trends in tuberculosis treatment have definitely established its need. In the types of treatment where streptomycin is administered in conjunction with a series of surgical operations, it is essential that the patient be carefully treated by highly trained personnel before, between and after operations.



TUBERCULOSIS INFIRMARY FOR NEGROES

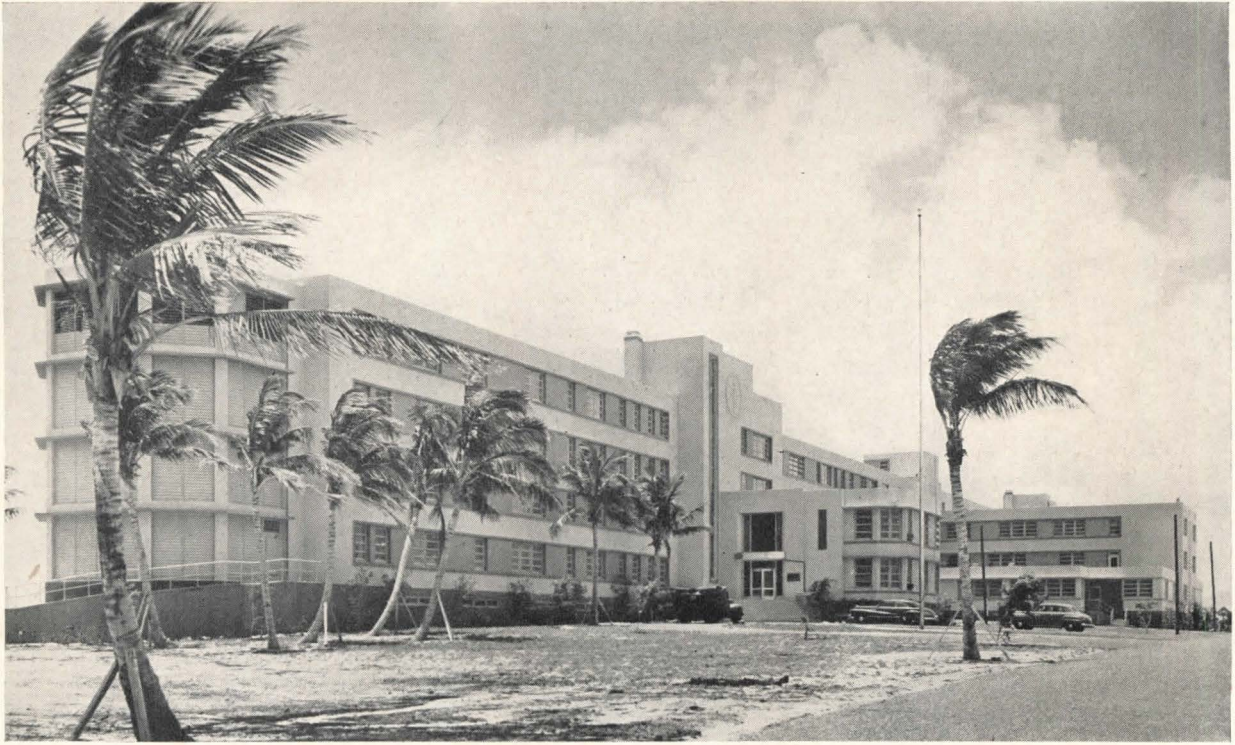


Fruitt Photo Service Photos





Mississippi adds 166 beds to its program for controlling tuberculosis among its negro population with this infirmary, shown here in construction views, an addition to an existing institution. Upper view shows principal facade, facing south



Sam R. Quincey Photo

SOUTHEAST FLORIDA TUBERCULOSIS SANATORIUM

Lantana, Florida

Reynolds, Smith and Hills, Architects and Engineers

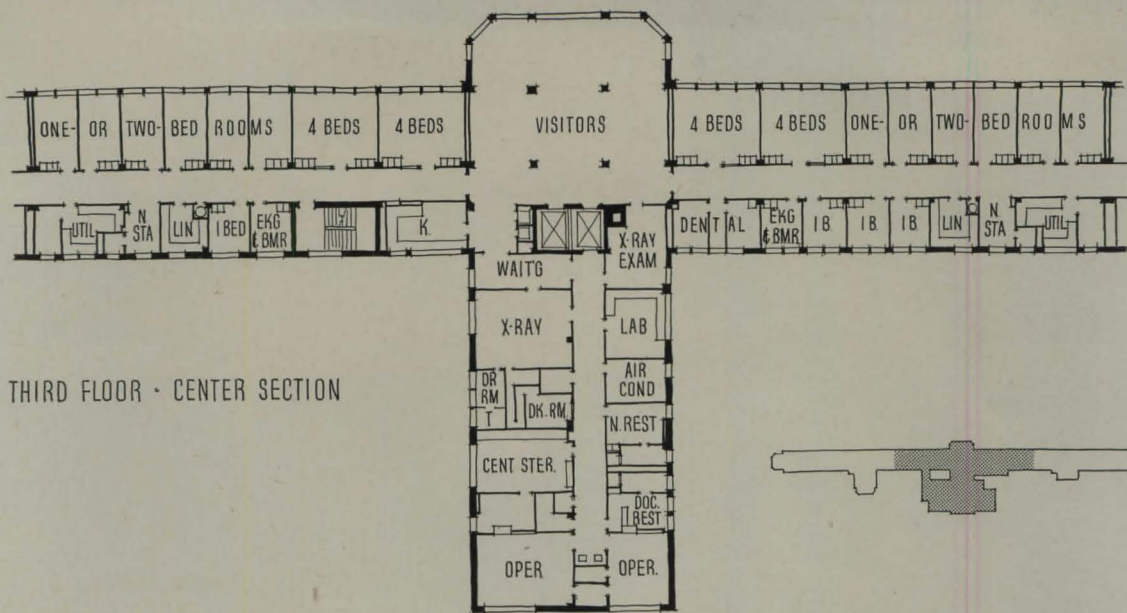
Charles F. Kuhn, Associate Architect

ONE OF THE LARGEST of the current tuberculosis hospitals, this 500-bed sanatorium is one of three which are planned for Florida to provide a total of 1350 new beds. The particular building here shown is one of a group built on this site which will provide all necessary services and staff living quarters. Separate buildings are provided for heating and shops, laundry, nursing quarters, doctors' quarters and help's quarters.

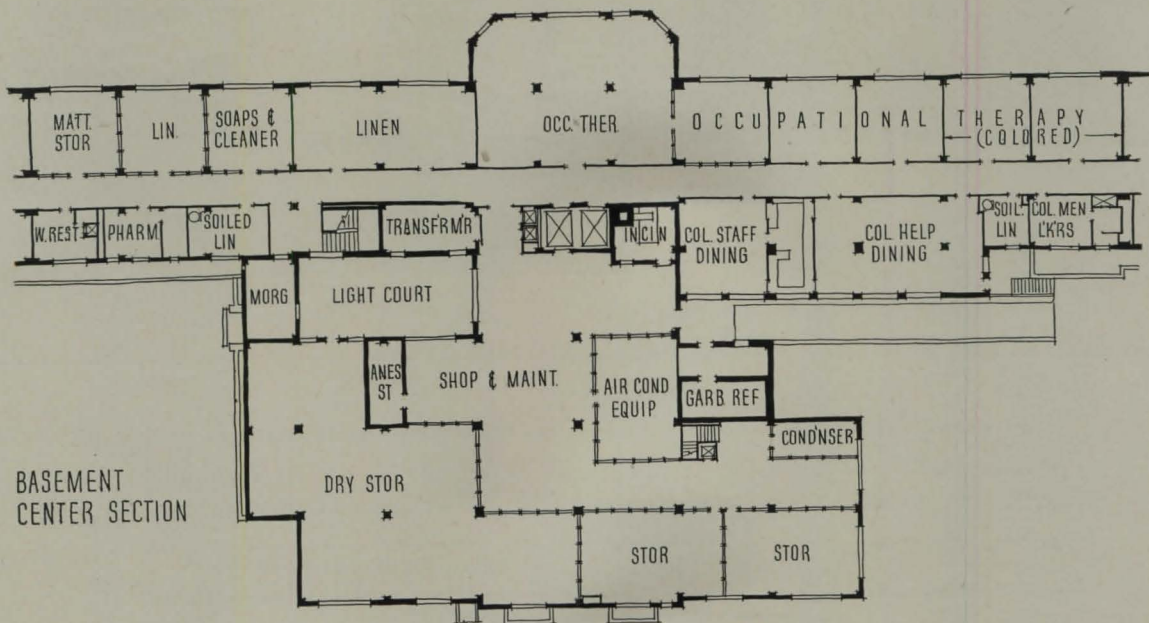
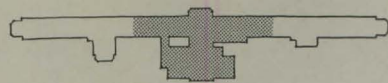
The hospital is divided at the center to provide negro beds and facilities to the west and white facilities to the east. However the nursing units are so placed that should one or the other occupancy be greater the excess can overflow into adjacent units. The facilities in each category can be further segregated to provide for additional necessary categories of patients, either by floors or by portions of floors. Three types of patients' bed-rooms are provided, one-bed, two-bed and four-bed, to provide even greater flexibility of use.

The planners of this hospital have taken greater recognition than is usual of the growing importance of occupational therapy, rehabilitation and recreation. A large part of the basement area is devoted to shops and classrooms for the patients. A spacious library and a recreation room which may be used for assemblies and entertainment occurs on the second floor, while every floor has ample areas set aside for visiting and other social or rehabilitative activities. Another provision in these plans for the benefit of the patient is the very roomy, well oriented patients' dining rooms, which provide the change and contact with one another which is felt to be essential for long-term patients.

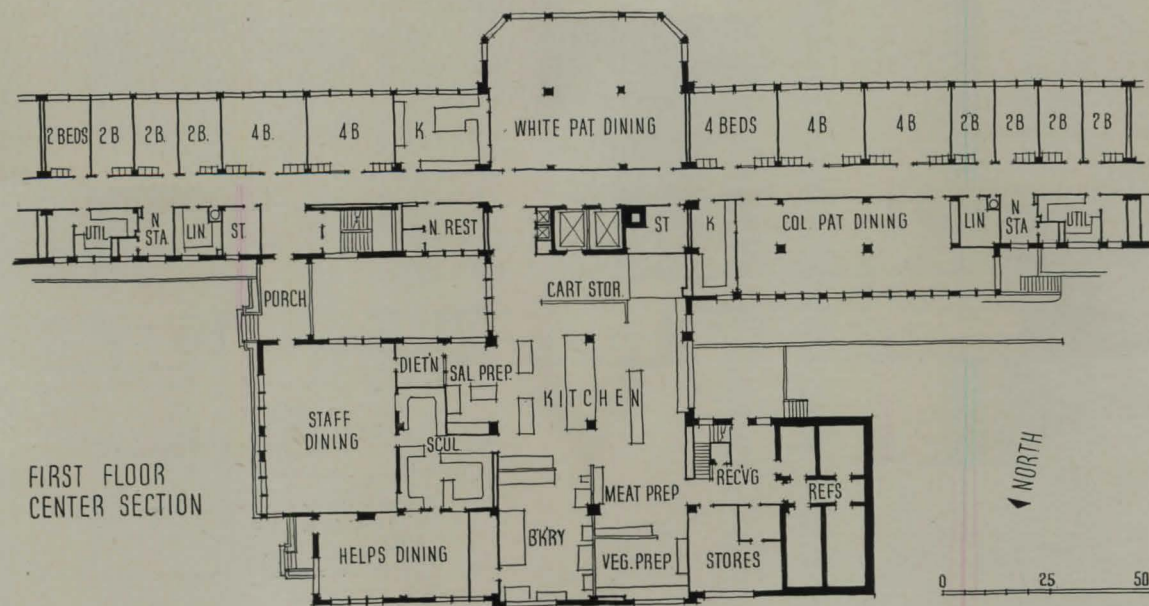
If nice surroundings and beautiful views are worthy of consideration in the treatment of T. B., this institution should rank near the top. The site is located just south of Palm Beach on the shores of Lake Worth overlooking the Atlantic Ocean.



THIRD FLOOR - CENTER SECTION



BASEMENT CENTER SECTION

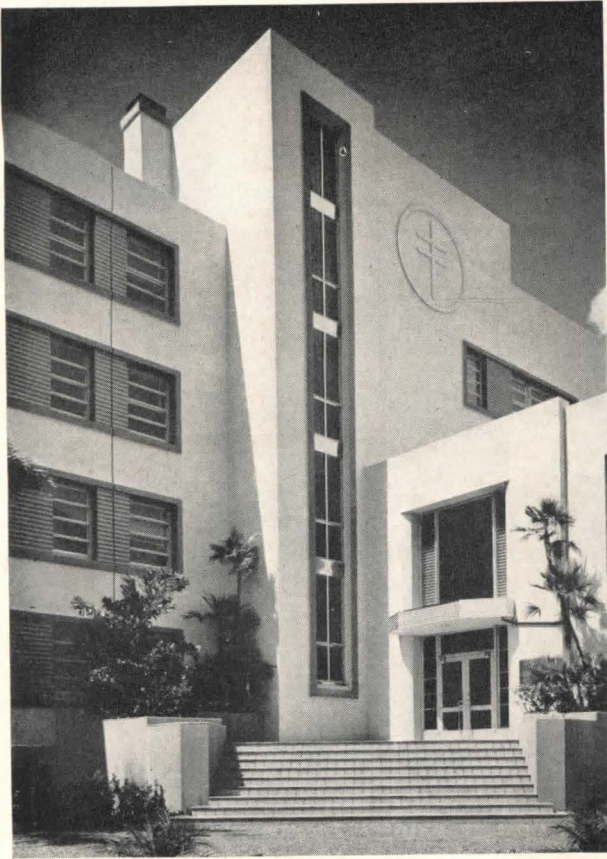


FIRST FLOOR CENTER SECTION



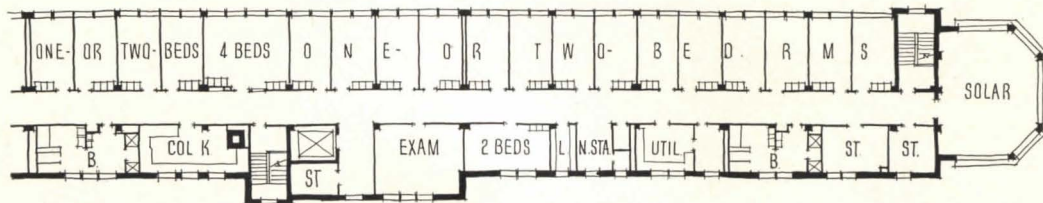
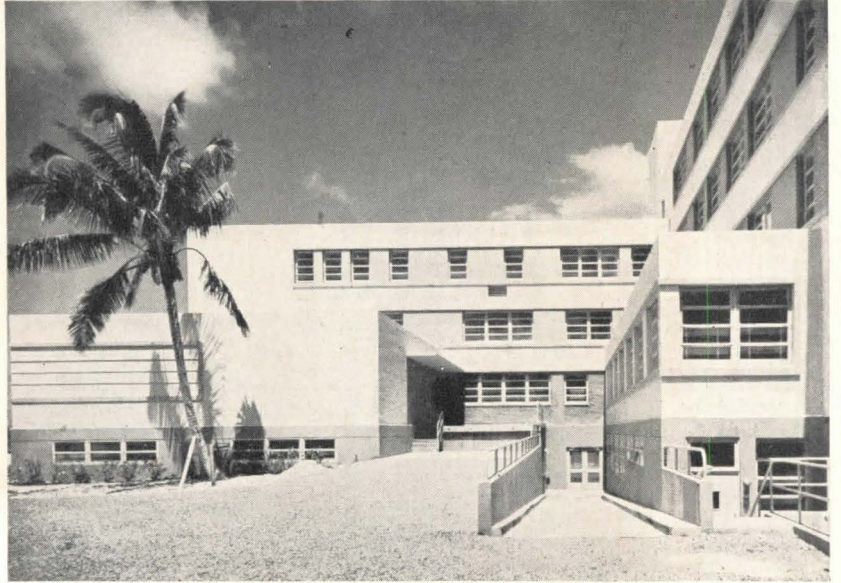
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SOUTHEAST FLORIDA TUBERCULOSIS SANATORIUM

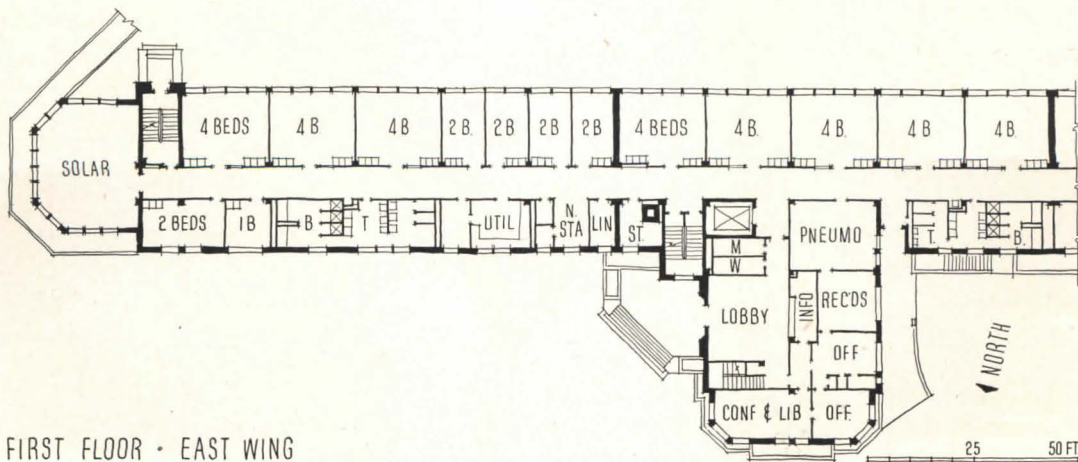
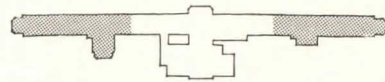


Jan Hankowski Photos

This is one of three new T.B. hospitals being built by the State of Florida, with a total of 1350 beds. This main building at Lantana is long and narrow, with four nurses' stations lined up to break up the length into separate nursing units

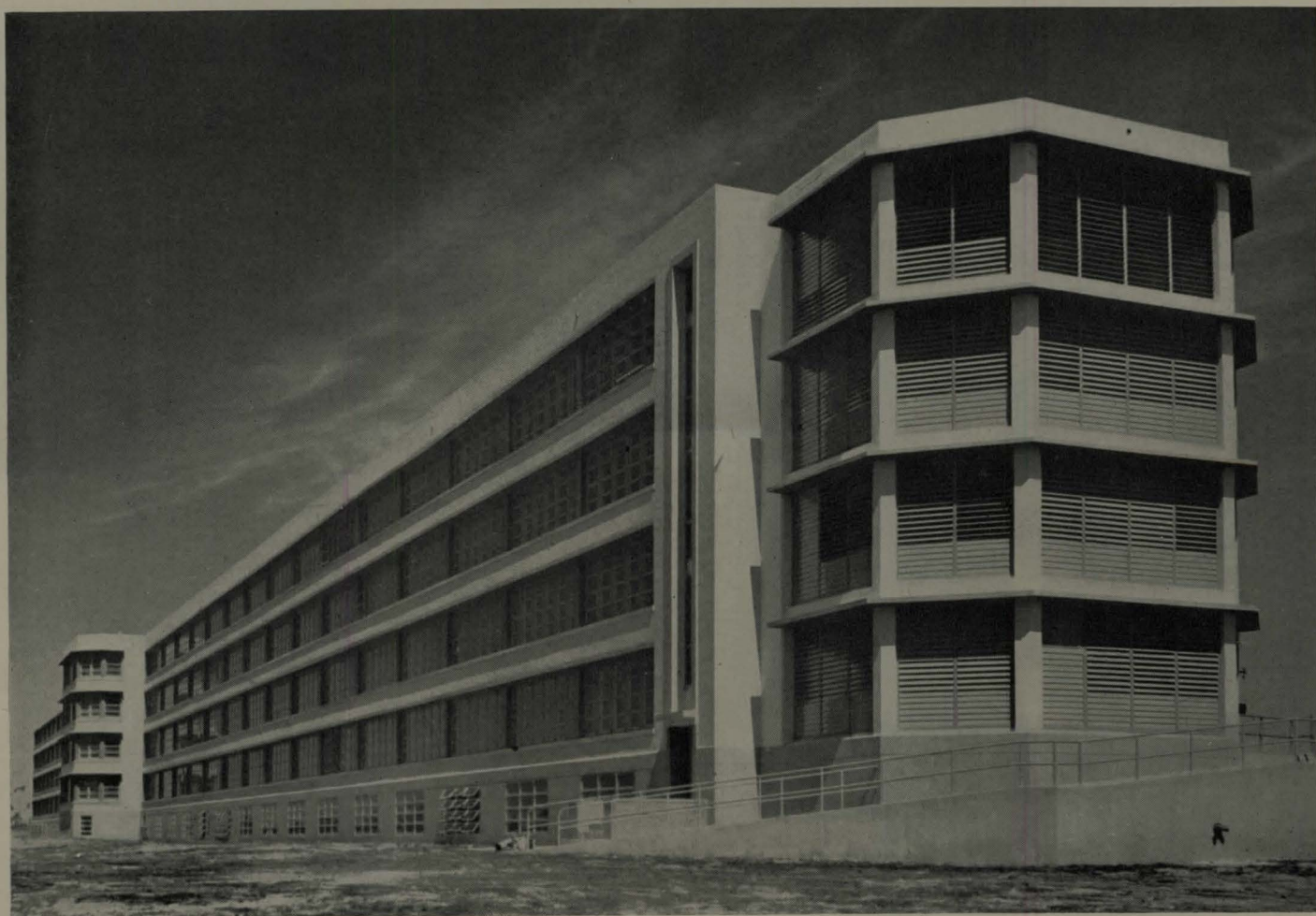
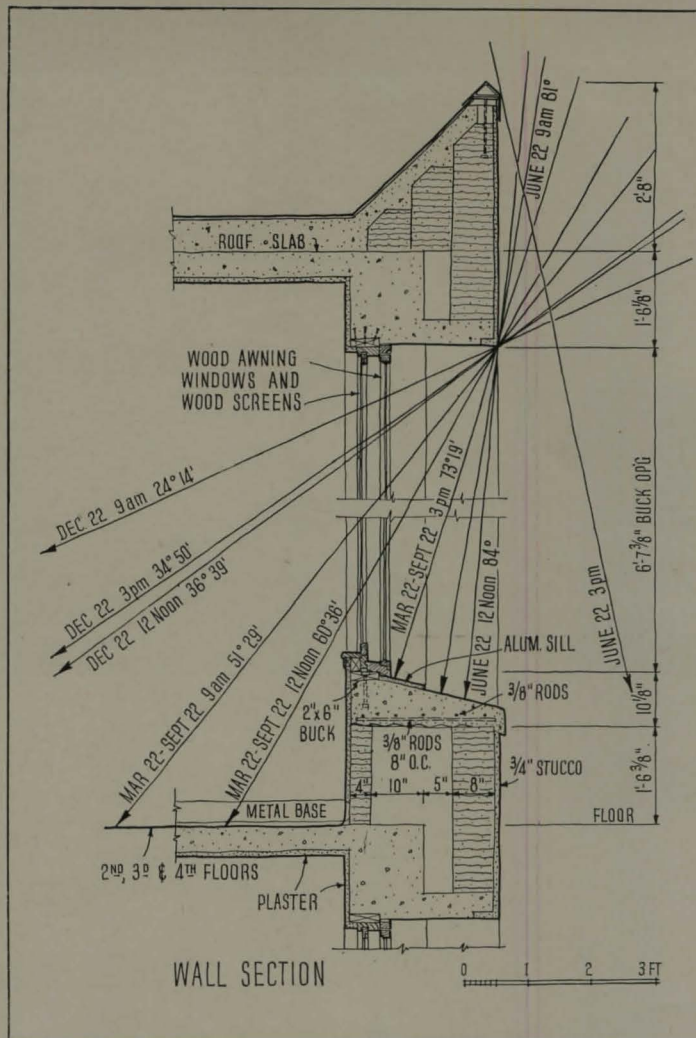


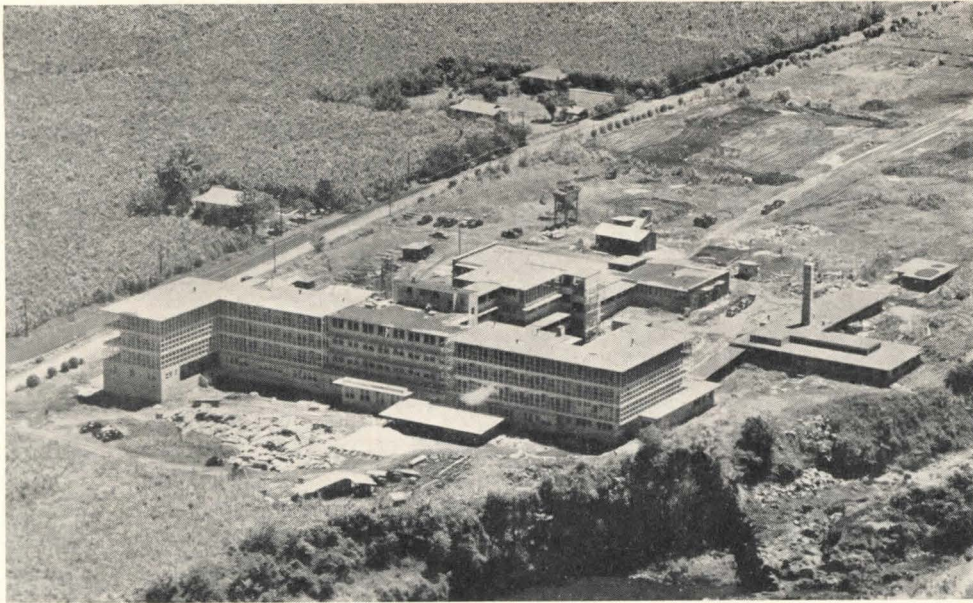
FOURTH FLOOR • WEST WING



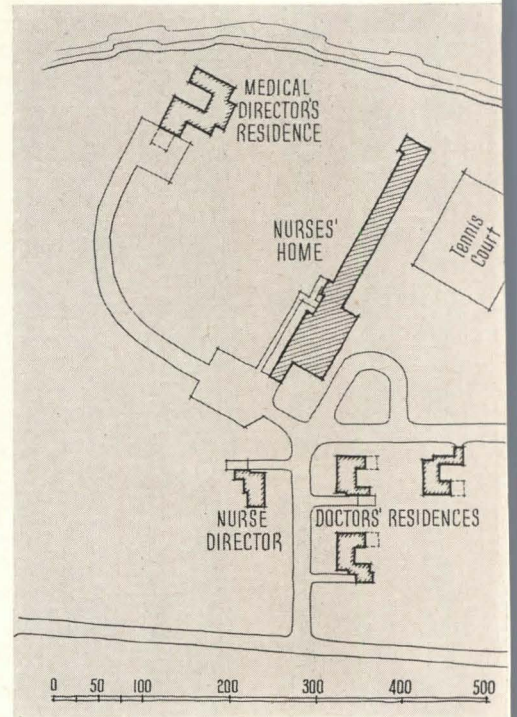
FIRST FLOOR • EAST WING

Although the sun's rays are no longer given much consideration from the standpoint of therapeutics in T.B., solar angles are important in any building in a semi-tropical location. Here they are shown for the critical dates; sunlight is barred from the rooms from March to September, penetrates deeply in winter

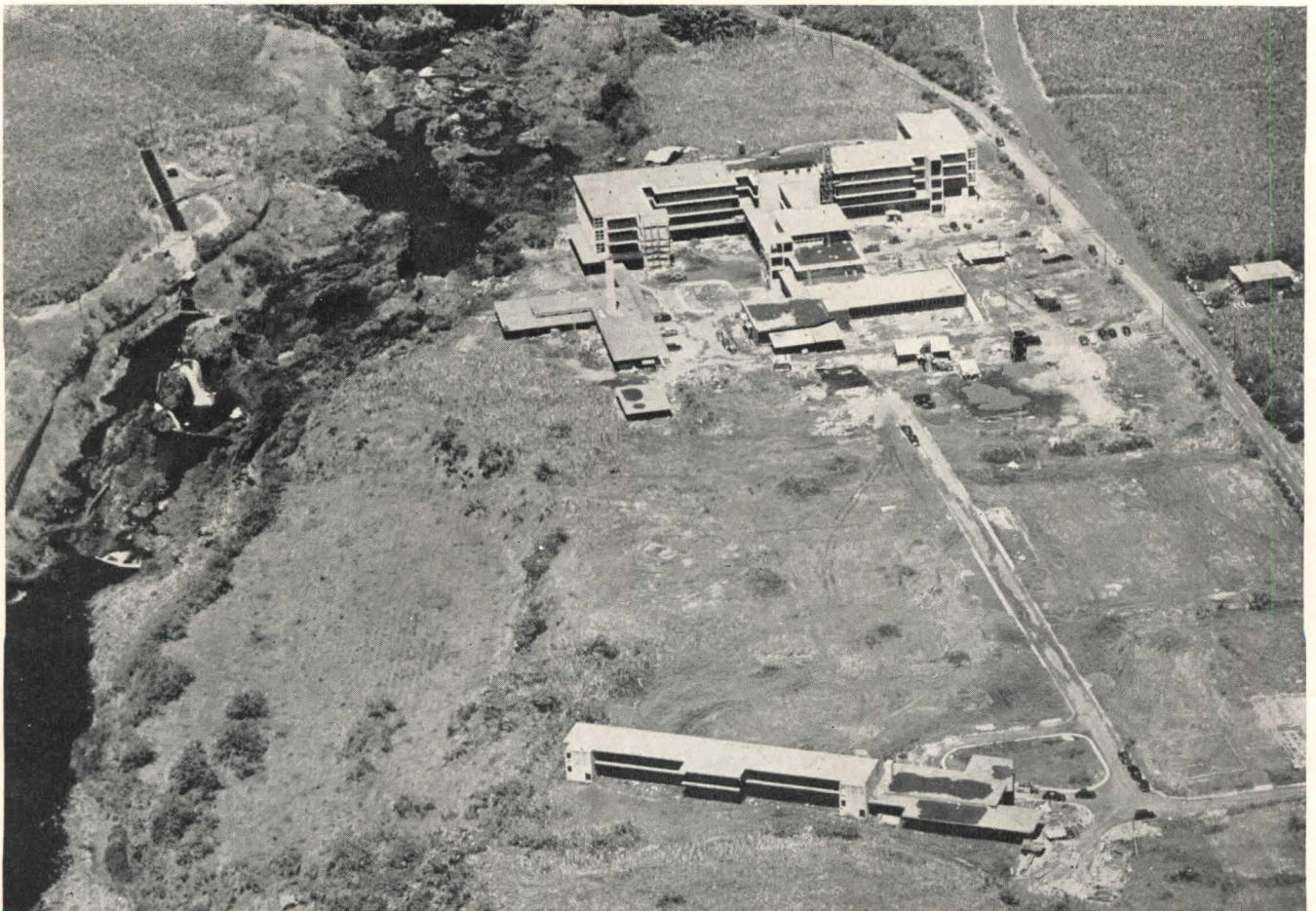


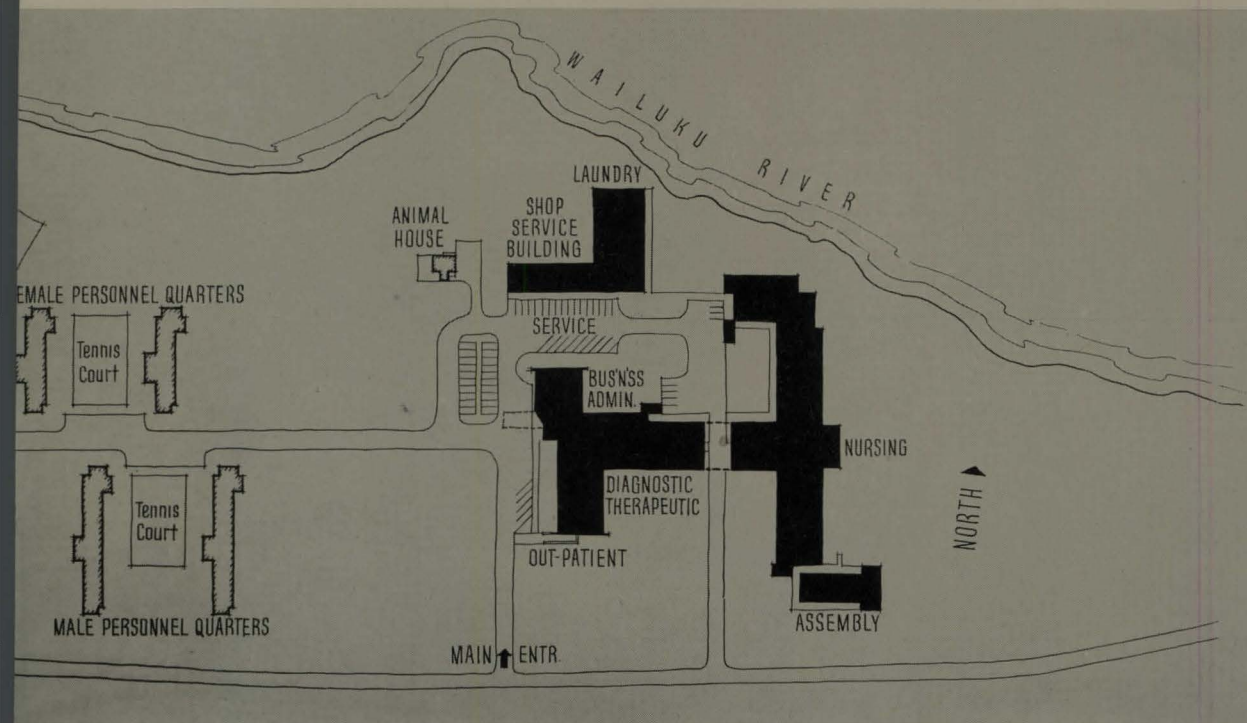


Located on the Wailuku River (water of destruction), the site for this hospital abounds in natural drama—waterfalls, views of sea and mountains and recently active craters and cane fields, not to mention frequent earthquake tremors



Aero Photo Surveys Photos





PUUMAILE TUBERCULOSIS HOSPITAL

Hilo, Hawaii

Merrill, Simms & Roehrig, Architects

Charles Erickson, Structural Engineer

H. Howlett, Sanitation Engineer

Hawaiian Dredging Co., Builders

T. Ralston, Electrical Engineer

Franklin Winch, Mechanical Engineer

THE PEACEFUL SETTING seen in the construction air views makes a grand enough site for any hospital, though the architect's notes mention the fact that in 1950 rain fall totalled 150 in. and there were 1702 seismic disturbances registered. The site commands an extensive panoramic view of the sea and mountains, including the craters of Mauna Kea and Mauna Loa. The hospital, contrary to the usual practices of the mainland, is oriented to the north and east to catch the cool trade winds. The climate is semi-tropical with relatively high humidity, and ventilation is important. Happily the best views are also to the northeast. This orientation, incidentally, takes account of the recognized fact that, except for certain special cases of T. B., the therapeutic value of the sun can be discounted; as a matter of fact careless exposure to the sun's rays in pulmonary T. B. cases can be injurious rather than beneficial.

All elements essential to a modern tuberculosis hos-

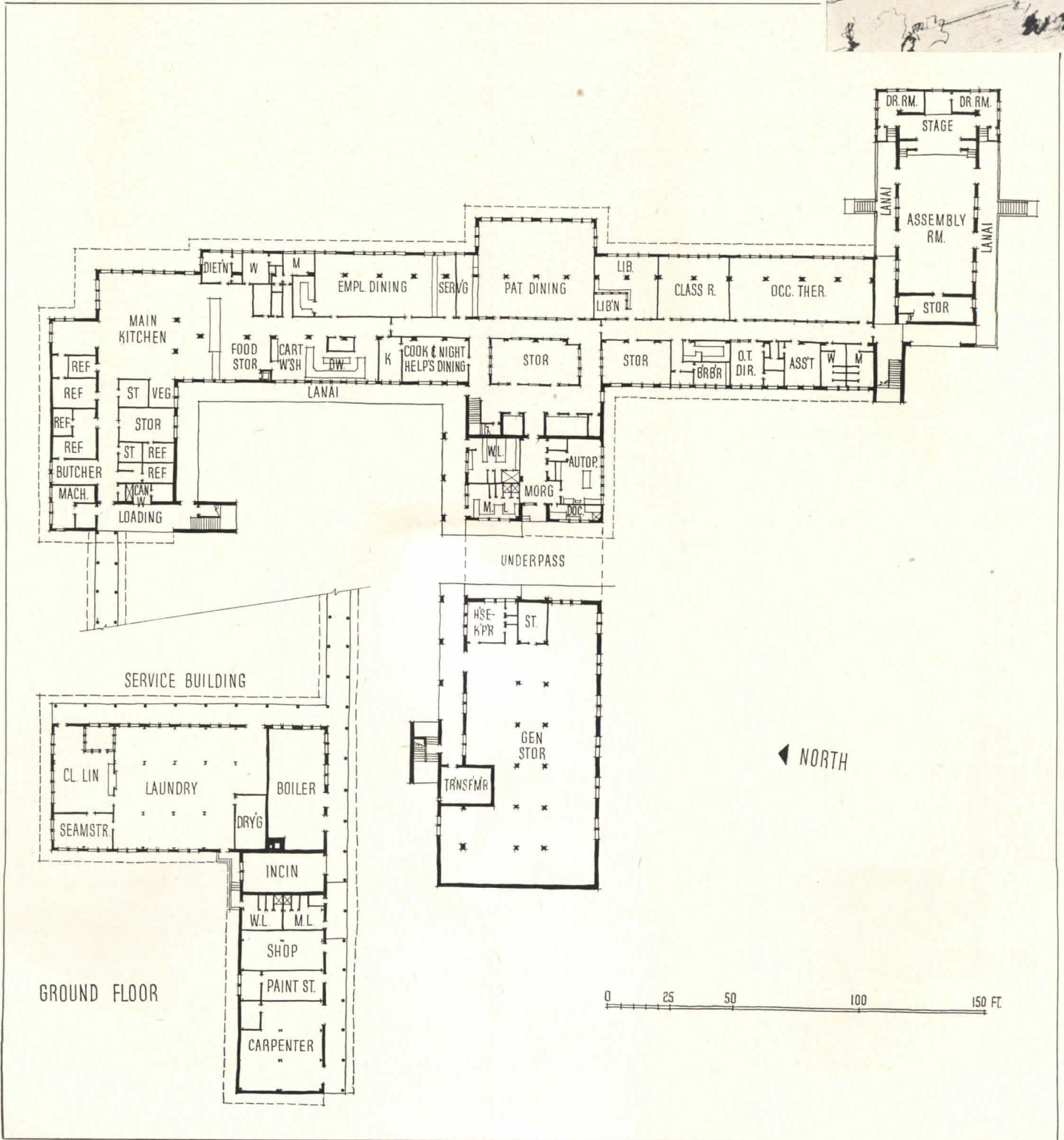
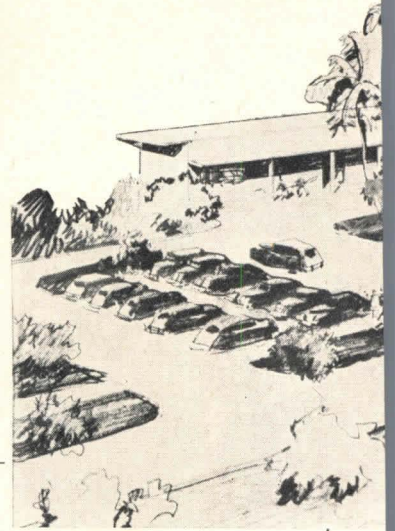
pital have been provided and properly located. The laundry, service building and animal house have been placed well away from the patient accommodations. A spacious auditorium and other patient facilities such as barber shop, beauty shop and a canteen have been provided.

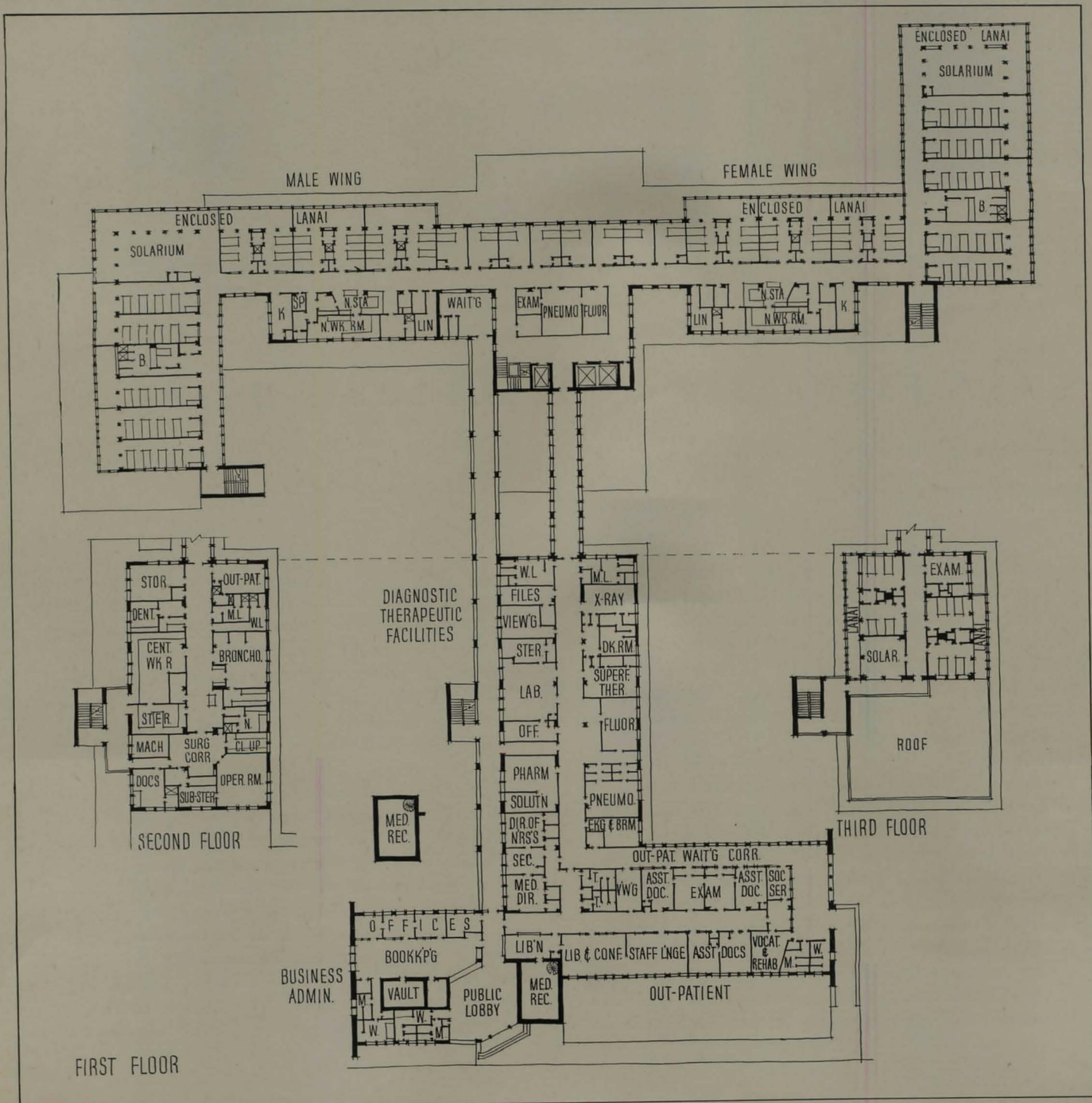
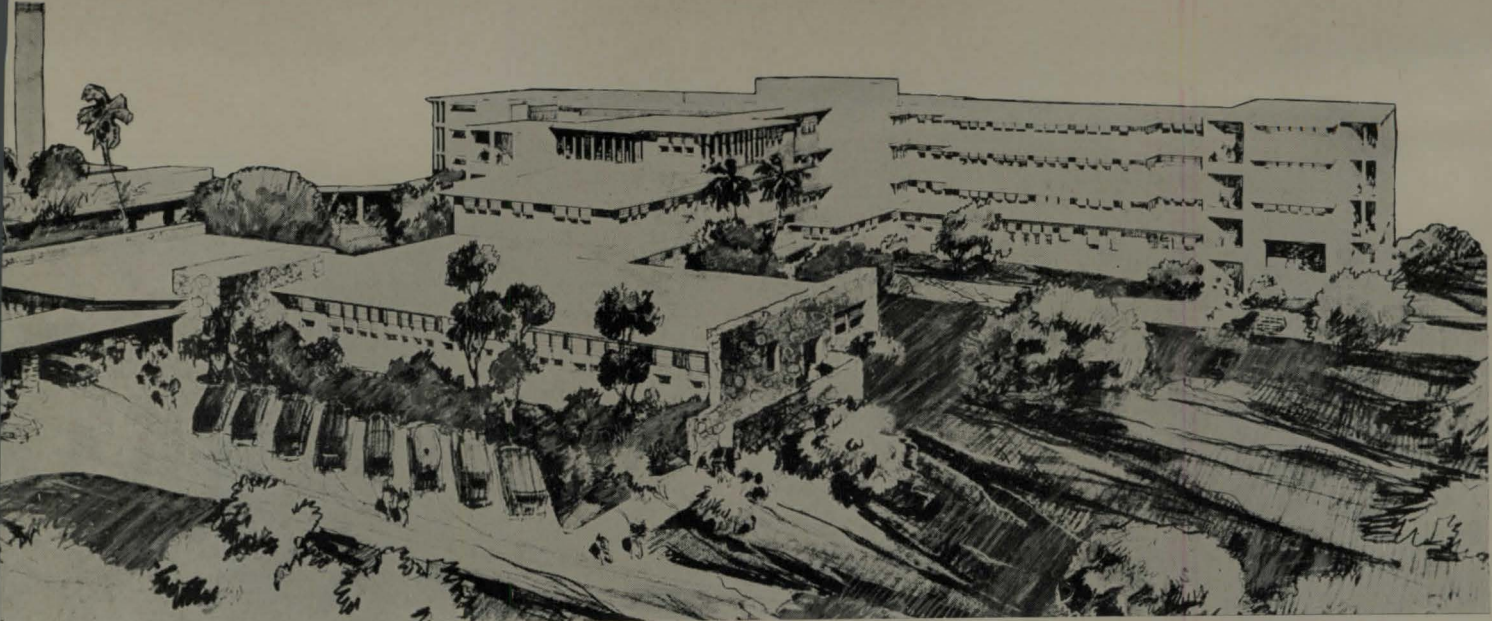
Secondary corridors are sometimes very desirable in hospitals to segregate the various lanes of traffic, but they are usually very costly to provide. However, in this hospital, covered walks on the first floor and open porches serve this purpose. These walks or lanai will serve for visitor traffic which can easily be controlled at the information counter in the main lobby.

Another interesting feature is the way in which the nursing floor services such as utility rooms, sputum disposal rooms, janitor closets, etc., have all been grouped into a very compact unit around the nurses' stations, saving innumerable steps for busy nurses.

PUUMAILE TUBERCULOSIS HOSPITAL

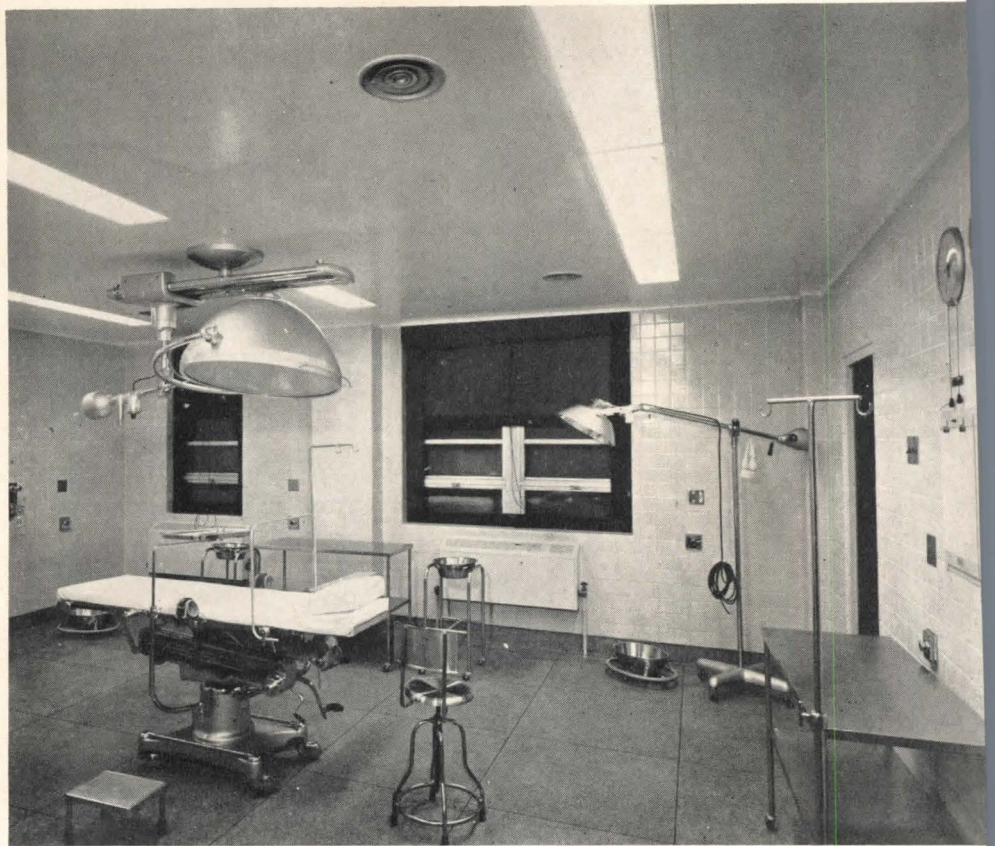
Nursing wings (opposite page) feature an unusually compact grouping of various nursing floor services—utility rooms, sputum room, janitor's closets—around nurses' station. Notice also that the enclosed lanai become a secondary corridor, a desirable feature in any hospital, but one that is usually too expensive to consider







Thompson's Commercial Photographers Photos



EAST TENNESSEE TUBERCULOSIS HOSPITAL

Baumann and Baumann, Architects

Knoxville, Tennessee

Will W. Griffin, Associate

WHILE THIS HOSPITAL IS NICELY REPRESENTATIVE OF modern T. B. hospital planning, it is not strictly an isolated institution, and therefore has some unusual features. Actually in certain departments it will accept patients from other state-owned T. B. hospitals. In other words, this is an early example of the manner in which hospital plans may be affected by coordination of hospitals in operation.

It is the outgrowth of a plan conceived by Governor Browning in 1937 for state-owned hospitals to be built in East, Middle and West Tennessee. The state later benefited by the Hill-Burton Act. Title to the 118-acre tract of land located seven miles north of Knoxville, where the 50-bed City of Knoxville and Knox County Tuberculosis Sanatorium is located, was given to the State of Tennessee. After completion of the new hospital the old existing facilities were leased to the city and county for the care of chronic patients.

Under this arrangement, the unusually extensive laboratory and operating suite on the fifth floor is in-

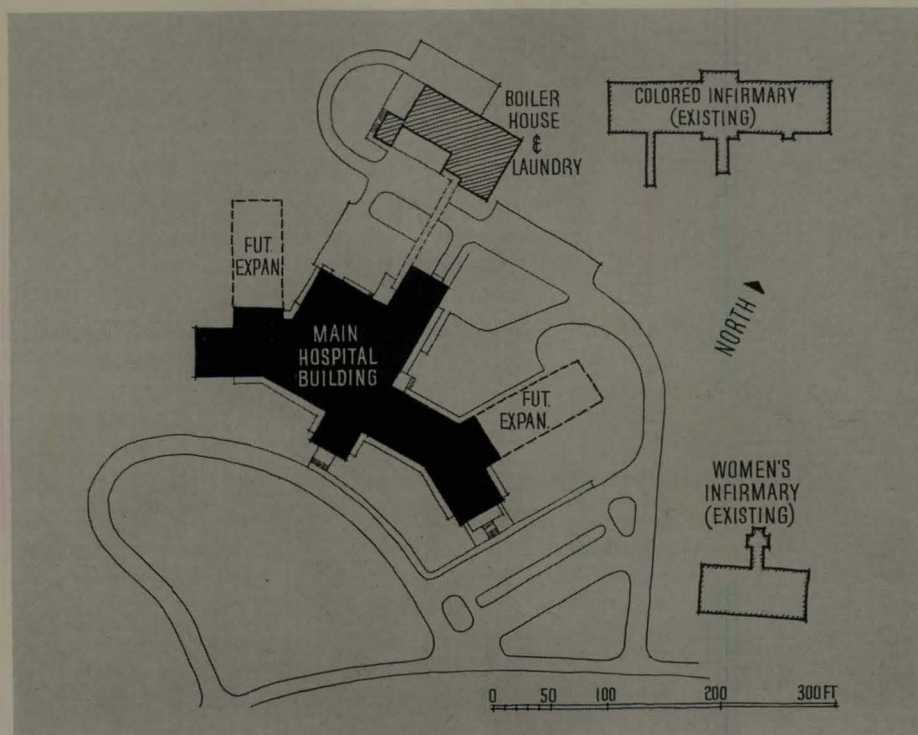
tended to perform all surgical operations and laboratory work for all the T. B. institutions in this area. In addition to necessitating the unusually large laboratory and operating suite, this arrangement also explains the reason for occupational therapy and rehabilitation facilities of such small size. Since many of the patients will be here only for laboratory check-up or for operations and recovery, there would be little opportunity for rehabilitation.

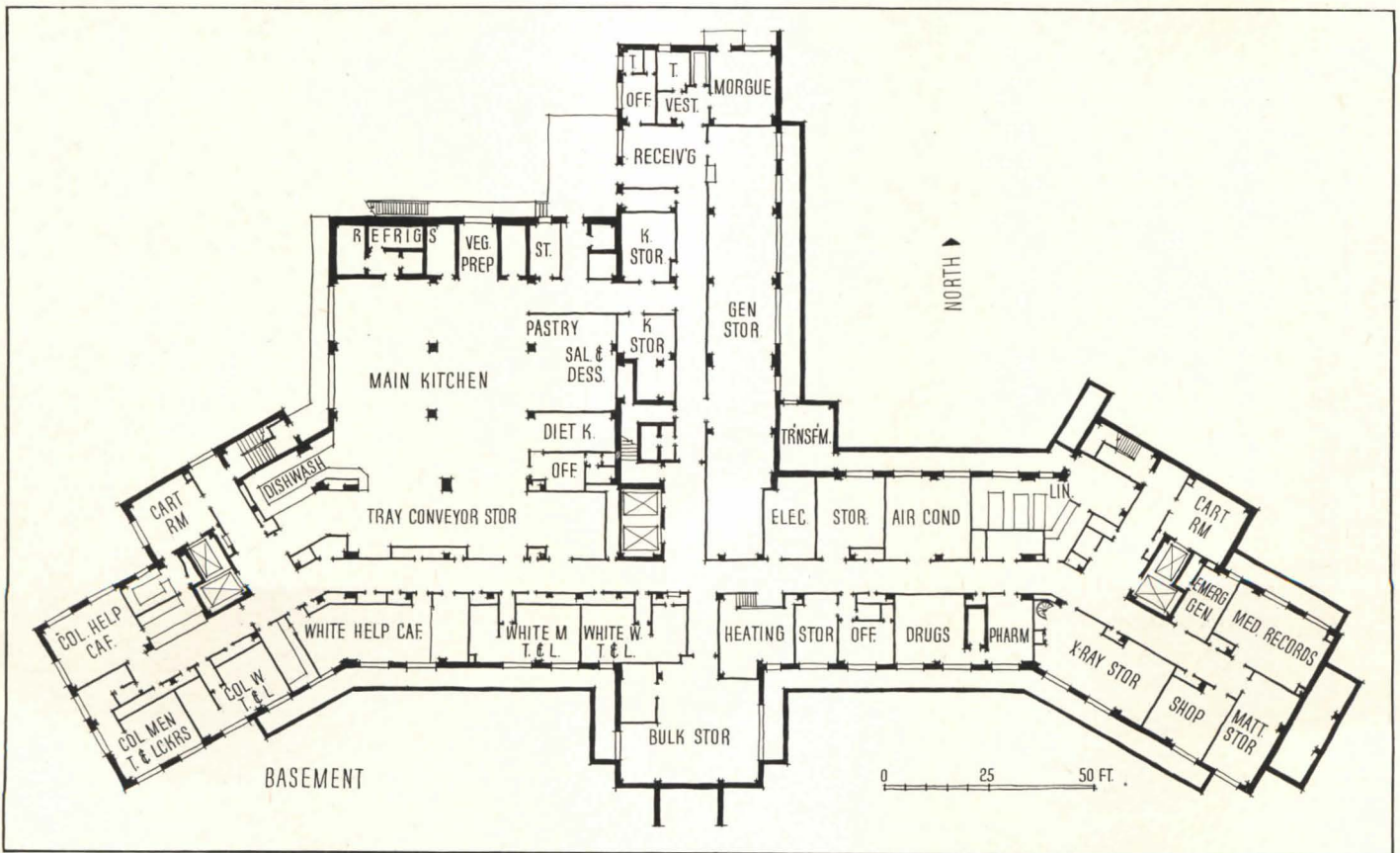
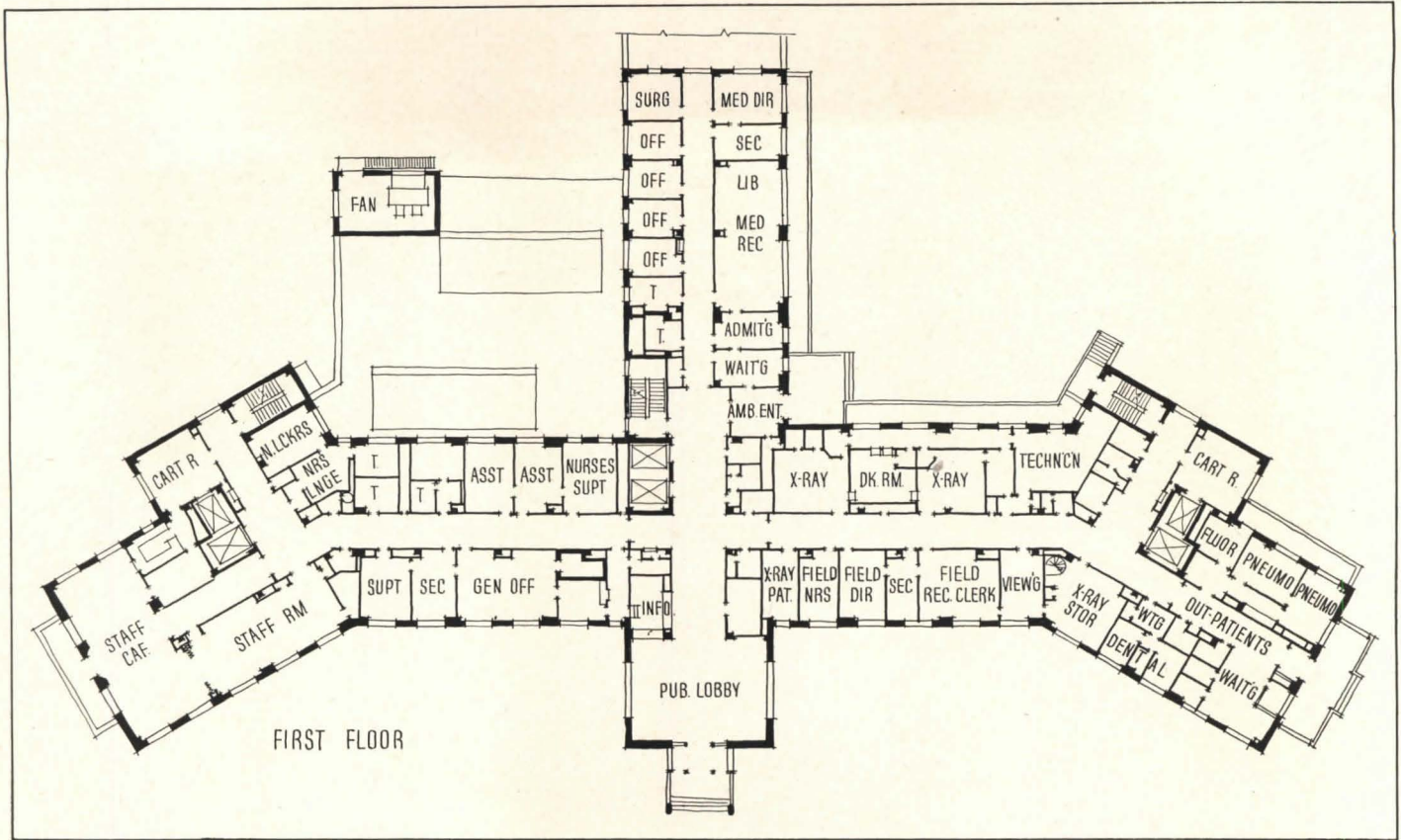
The plan has been thoughtfully studied with respect to traffic. The location of the elevators is especially good in this respect. The six cars are arranged in three banks of two, for two principal reasons. In the first place, the two outside locations will become focal points when nursing wings are added in later expansion (see site plan). Meanwhile this elevator arrangement puts service cars in widely separated locations, and thus minimizes service traffic toward the center of the building.

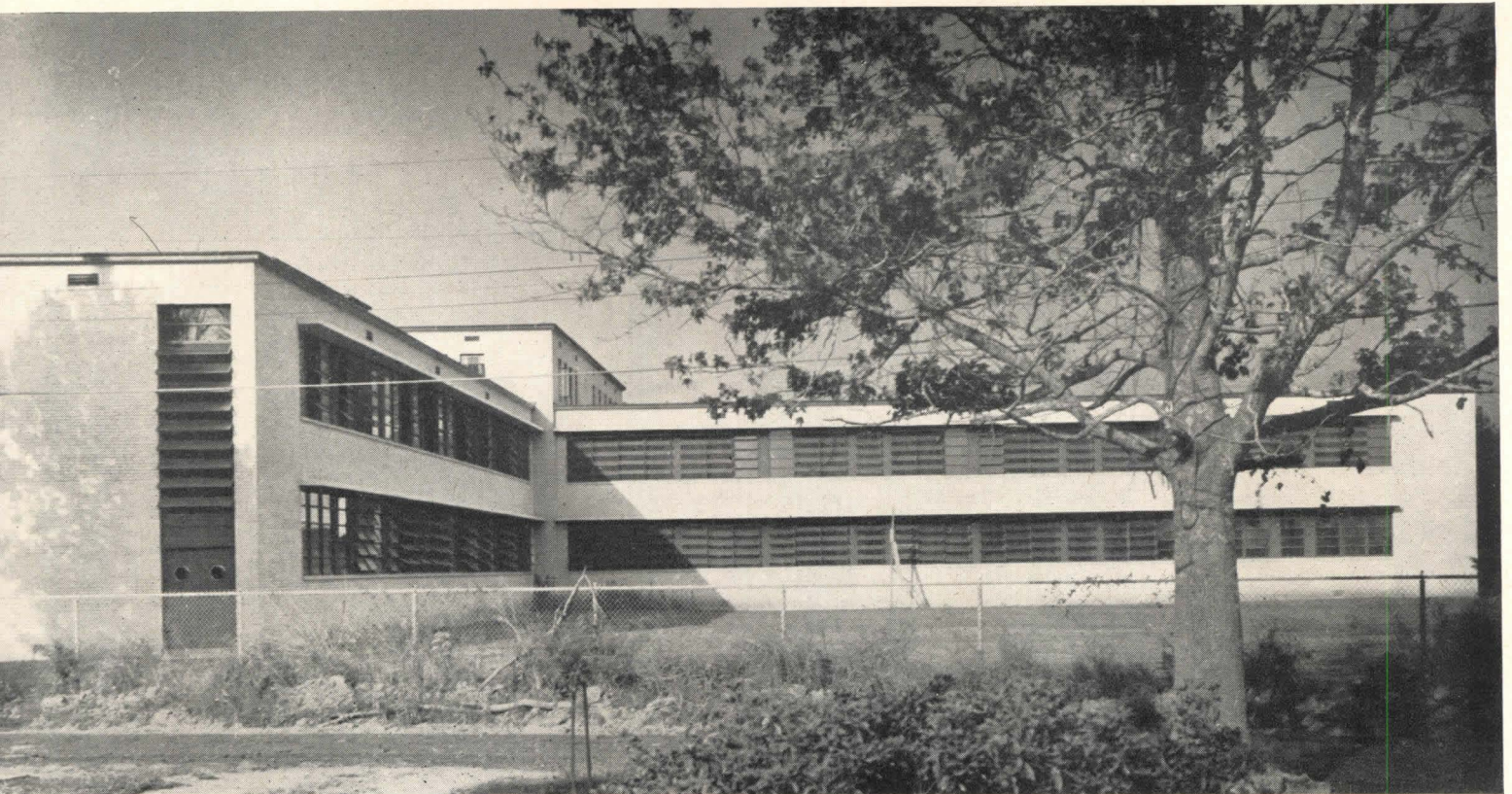
Traffic to and from the building is concentrated at three entrances — main entrance, O.P.D. entrance and



This new building adds 180 T.B. state-owned beds to an existing institution; old facilities are now operated by city and county authorities. It is planned for expansion by the addition of two nursing wings, as indicated







TUBERCULOSIS UNIT FOR GENERAL HOSPITAL

Lafayette Charity Hospital T. B. Unit, Lafayette, La.

Richard Koch, Architect

A. W. Thompson, Structural Engineer

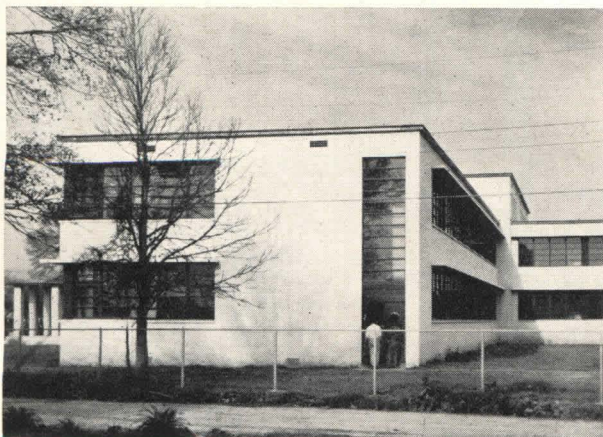
*James M. Todd & Associates
Mechanical and Electrical Engineers*

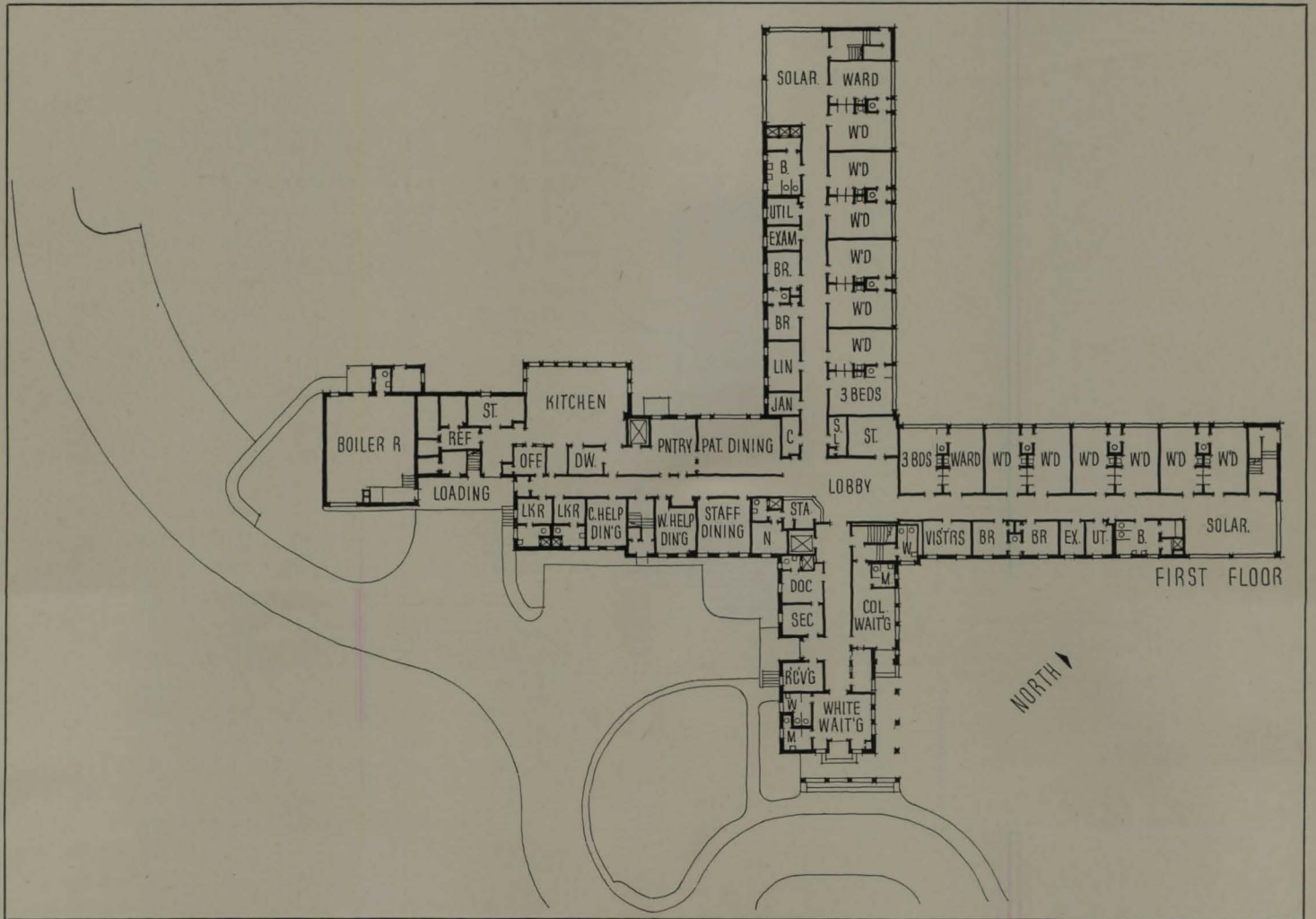
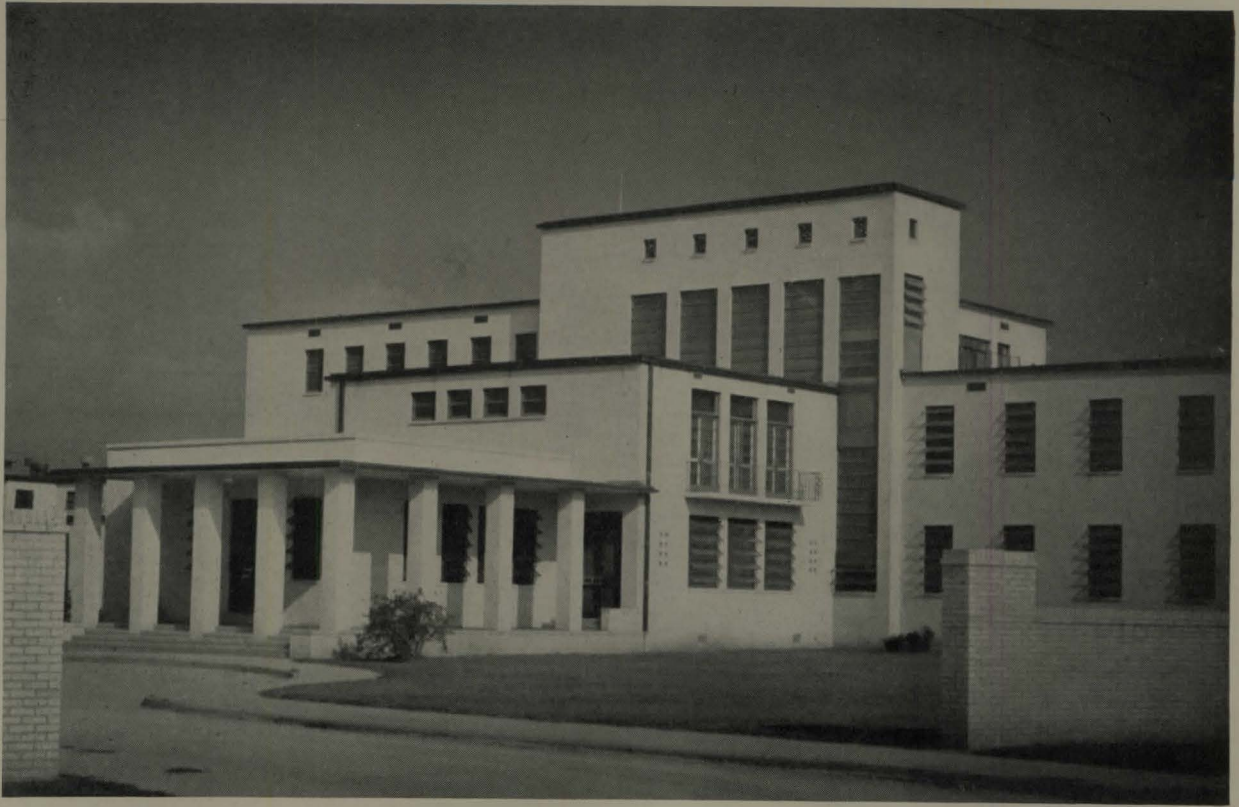
William S. Wiedorn, Landscape Architect

THE PROBLEM HERE was to design a 100-bed hospital for patients in the last stages of tuberculosis, with the idea that at some future date the building might be used as a chronic hospital, if the T. B. problem should come under control. As this building is a part of the Lafayette Charity Hospital, it was not necessary to plan a surgical unit, as all major surgery would be performed in the general hospital.

An important decision and the cause of much debate in the preliminary stages was the location of the clinic and operating room. The board of consulting doctors appointed by the state considered that as the number of out-patients would be negligible it would be better to place the clinic and operating room on the third floor, as the patients would be easily transferred from the wards by elevator to the third floor. The operations of the hospital have justified this decision.

It was the original intention that the wards would be on one floor, but this necessitated a scheme of spread out buildings, which also entailed costly management, so that it was finally decided to use a two-story scheme of wards, also with the idea of simpler separation of races. The lower floor is for colored and the upper for white, and the working out of separate waiting rooms presented a difficult problem. The wards were L-shaped,





LAFAYETTE CHARITY HOSPITAL T. B. UNIT

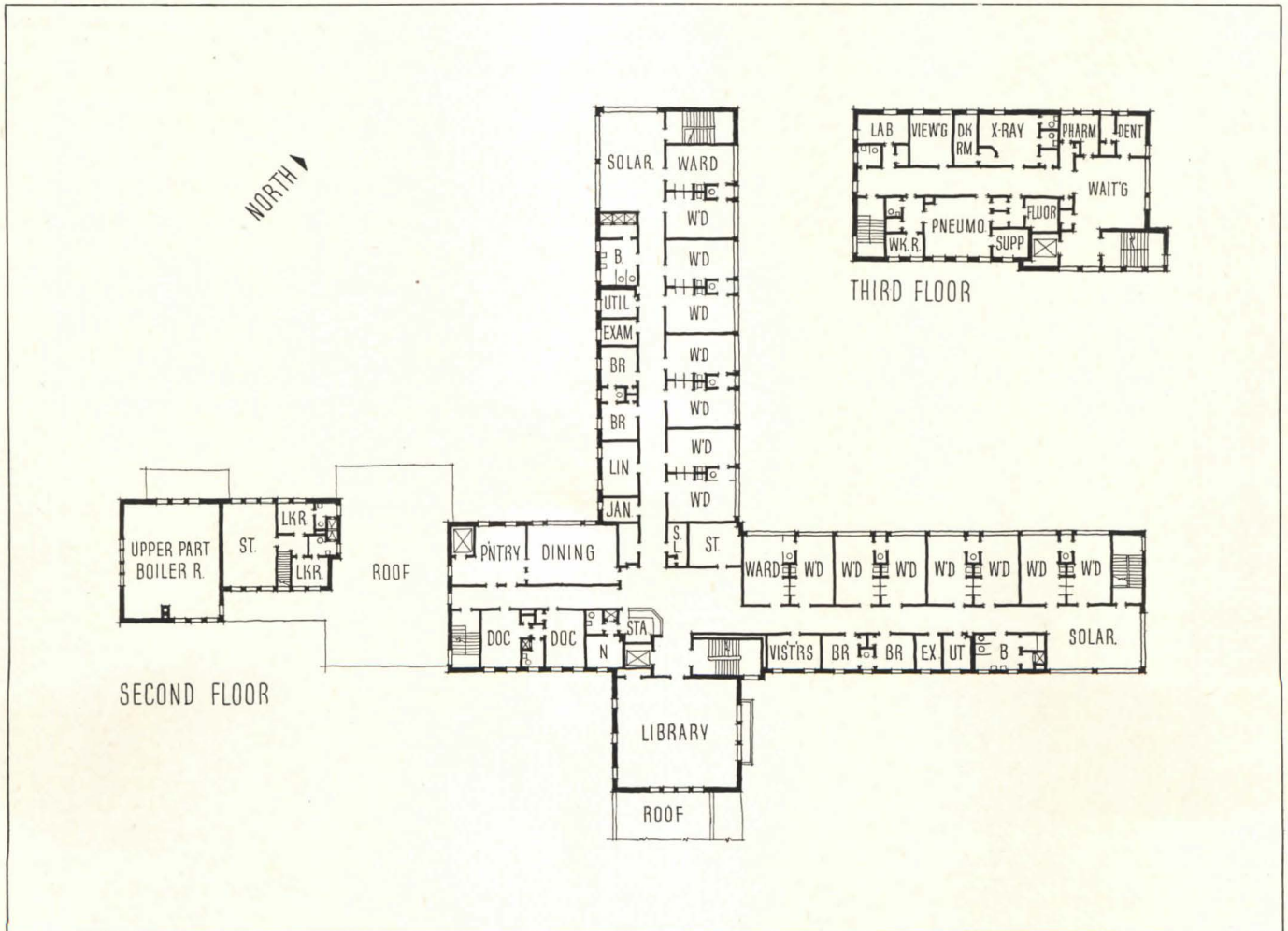
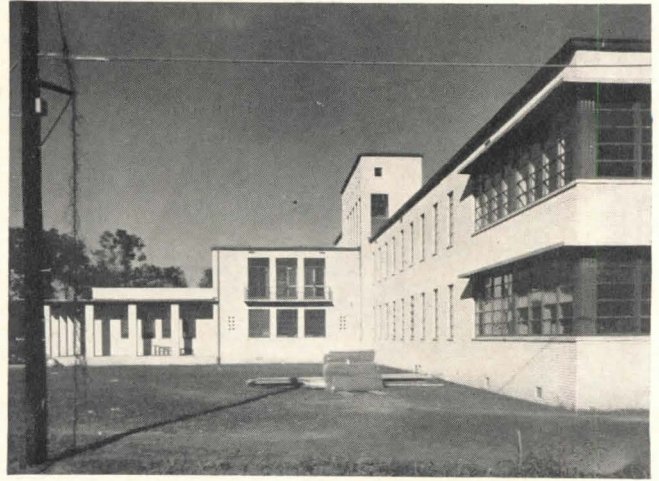
with a nurses' station at the intersection of the corridor, which simplified the problem of supervision with a limited staff.

The building was originally designed without a library. Shortly before the plans were finished it was felt that such a department, which also included occupational therapy, would be advisable, and at a later date would be necessary. The architect feels that the design might have been better had this unit been omitted or added in the earlier stage of the design.

The architect notes also that the space designated for visitors has not been used as originally intended. Instead visitors are taken to the solariums, and this practice has worked out quite nicely.

This is another of the modern hospitals in which a good deal of attention was paid to color schemes in the wards. Hospital authorities have expressed their appreciation for the beneficial effect of this extra attention to attractiveness in areas where patients spend so many weary hours.

Charles R. Armstrong (deceased) and David Geier, his successor, were consultants to the hospital board.





Photos Courtesy Libbey-Owens-Ford Glass Co.

Left: heat-absorbing glass in the skylight shuts out some of the sun's energy that otherwise would penetrate the studio of this house. Below: contrasted with the familiar application of tempered glass for the doors of the nurses' building is its use for school windows next to a playground, preventing breakage



TEMPERED GLASS

Photo Courtesy Pittsburgh Plate Glass Co.

POTENTIALITIES OF GLASS IN BUILDING

By Albert G. H. Dietz

Professor of Structural Engineering, Massachusetts Institute of Technology

GLASS CAN BE ROLLED, molded, drawn into fine filaments, foamed, given special patterns — all of these processes adapting it to building products. Some 30 to 45 elements can be added to or substituted for the basic constituents of glass (sand, lime and soda) to change the physical properties for various architectural applications. Iron, for example, markedly affects infrared and ultraviolet transmission; potassium increases resistance to weathering; magnesium increases abrasion resistance; cobalt gives a blue color; copper gives blue or red; boron makes possible heat-resistant glass.

In this article, principal emphasis will be placed upon the aspects of glass with which many architects may not be so familiar. Topics to be discussed include heat-absorbing glass; multiple insulating glass; glass block; glasses with electrically conducting surfaces; tempered glass; foamed (or cellular) glass; fibrous glass, used in a variety of ways by itself, and used as reinforcement for plastics.

Light Transmission Characteristics

It may seem surprising that transmission of the invisible ultraviolet and

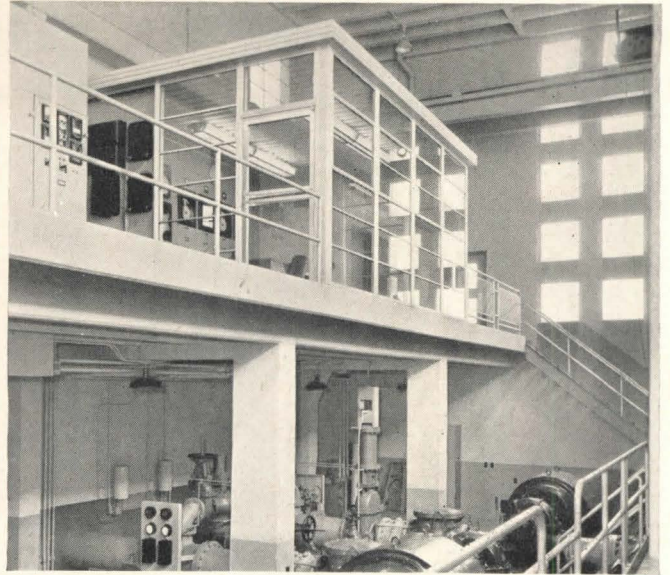
infrared rays through a number of glasses is more important than transmission in the visible range. In this connection it is useful to remember that about 3 per cent of the sun's energy lies in the ultraviolet region, about 44 per cent in the visible region, and about 53 per cent in the infrared region.

For a comparison of various glasses see Table 1. Regular plate glass (ordinary window glass would be similar) may be taken as a standard. This glass contains iron, in the vicinity of 0.05 per cent. If the iron content is decreased to approximately 0.02 per cent or less, water white plate glass is obtained. This

INSULATING GLASS

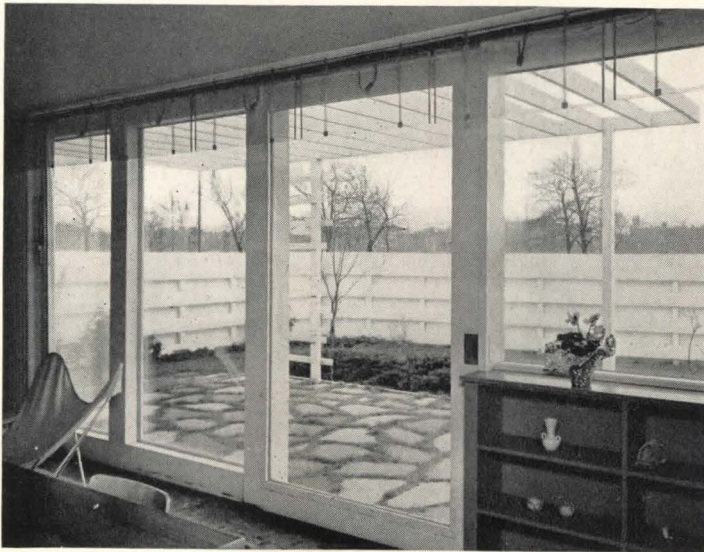


Hedrich-Blessing Studio Photo



Photos Courtesy Libbey-Owens-Ford Glass Co.

ELECTRICALLY CONDUCTIVE GLASS



Above: multiple-paned windows, commonly thought of these days as means to "open up" homes to the outdoors, yet keeping heat transmission down, also serve well as sound insulation. Glass walls of the control room at right deaden sound from machinery on the lower floor

Electrically conductive glass panels (at top of the room inside triple glazed doors) furnish auxiliary heat for this solar heated house at M.I.T. during long cloudy periods

A familiar sight is prismatic glass blocks for daylighting schools (below, left). They direct light to the ceiling (far right) reducing glare and equalizing illumination. Light from a test lab picks up patterns of typical glass blocks (center)

GLASS BLOCK

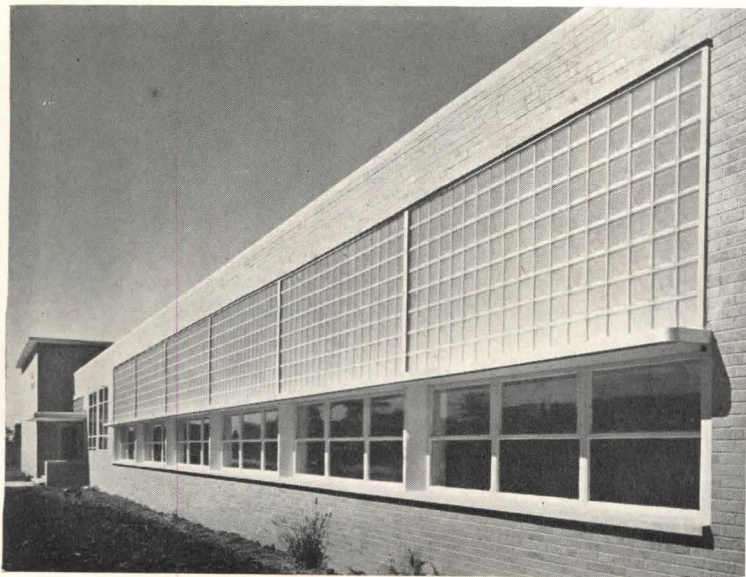


Photo by Rodney Morgan, Courtesy Museum of Modern Art

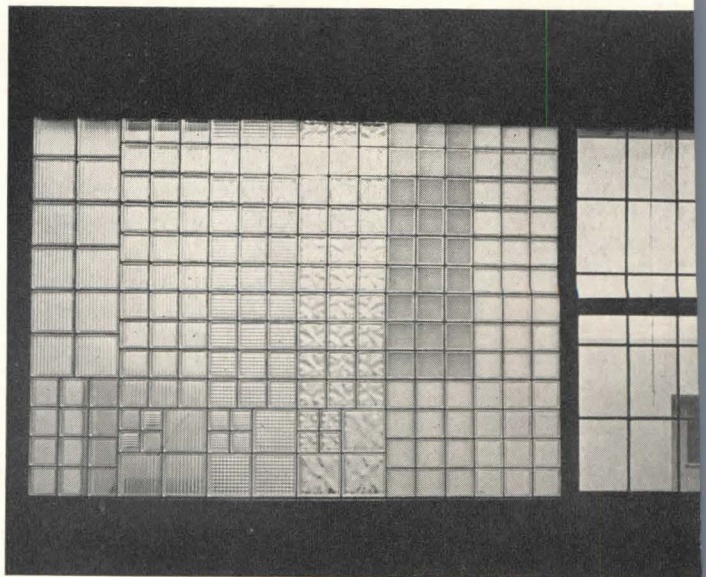


Photo Courtesy Pittsburgh Plate Glass Co.

gives the highest total solar transmission of all the glass—90.5 per cent. The other 9.5 per cent is mostly loss by unavoidable reflection from the surface of the glass.

If the iron content is increased by approximately 0.5 to 0.6 per cent, heat-absorbing glass is obtained, which will be discussed in somewhat greater detail below. Ultraviolet absorbing glass transmits only a small fraction of the ultraviolet, but quite strongly in the rest of the spectrum so that its total solar transmission is not markedly below that of regular glass. Opaque black structural glass transmits only in the infrared region but its total solar transmission is not far behind that of the transparent heat-absorbing glass.

Heat-Absorbing Glass

Heat-absorbing glass is compounded to transmit quite strongly in the visible region but to absorb strongly in the infrared. Some absorption of the red waves occurs in the visible region, so these glasses have a bluish cast, but the visible transmission is still better than 70 per cent. Of the total solar energy striking a $\frac{1}{4}$ -in. sheet of this glass, approximately 6 per cent is reflected, 39 per cent transmitted, and 50 to 55 per cent is absorbed. The absorbed energy is converted into heat and the temperature of the glass rises above the temperature of its surroundings, whereupon it radiates heat both outward and inward, roughly equally in both directions, so that some 25 to 28 per cent of re-radiation is added to the 39 per cent admitted directly, making a total of roughly 65–68 per cent of the incident solar energy which eventually finds its way into the

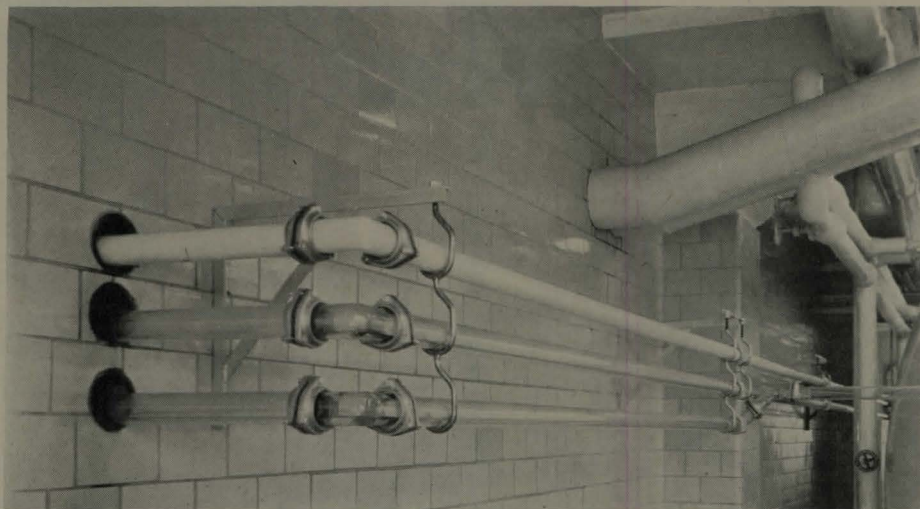


Photo Courtesy Corning Glass Works

Piping in a milk products factory is heat-resistant glass. Pipes must withstand quite high temperatures because they are flushed out with hot water and other cleansing agents

TABLE 1—SOLAR ENERGY TRANSMISSION OF GLASS

Type of Glass		A	B	C	D	E	F	G
Thickness, in.		.23	.24	.25	.21	.28	.20	.23
Solar Transmission Per Cent	Visible Light	91.0	90.0	86.0	80.5	72.0	46.5	0.0
	Ultraviolet	85.5	77.5	15.0	57.5	59.5	82.0	1.0
	Infrared	90.0	68.0	82.0	83.5	12.5	78.5	58.0
	<i>44 per cent of sun's energy is visible light, 3 per cent ultraviolet, and 53 per cent infrared. Values above are percentages of these amounts that pass through the glass</i>							
Total Energy		90.5	85.5	80.0	80.5	39.0	69.5	28.0
A. Water White		C. Ultraviolet Absorbing			E. Heat Absorbing			
B. Regular Plate		D. Flesh Tint			F. Blue Plate			
					G. Opaque Black			

interior and is converted into heat. This compares with approximately 85–88 per cent for regular glass, and serves to reduce the heat load proportionately.

Tempered Glass

Tempered glass will withstand three to five times the failing load of ordinary plate glass, some five to seven times the impact, and better than three times the thermal shock. When failure does occur, the fragments are small particles without the sharp cutting edges of ordinary glass shards.

Glass ordinarily has a tensile strength of approximately 6000 psi, as measured in bending, but a compressive strength in the vicinity of 20,000 psi. When being tempered, glass is heated uniformly to almost the softening point

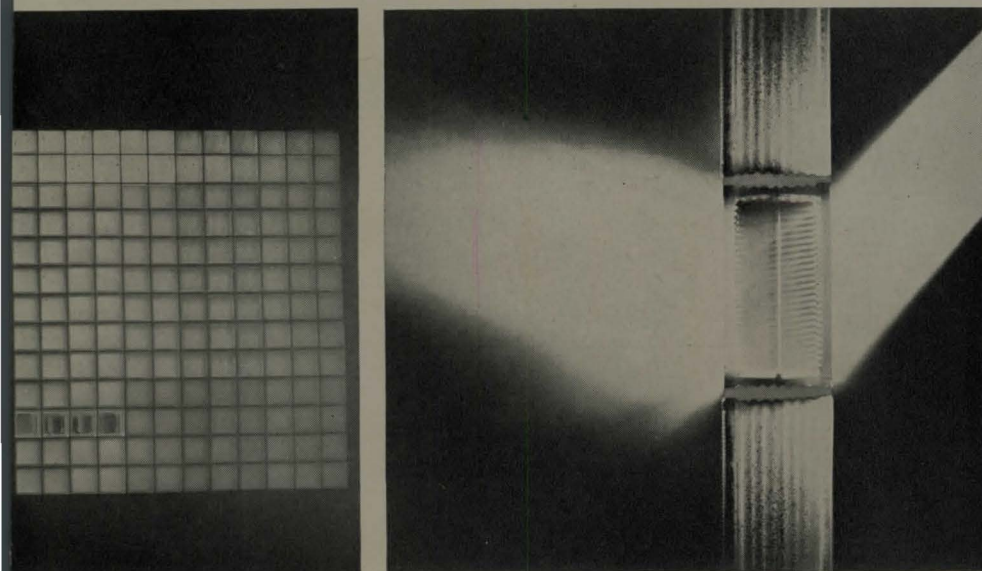
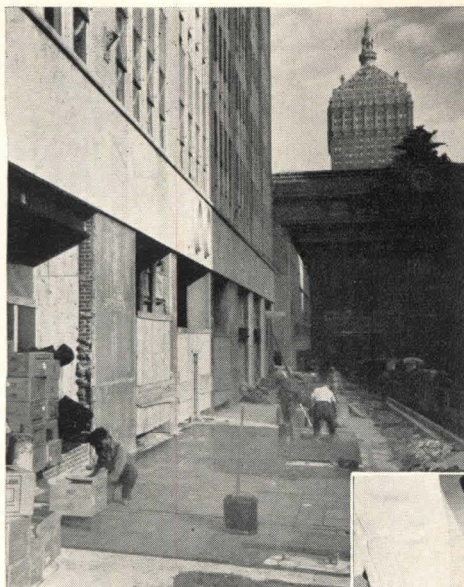


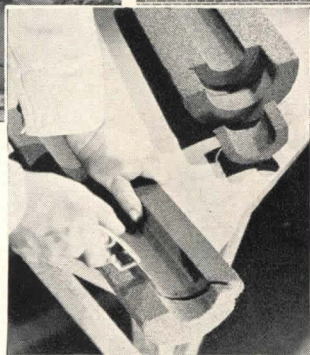
Photo Courtesy American Structural Products

FOAMED (CELLULAR) GLASS

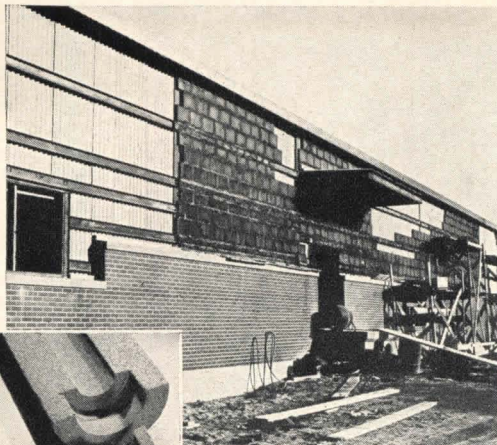
Photos Courtesy Pittsburgh Corning Corp.



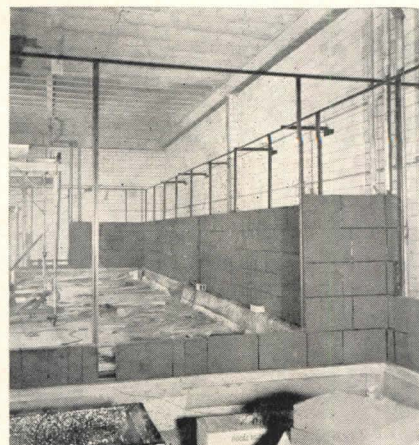
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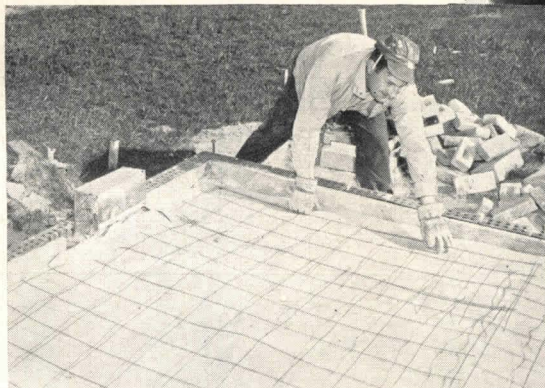
Above: 1. foamed glass insulates sidewalk snow melting coils from the ground. 2. pipe insulation is easily cut on the job. 3. lightweight insulating core of foamed glass is covered by corrugated siding in an industrial building. 4. partitions in bakery help maintain controlled temperature and humidity

FIBROUS GLASS INSULATION

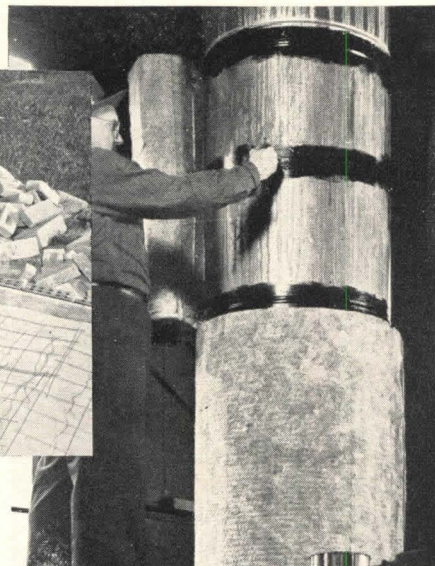
Photos Courtesy Owens-Corning Fiberglas Corp.



1



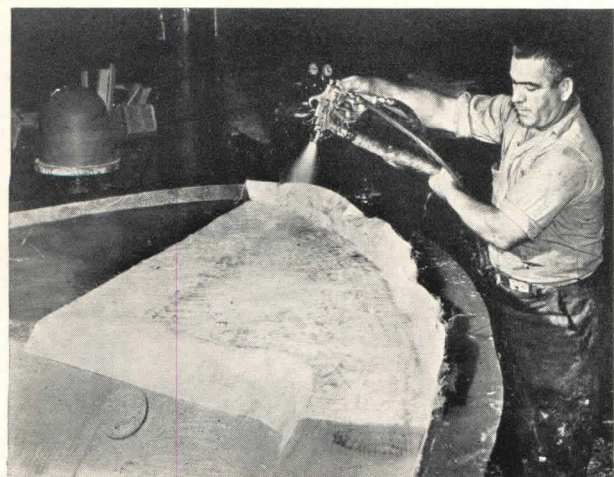
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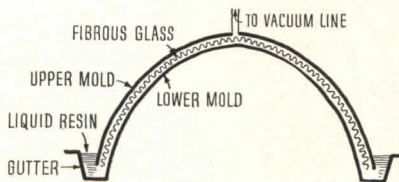
3

Above: 1. fibrous glass form board, under poured gypsum, covers roof of new pharmaceutical plant. 2. perimeter insulation seen protruding above reinforcing mesh serves as an expansion joint, reduces heat loss of floor slab. 3. applying duct insulation

FIBROUS GLASS IN PLASTICS

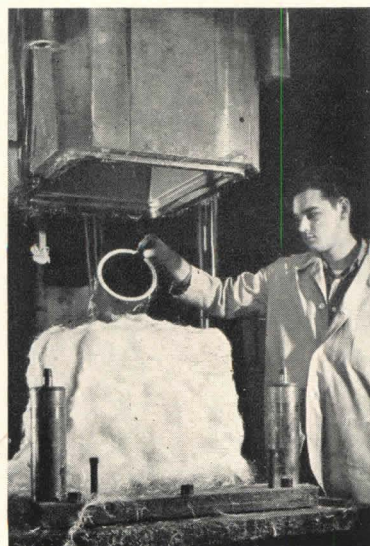


1



2

1. spraying plastic over fibrous glass mats to form a boat hull. 2. plastics are also made by drawing up the resin by vacuum. 3. shows a molding press which shapes the part after resin is poured on



3

and then subjected to rapid and uniform surface cooling. Surface layers harden in an expanded condition, and when the interior subsequently cools and attempts to shrink, heavy compressive stresses are set up in the surface while the interior is in tension. Before fracture can occur, the compressive stresses in the surface must be overcome and changed to tensile.

Because of the heavy but balanced internal stresses, tempered glass cannot be cut or deeply scratched, nor can deeply figured glass be tempered satisfactorily. Some figures are attainable, however, and glass can be cut to desired shapes before tempering. Glass doors and porthole covers are only two of many examples of tempered glass.

Multiple Insulating Glass

Glass is a relatively dense material and therefore is a fairly good heat conductor. The heat insulating value of glass depends largely upon the film of quiet air to be found on each surface, and the efficiency of the film in turn depends upon the velocity of the air moving over the surface.

If two sheets of glass are employed instead of one, four films of air are obtained, and if the two sheets are sealed together with an air space between, the air space becomes a good insulator whose value depends somewhat on its thickness, i.e., the distance between the sheets. (Insulating efficiency of an air space increases up to a width of about $\frac{1}{2}$ in., but does not increase appreciably with wider spaces.) If three sheets are used instead of two, the insulating value is increased, but not by the same amount. Table 2 brings out the trend. With $\frac{1}{4}$ -in.

Type of Glazing	Kind and Nominal Thickness, in.	Number and Width Air Spaces, in.	U at 3 mph	U at 15 mph
Single	Sheet, 0.090	None	0.928	1.185
Single	Plate, $\frac{1}{4}$	None	0.914	1.148
Double	Sheet, 0.090	1($\frac{1}{8}$)	0.657	0.759
Double	Sheet, 0.090	1($\frac{3}{16}$)	0.588	0.711
Double	Sheet, $\frac{1}{8}$	1($\frac{1}{8}$)	0.604	0.738
Double	Sheet, $\frac{1}{8}$	1($\frac{1}{4}$)	0.546	0.652
Double	Plate, $\frac{1}{4}$	1($\frac{1}{8}$)	0.611	0.726
Double	Plate, $\frac{1}{4}$	1($\frac{1}{4}$)	0.540	0.646
Double	Plate, $\frac{1}{4}$	1($\frac{1}{2}$)	0.479	0.580
Triple	Plate, $\frac{1}{4}$	2($\frac{1}{4}$)	0.396	0.468
Triple	Plate, $\frac{1}{4}$	2($\frac{1}{2}$)	0.341	0.397

* Btu/hr/sq ft/F, measured on glass 30 by 30 in.
† Table by Dr. C. B. Watkins, from Chap. 17, *Engineering Laminates*, edited by Albert G. H. Dietz, John Wiley & Sons, Inc., 1949

thick double plate glass and $\frac{1}{4}$ -in. air space, the heat loss is approximately halved, and with triple glass and two air spaces a further reduction of approximately $\frac{1}{6}$ is achieved.

Multiple glazing units are made with clean dry air sealed between the sheets. The various manufacturers employ a variety of seals along the edges, but all attempt to have the air dry enough so that the dew-point, which would cause fogging of the interior surfaces of the glass, is not reached above about -60 to -70 F. The seals, as quoted by at least one manufacturer, are expected to hold even if one sheet of glass is at a temperature of -80 F and the other at

$+170$ F. For special purposes, such as display cases subject to jarring and vibration, the glass may be the tough tempered variety.

One manufacturer is currently perfecting a double glazed unit in which the edge seal, itself, is glass. In effect the two sheets of double-strength window glass are "welded" together by means of electric current. This development augurs well for the tremendous increase in the use of insulating glass. Maximum size being made now for test installation is 48 by 30 in.

Electrically Conductive Glass

Glass is an excellent electrical insulator, but metallic oxide coatings can be applied to make the surfaces sufficiently conductive to carry appreciable currents at ordinary voltages. Under these conditions the electrical power is converted to heat which can be employed for a variety of purposes such as radiant heating and de-icing of windshields on automobiles and aircraft. The glass has also found use in railroad passenger cars to overcome the "cold shoulder" effect of windows. In such installations the treated glass is the inner sheet of a multiple glazing unit. An experimental house installation is shown on page 162. In this small solar house, the units are used to provide radiant heat when needed. The glass in the south-facing windows, incidentally, is double and triple multiple glazing. These electric

4. preformed fibrous glass mats for the boxes in the foreground are stacked near one of the molding presses; more complicated parts with spiralled grooves can be seen in the background. 5. large corrugated sheets of reinforced plastic form decorative partition



4



5

Photo courtesy Corrugulux Corp.

panels operate at temperatures between 120–125 F, with a power consumption of approximately 75–100 watts per sq ft.

The oxide coating is claimed to be as durable as the glass itself and, in the 15 to 20 millionth-inch thickness employed, does not appreciably reduce the light transmission of the glass. Temperatures up to 480 F can be withstood by the treated glass itself, but in safety glass the plastic interlayer limits the temperature to 150 F.

Glass Block

By now, glass blocks have become familiar items of building construction. The blocks consist of two halves fused together at high temperature into a single hollow unit with air of low moisture content entrapped at about $\frac{1}{3}$ atmospheric pressure.

Depending on the pattern, glass blocks may be translucent or semi-transparent, or they may have an internal prism pattern which directs or diffuses the light entering from outdoors. These prism-patterned blocks are especially effective in reducing glare and in equalizing the level of illumination in the interior space. The directional type has been found effective in transmitting light from the exterior walls toward the interior by directing the light upward against the ceiling, from which it is reflected downward and inward.

To be effective, this pattern requires reasonably unobstructed ceilings maintained at high reflectance values, preferably matte finishes giving diffuse rather than specular reflection.

As the position of the sun shifts, the internal directed pattern of light is also bound to shift somewhat, but the general upward and inward direction is maintained.

One type of prismatic block has been designed to correct for changing azimuth of the sun. This is accomplished by vertical ribs on the exterior face which redirect the light inward. By this device, the inside of the block is uniformly lighted and the total amount of light is increased. Ribs on the inside face diffuse the light horizontally.

The diffusing type of prism is employed to give a general diffusion of light in all directions, not specifically upward and inward. It is used where ceilings cannot be maintained at high reflectance or where serious obstructions occur in the ceilings.

Blocks may be single cavity or double cavity. The coefficient U^* of thermal conductivity in still air is about 0.40

* Btu/hr/sq ft/deg F

and 0.31 for single cavity and double cavity blocks, respectively, and in air moving at 15 mph the U factor rises to about 0.47 and 0.36 respectively. The value 0.47 is less than half that of single glass sheets, better than that of 8-in. masonry, and about double that of an uninsulated frame wall consisting of clapboard, building paper, sheathing, lath and plaster. Solar heat gain is estimated at approximately 250 Btu per sq ft per day at 40 deg North Latitude for an average August 1, day.

Foamed (Cellular) Glass

Because of its incombustibility and impermeability to moisture, foamed glass is finding use in the building field primarily as insulation in fire-resistive construction. It is built in as the core of masonry walls, is used as roof slab insulation and is employed in various other insulating capacities. One application is as the core in sandwich and curtain wall structures using various ceramic, masonry and metallic faces.

Glass is foamed by causing gas to be evolved in the mass at high temperatures. The individual cells formed by this process are not interconnected. Because of this, moisture vapor transmission is reduced to zero, and water absorption and adsorption — confined to the surfaces — are reduced to practically nothing. Thermal conductivity depends on the temperature and varies from about 0.40 to 0.55 Btu/hr/sq ft/deg F at temperatures varying from 50 to 300 F. The weight varies from 9 to 11 lb per cu ft.

Fibrous Glass

Glass, usually considered to be hard and brittle, possessing little ductility and only moderate tensile strength, can be drawn into extremely fine filaments which are highly flexible and very strong because of their fineness. As the diameter becomes greater, the strength drops off

rapidly and eventually approaches that of ordinary glass.

Filaments may be used in continuous form for the highest strength fabrics, or they may be cut into various lengths of staple and twisted and woven into conventional fabric weaves. Resistance to weathering, living organisms, chemicals, elevated temperatures and other deteriorating agents is much the same as regular glass. Abrasion resistance may be low, depending upon the usage.

Many of the applications of glass fibers depend not only upon their strength and flexibility, but upon the fact that they can be felted loosely or firmly to entrap dead air which provides insulation against the flow of heat, and may also be employed as sound insulation. In still another form, the fibers can be matted to provide air filters.

Thermal Insulation, Sound Absorption. In building, one of the most familiar applications of fibrous glass is for thermal insulation. Common types include:

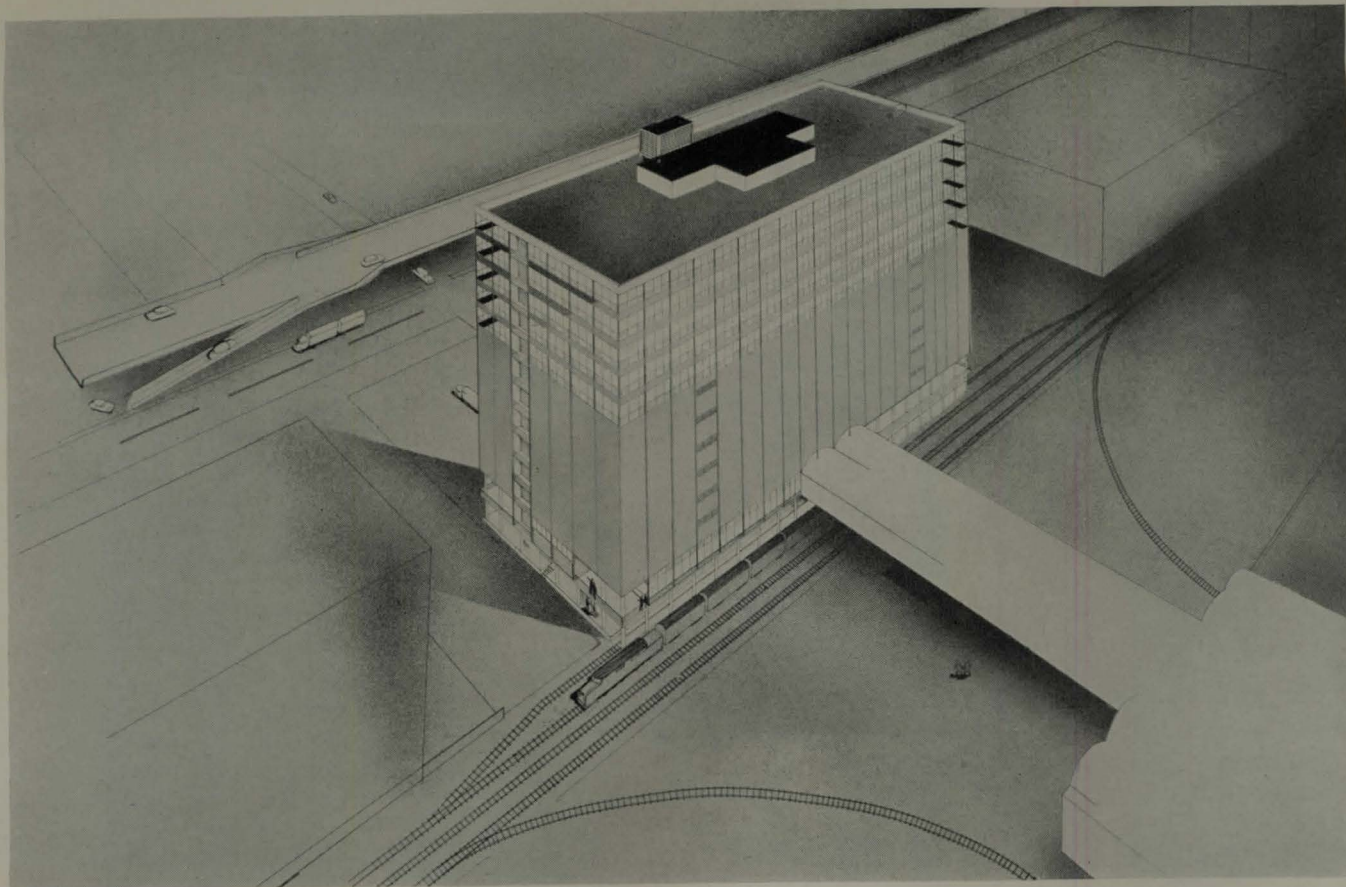
1. Batts and roll blankets weighing approximately $1\frac{1}{2}$ lb per cu ft, made of standard fiber, with or without resin binder, usually with a vapor barrier paper on one side.
2. Blowing and pouring wools for use in existing structures or in odd spaces not suitable for the batt and blanket types.
3. Roof insulation, made in resin-bonded slab form and covered on the top surface with kraft paper and a heavy coating of asphalt to provide a good mopping surface.
4. Cold storage board made of resin-bonded fibers and enclosed on all sides and edges with a heavy, low-porosity asphalt coating.
5. Floor slab insulation, similar to the cold storage board.
6. Blankets of standard unbonded or resin-bonded wool faced on one or both sides with wire mesh or metal lath.

(Continued on page 226)

TABLE 3—SOUND ABSORPTION CHARACTERISTICS OF RESIN-BONDED STANDARD GLASS FIBER

Density, lb/cu ft	2.0	4.25	4.25	6.0	9.0
Thickness, in.	1	1	2	1	1
Surface	Unpainted	Unpainted	Unpainted	Unpainted	Painted
Size Tested, in.	24 x 36	24 x 36	24 x 36	24 x 36	12 x 12
Noise Reduction Factor *	.60	.70	.85	.75	.75

* This is the average of the sound absorption coefficients at frequencies of 256, 512, 1024 and 2048 cycles per second, given to the nearest 5 per cent



Proposed Transfer Building for warehousing and light industry

STUDY FOR AN IDEAL PORT FACILITY

Made by Joseph A. Merz and Raniero Corbelletti

WHEN PRATT INSTITUTE students Merz and Corbelletti chose the study of an ideal port facility for New York City as their thesis, they picked a type of building sorely neglected in most major sea-ports. They felt it deserves special attention today since lack of coordination between piers, trucking and train service

and warehousing not only delays the flow of goods, but increases traffic congestion throughout the cities. They chose New York for their study because of the opportunity for personal observation and research.

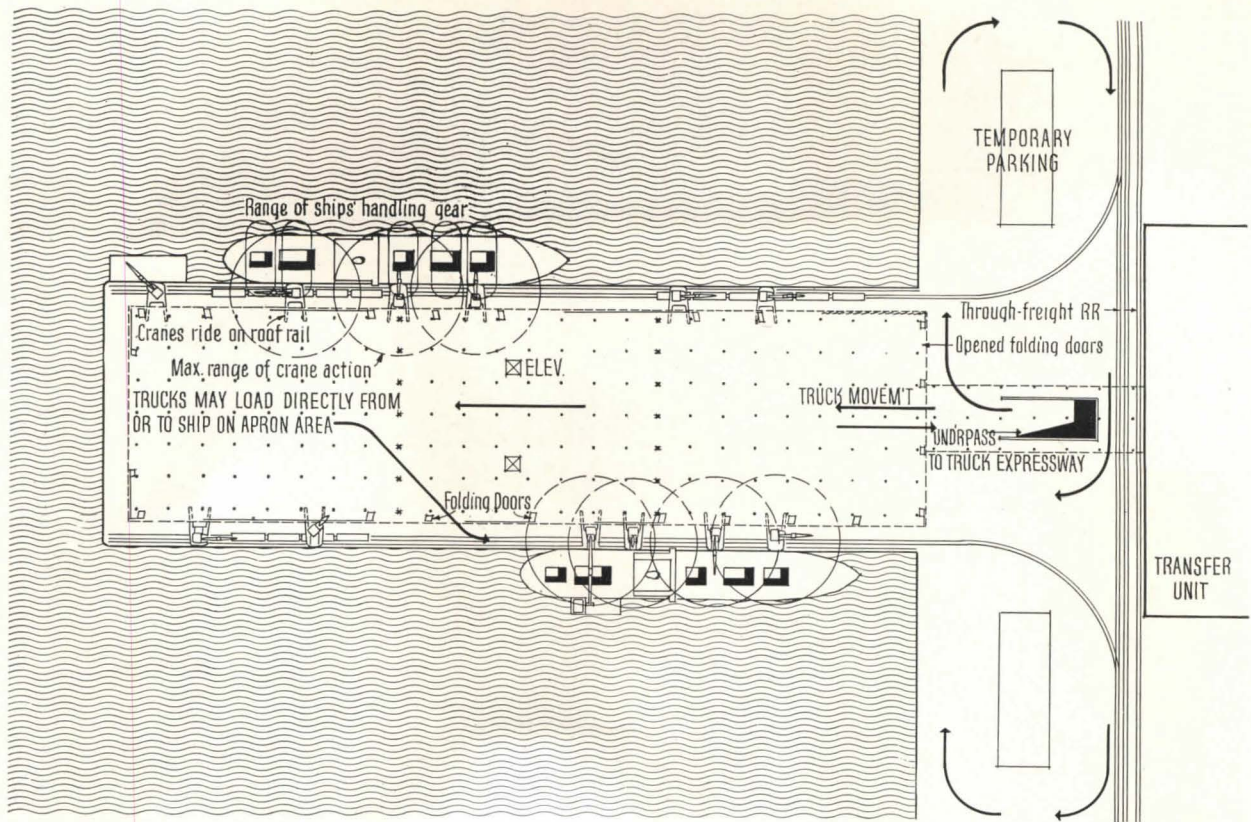
The students found that when a ship comes into port (New York) carrying

general cargo, approximately 30 per cent is destined for either long- or short-term storage, while approximately 40 per cent will go out by truck and the other 30 per cent by train.

Piers they inspected have no direct connection to trains, so additional handling by trucks is necessary. Also they

Proposed Pier Structure





Pier, First Deck

discovered that it is difficult for trucks to go directly to piers. According to their figures, an average truck consumes three hours completing its tour of a pier, two of these hours being spent waiting. They estimate that truck delays at steamship piers and waterfront railroad stations now cost local and outside users of the port of New York about \$9,000,000 a year.

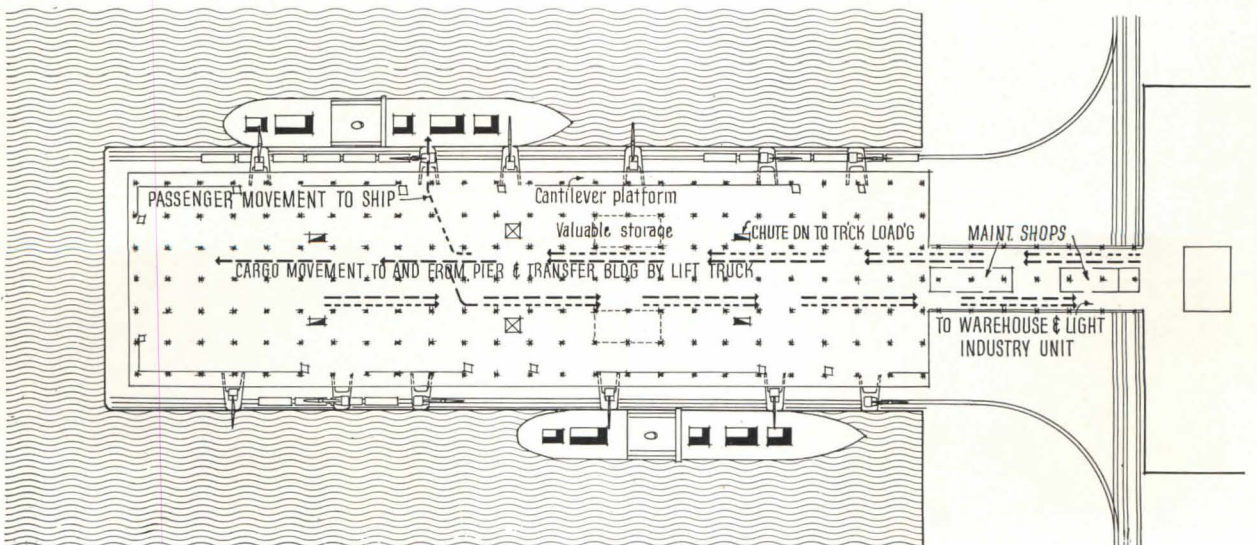
Their investigation showed that there was no over-all plan for development of the port area of New York, so when it began to expand, the early waterfront residences became warehouses, shops, wholesale and retail markets, etc., and later on other buildings nearby became

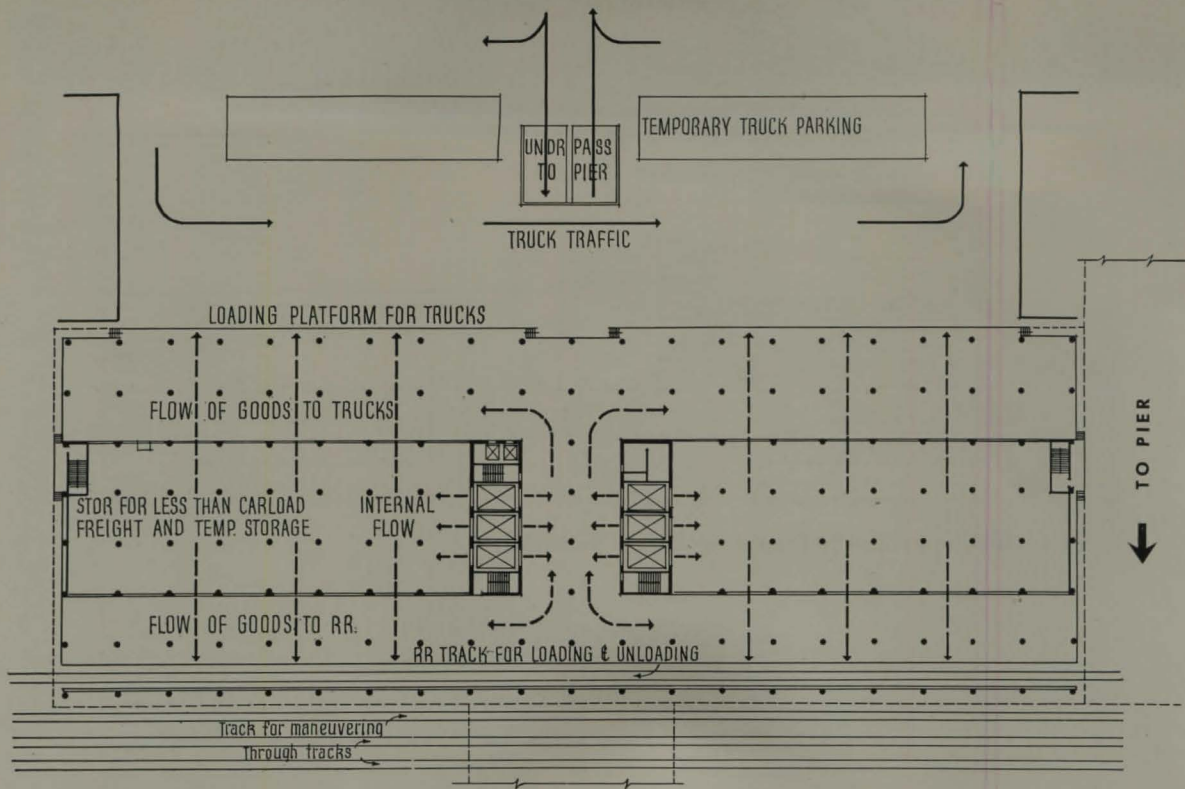
occupied by light industry. This resulted in considerable cross traffic with consequent delays in transporting goods.

The proposed solution consists of a two-deck pier connected to a transfer building which has floors for temporary or long-term storage, for light industry and for marketing. There is direct access to the pier by rail and truck. Integral with the pier are cranes which can move cargo between ships, trucks and freight cars or to the pier decks. The main purpose of the transfer unit is to confine the bulk of commercial traffic to the outer edge of the city. This article abstracts their study, excluding some parts on existing New York traffic and piers.

First deck of pier (above) primarily handles goods which travel out immediately by truck or train. Since these goods are not related to the transfer unit with its warehousing, this section of the pier acts independently. On the second deck (below) goods are stored for three to five days and then shunted down to waiting trucks or are sent to a warehouse or industry floor in the transfer unit. Smaller dashes show how passengers reach ship by walking through the cranes

Pier, Second Deck



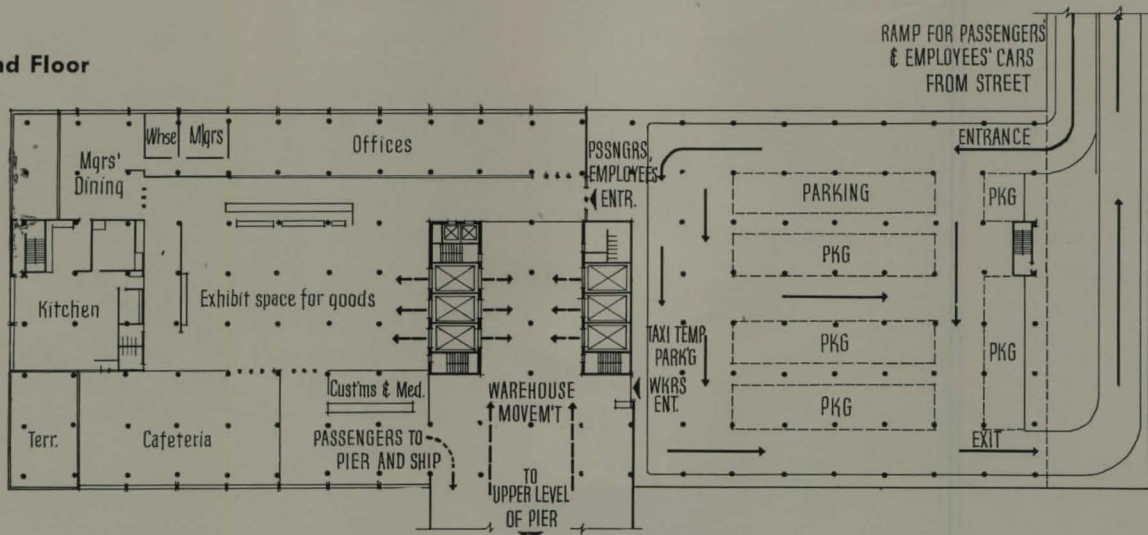


Transfer Building—Main Floor

On the main floor of the transfer unit (above) there is a direct connection between trucking and rail services. Elevators shuttle between the temporary storage and warehouse and industry floors. At the second floor (below) goods are brought to the

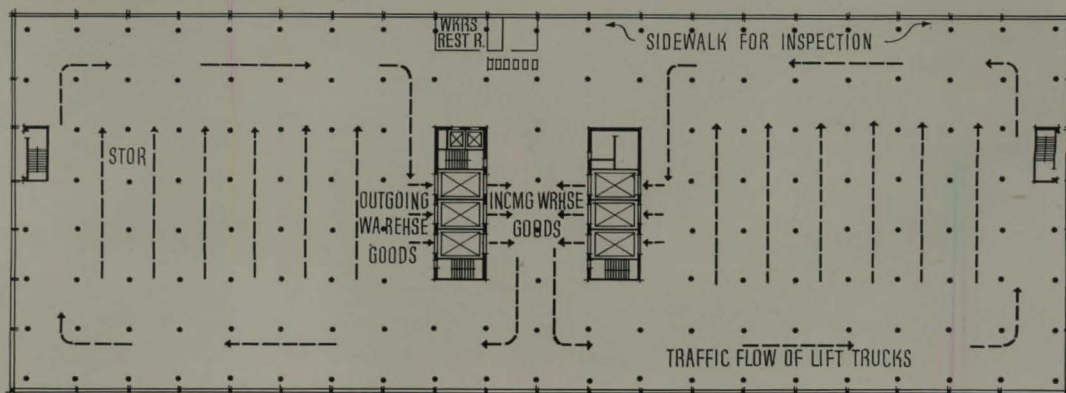
elevators from the second deck of the pier by lift trucks. Also on this floor are offices for warehouse administration; special provisions for wholesale marketing, auctions; eating facilities; passenger custom and medical service; postal and bank facilities

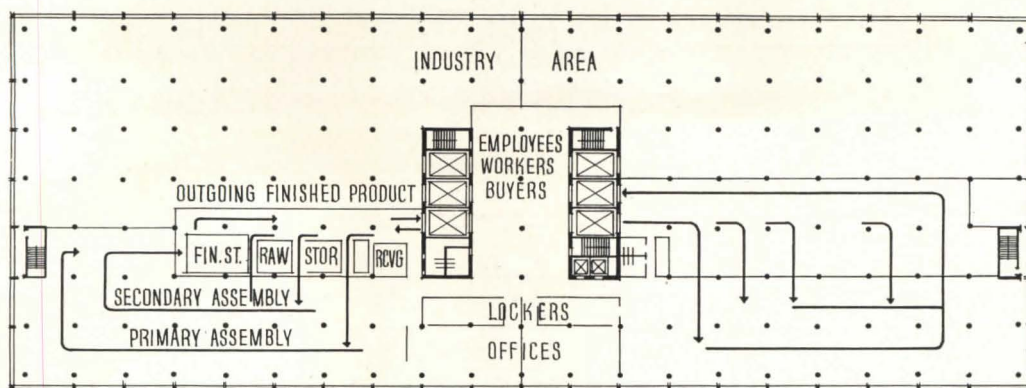
Second Floor



About 500,000 sq ft are available on the warehouse floors (below). Storage area and column spacing were determined on the basis of standard crate sizes and lift truck loads

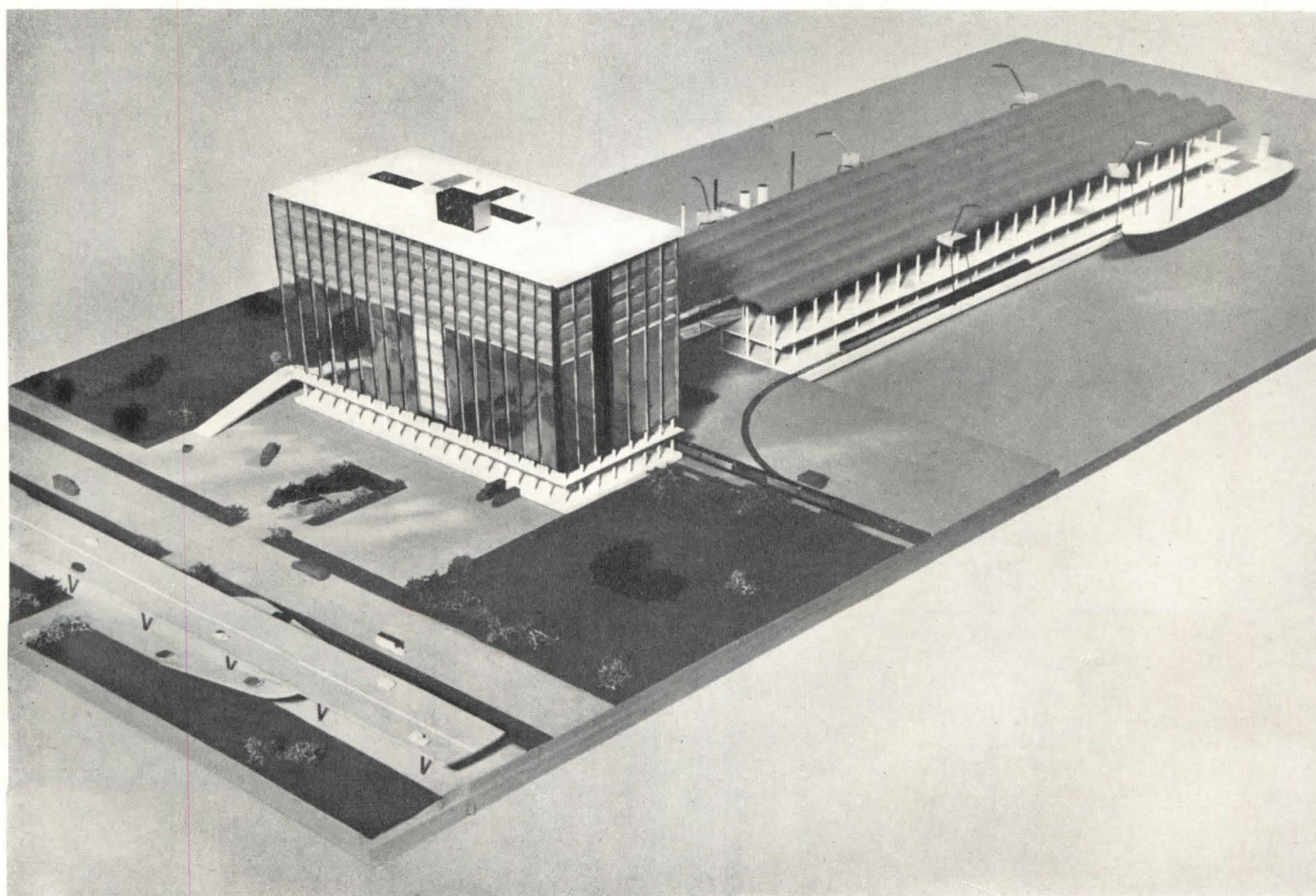
Third to Eighth Floors (Warehousing)





Transfer Building, Ninth to Thirteenth Floors (Industry)

Above: arrangement of the industrial floors is flexible to meet the space required by various light industries. Central area is storage for raw materials and finished products, while the periphery is used for assembly lines to obtain natural lighting. Below: operation of the port facility can be easily understood by a glance at the model. Trucks turn off the expressway at the middle of the transfer building and reach the pier through an underpass. Ramp at the left of the building is for passenger cars. Trains go directly out to aprons on the piers. Metal curtain walls are used for the warehouse floors, while industrial floors are enclosed mainly by glass



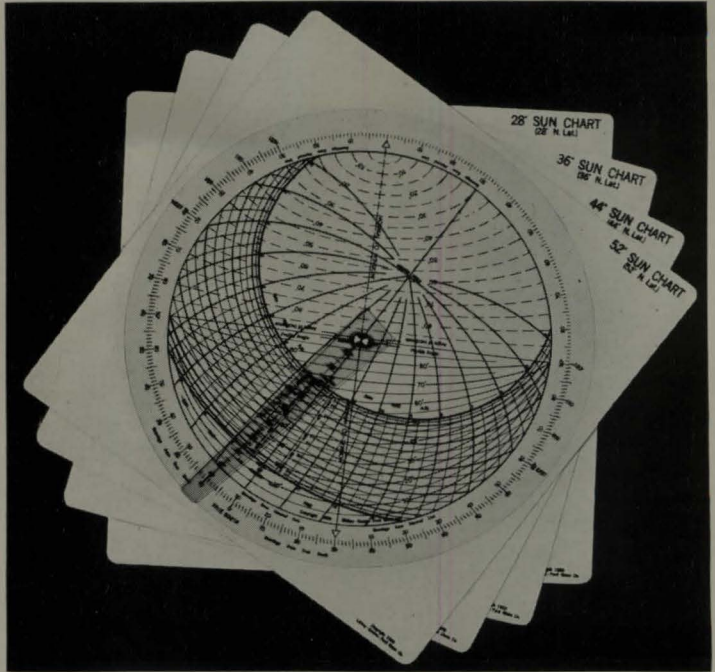
PRODUCTS for Better Building

Sun Angle Calculator

A handy new instrument has been developed to save time in the computation of such angular values of the sun's position as true angle, profile angle, bearing and angle of incidence. Rapid solution to these problems greatly speeds and simplifies the process of finding the depth of the sun's penetration through windows, the dimensions and position of shading devices, the proportions of shadows and the solar heat gain through windows.

The instrument includes a plastic sun chart for each 4 degrees of latitude from 24 to 52 degrees north latitude. With these charts, sun values may be determined for any hour, day or latitude within those limits, and for windows or walls facing any direction.

A transparent overlay is used with all charts and is pivoted in the center to rotate when placed in position. In its center is a plan view showing the location of the window (or wall) being considered. A wedge-shaped cursor pivots about the center point of the overlay for reading the true angle of the sun. The instrument comes with an instruction booklet which clearly describes and illustrates methods of using the device. All necessary charts, graphs and tables are included. The instrument was developed by Libbey-Owens-Ford Glass Co., and prepared by Aeronautical Services, Inc., as part of a continuing program of research and development. A limited number are available to architects and engineers at \$9.50 for calcu-



A series of charts adapt sun angle calculator for all U. S. latitudes

lator and booklet. Libbey-Owens-Ford Glass Co., Dept. S.P., Nicholas Bldg., Toledo 3, Ohio.

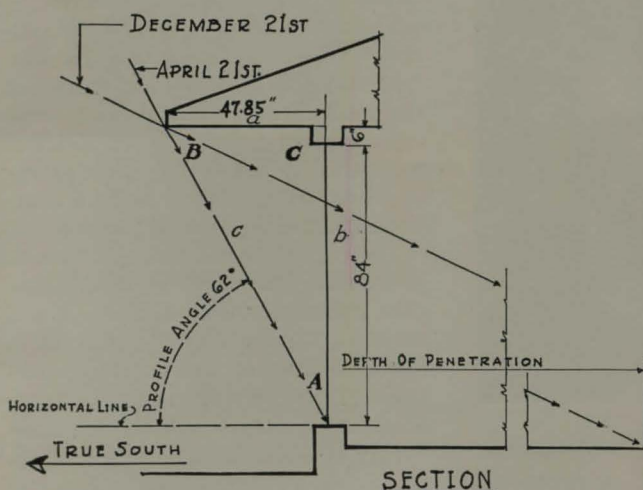
Producers' Council Adds New Package Program

A new panel, *Classroom Lighting and Equipment*, has been added to the list of programs on building construction problems, which has been prepared by the Producers' Council, Inc., national organization of building manufacturers, with the assistance of the Dept. of Re-

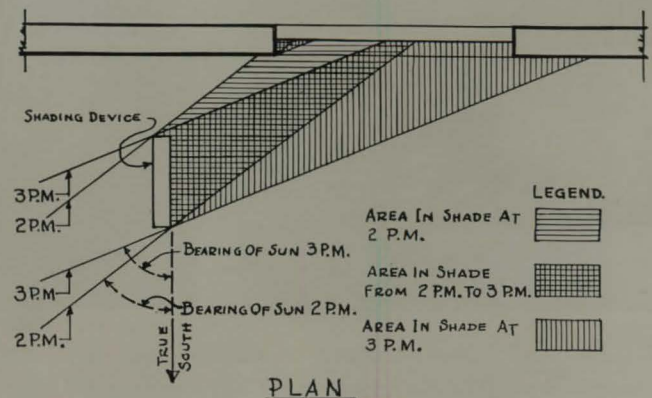
search and Education of the A.I.A. The programs are planned for any joint Chapter meeting of the A.I.A. and the Producers' Council, or any A.I.A. Chapter where there is not a Producers' Council. Other panels are: *Modern Rest Room Planning*, *Modern Methods of Fastening* and *Indoor Climate Control*. (See ARCHITECTURAL RECORD, May 1950, page 167.)

The newest program deals not only with the importance of design but also

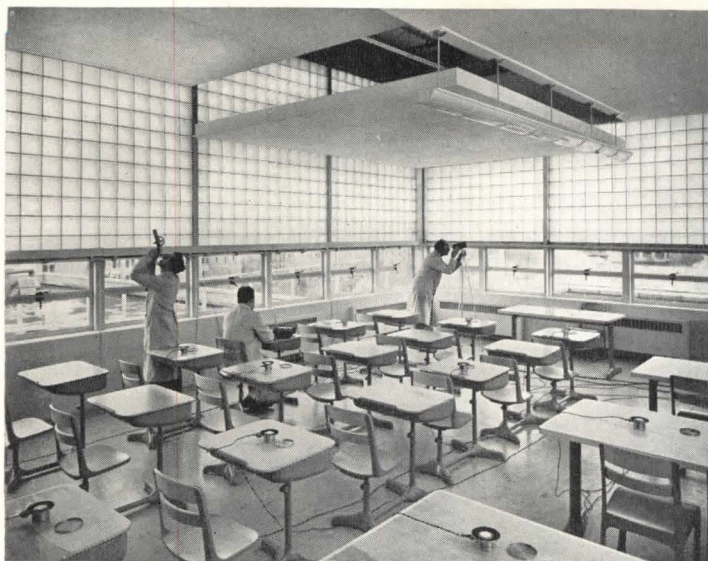
(Continued on page 182)



Calculator gives rapid data for computing proper dimensions of overhangs (left) and vertical sun baffles (below)



LITERATURE FOR THE OFFICE



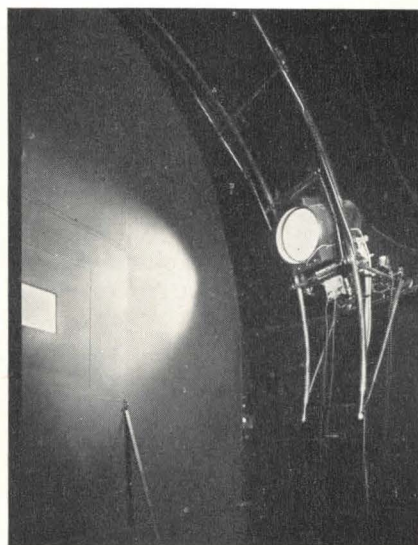
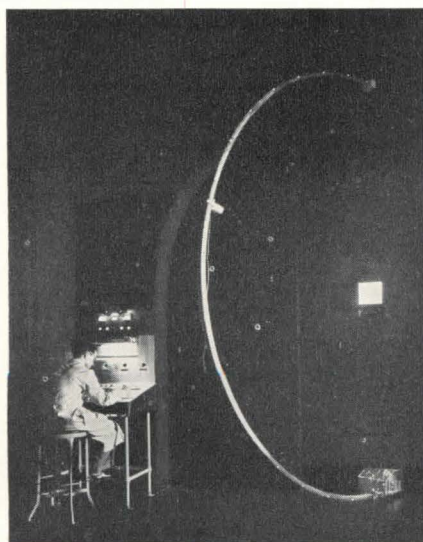
Full-size test classroom has four adjustable ceiling sections and a false west wall (back one) which has been removed here

Daylighting Laboratory

Engineering Research Bulletin No. 32.
As a rule, most university and college research bulletins, like technical society papers, reach only those limited groups with special knowledge in the field investigated. Quite often others who might be able to apply the results either don't

see the bulletin or, if they do, are lost in a maze of unfamiliar terms used in the presentation. A welcome exception to the rule is, "*The Development of Prismatic Glass Block and the Daylighting Laboratory*," a report covering 10 years' study by the University of Michigan, in the design and application of prismatic glass block.

Hedrich-Blessing Photos



Artificial "sun" at the University of Michigan illumination lab tests brightness and transmission of glass block (right). Light rays are measured by photocell on hoop (left)

Under the direction of Dr. R. A. Boyd, research physicist, and the sponsorship of American Structural Products Co., the project has involved study of light-diffusing and light-directing glass block. It has, at the same time, contributed valuable data concerning window arrangement and materials, reflectivity values of various color schemes, and the transmission of daylight under various room and weather conditions.

Presented in an interesting format, the bulletin is very readable, with its graphic drawings and photographs plus conveniently arranged tables. The mathematics involved in the studies, along with meteorological data, have been placed in appendices.

The booklet begins with a discussion of lighting codes and the fundamental principles of daylight illumination — as a preface to a statement of the functional requirements for prismatic glass block.

Then the daylighting laboratory and its operation are described. One part of the lab is a full-size classroom in which the ceiling height is adjustable and which may be lighted from the south fenestration, or from south and west.

A description of test equipment, including a simulated "sun" and "sky" demonstrates how these instruments enable the researchers to determine brightness and transmission data that would probably take years to accumulate using natural illumination alone.

The completeness with which the data is taken is apparent after reading the section on measurement procedures.

The main section of the bulletin concludes with a description of a new type prismatic glass block and performance of the block in a classroom with south exposure, having ceiling and chalkboard reflectance values as commonly recommended. Drawings show task illumination in foot-candles and brightness.

The purpose of the bulletin is not to present an assemblage of illumination data but rather to survey the research. As such, it promises more to come in providing architects with data on daylighting. 88 pp., illus. Price, \$1.00. Engineering Research Institute, University of Michigan, Ann Arbor, Mich.

(Continued on page 216)

INSTALLATION OF GAS APPLIANCES-1: Venting

The following pages have been prepared from material included in the recently issued American Standard, Installation of Gas Piping and Gas Appliances in Buildings (ASA Z 21. 30-1950), and from the booklet, Venting of Gas Appliances, published by William Wallace Co. Portions of the American Standard, which was sponsored by American Gas Assn., Inc., are included in the new proposed New York State Building Code.

In the actual installation of any gas appliances, reference should be made to the manufacturer's instructions, gas company regulations, and local building, plumbing, or other codes in effect in the area in which the building is made.

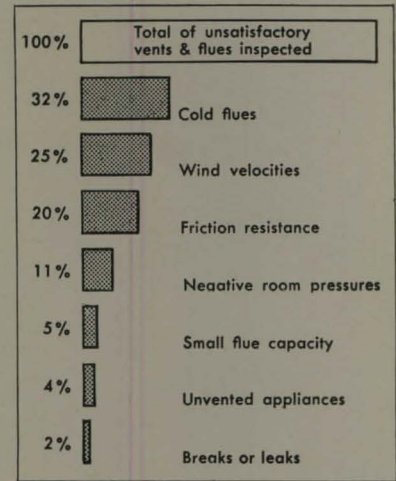
A constant fresh air supply is a prime necessity for satisfactory combustion in gas appliances, and for proper operation of gravity vents. Air infiltration in buildings of conventional construction is normally adequate for these purposes. Appliances installed in a confined space within such a building should have two permanent openings freely communicating with ventilated interior areas as in sketch at lower right. Ducts may be necessary to connect with sources of air supply which are any distance from the enclosed appliance.

Appliances in a building of unusually tight construction require a direct air supply from outdoors or from

crawl spaces or attics with outside openings, as in the sketch at lower left. In confined spaces in this type of building, openings should be connected with the source of air supply by ducts. Openings to any confined space should have a minimum combined area of 1 sq in. per 1000 Btu per hour of input rating of the appliance. One opening should be near the top of the enclosure, one near the bottom. They should be of approximately equal area. In any case where ducts are required, they should be of the same cross sectional area as the openings to which they connect. The minimum dimension of rectangular ducts should be 3 in. or more.

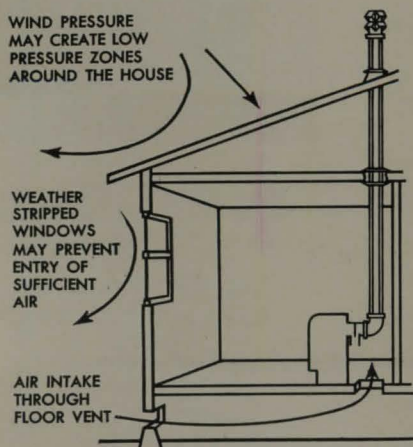
The operation of exhaust fans, kitchen ventilators or fireplaces requires large quantities of air, and may cause faulty action of vents unless an added source of air supply is available. In extreme cases they could cause a vent to act as an air intake.

Combustion in most gas appliances produces several non-toxic products, including water vapor, carbon dioxide and nitrogen, which can become highly objectionable and often create a moisture problem if not removed. Approved modern appliances will not produce toxic carbon monoxide when properly installed and adjusted. In venting, the energy contained in the heat of the flue gases must carry out 2400 lbs

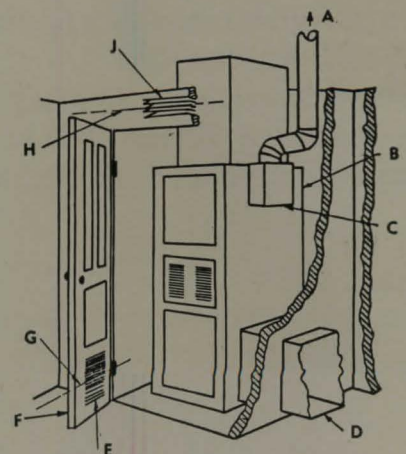


Common causes of venting failures are indicated from the above survey

of flue gases for each 1000 cu ft of natural gas burned. This amount is based on normally standard conditions where there is 50 per cent excess air and 100 per cent dilution air at 70 F. An appliance with a 60,000 Btu rating burning 1000 Btu's of natural gas per hr would then be required to exhaust 144 lbs of flue gases each hour. An effective vent, with an adequate source of replacement air, is vitally needed to discharge all the waste products harmlessly to the outside atmosphere. A number of factors enter into the proper operation of a vent. Neglect of them causes vent failures shown in the chart at upper right. These



Left: tight construction requires air intake close to but not directly under draft diverter so flue gases are not chilled. Right: appliances in confined spaces require unblocked openings at E and J extending to ventilated area. Min distance G to H should be 3½ ft. Door F must give easy access. Allow 6 in. min clearance as at B and C. Circulation air at D must be separate. End flue A above roof peak





Hospital

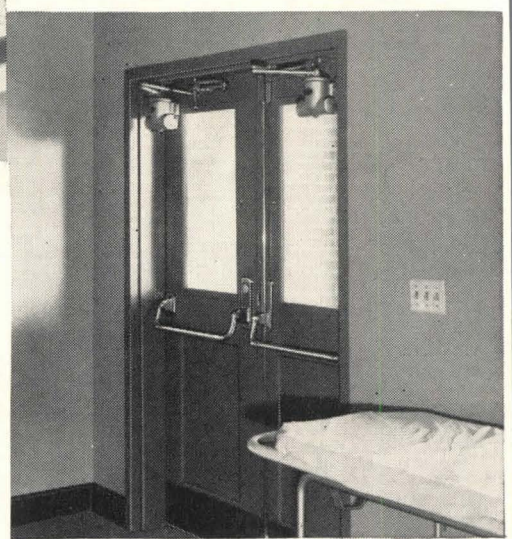
Traffic

Flows

Quietly

*through doors
equipped with
Corbin Hardware*

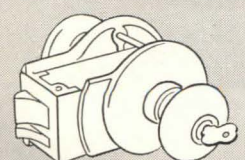
*Mount St. Mary Hospital
Nelsonville: Ohio
Architect: Louis F. Karlsberger,
Columbus
Contractor: Knowlton Construction Co.,
Bellefontaine
Hardware supplied by: Columbus
Hardware Supplies, Inc., Columbus*



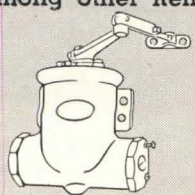
HOSPITAL ZONE—QUIET is a warning that has been taken to heart in the manufacture of Corbin Hardware. In function, Corbin Hardware meets all of the specialized needs for the efficient flow of hospital traffic. In quality, Corbin Hardware is unsurpassed for its ability to provide year after year of noiseless, trouble-free service.

The fine, new Mount St. Mary Hospital in Nelsonville, Ohio is representative of hundreds of American hospitals that are equipped throughout with Corbin Hardware.

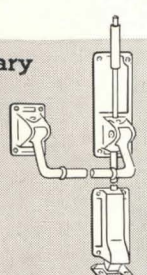
Corbin Hardware used at Mount St. Mary Hospital included, among other items:



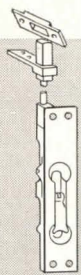
"900" Unit Locks



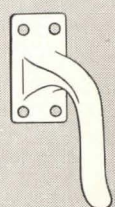
Door Closers



Exit Fixtures



Flush Bolts



Hook Door Pulls

P. & F. CORBIN

DIVISION

THE AMERICAN
HARDWARE CORPORATION



New Britain, Connecticut

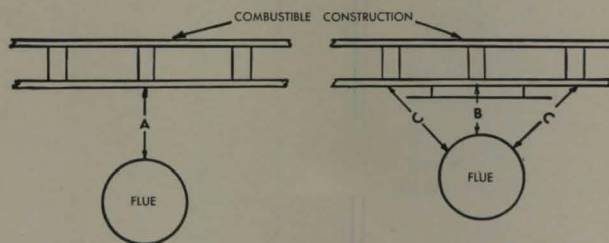
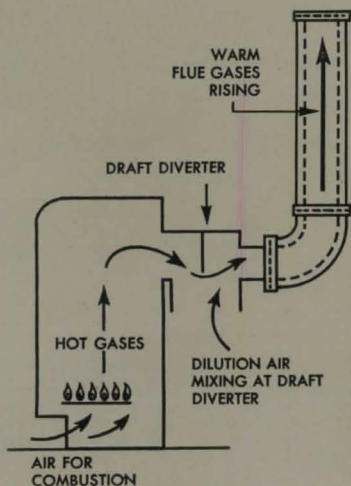
INSTALLATION OF GAS APPLIANCES—2: Venting

are based on a survey of actual venting failures as reported in Purdue University Engineering Bulletin, Research Series No. 103.

Operation of gravity type vents is dependent on the pressure differential between the weights of gases in the vent and the surrounding air. If the flue gases are warmer, and therefore lighter, than the surrounding air, the latter will exert a pressure by pushing in through the combustion chamber and draft diverter and float the gases out the top of the vent. (See sketch at bottom left.)

It is extremely important that the flue gases be kept hot, as this is the only source of energy available to pump the gases up the vent in this type of system. Many vent failures result from excessive thermal loss which occurs when vents and vent connectors are uninsulated and so cold that the interior gases are too heavy to be floated out. Methods often used to prevent this include: use of insulated vents and connectors in unheated spaces; installation of vents as vertically as possible inside heated spaces to take advantage of the surrounding warm air; and use of a vent of low thermal capacity that heats quickly. Though interior vent surfaces temperatures should be relatively high, exterior walls of the vent should remain at low temperatures during prolonged operation to prevent a fire hazard.

All possible precautions should be



A equals required clearance with no protection as specified in Table 1. B equals reduced clearance permitted in accordance with Table 2. Protection applied to combustible construction is required to extend in each direction to make C equal to A.

TABLE 1 Flue or Vent Connector Clearances for Listed Appliances

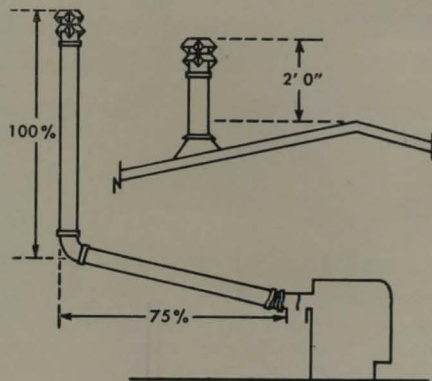
Appliance	Minimum Distance from Combustible Construction	
	Metal Flue or Vent Connectors	Type B Flue or Vent Connectors
Boiler	6 in.	1 in.*
Warm Air Furnace	6 in.	1 in.*
Water Heater	6 in.	1 in.*
Room Heater	6 in.	1 in.*
Floor Furnace	9 in.	3 in.**
Incinerator	18 in.	Not permitted

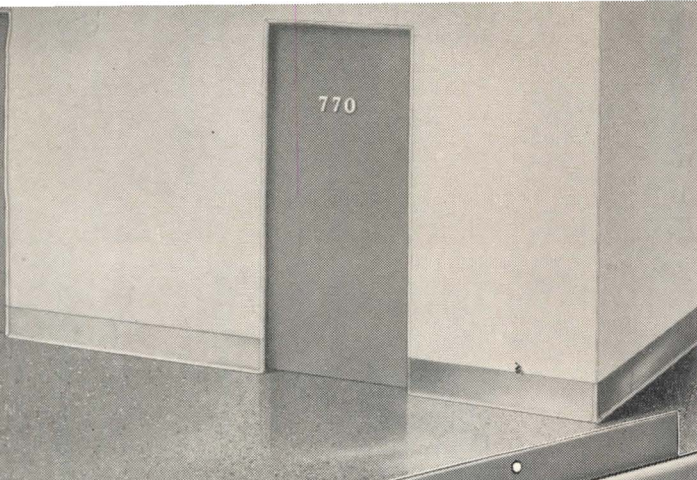
* Except as otherwise specified in the listing by a nationally recognized testing agency.
** 3 in. for a distance of not less than 3 ft from outlet of the draft hood. Beyond 3 ft the minimum clearance is 1 in.

TABLE 2 Clearances with Specified Forms of Protection

Type of Protection Applied as Illustrated Above	Where required clearance with no protection is:		
	6 in. clearance reduced to:	9 in. clearance reduced to:	18 in. clearance reduced to:
1/4 in. asbestos mill-board spaced out 1 in. with non-combustible spacers	3 in.	6 in.	12 in.
28 ga. sheet metal on 1/4 in. asbestos mill-board	2 in.	4 in.	12 in.
28 ga. sheet metal spaced out 1 in. with non-combustible spacers	2 in.	4 in.	9 in.

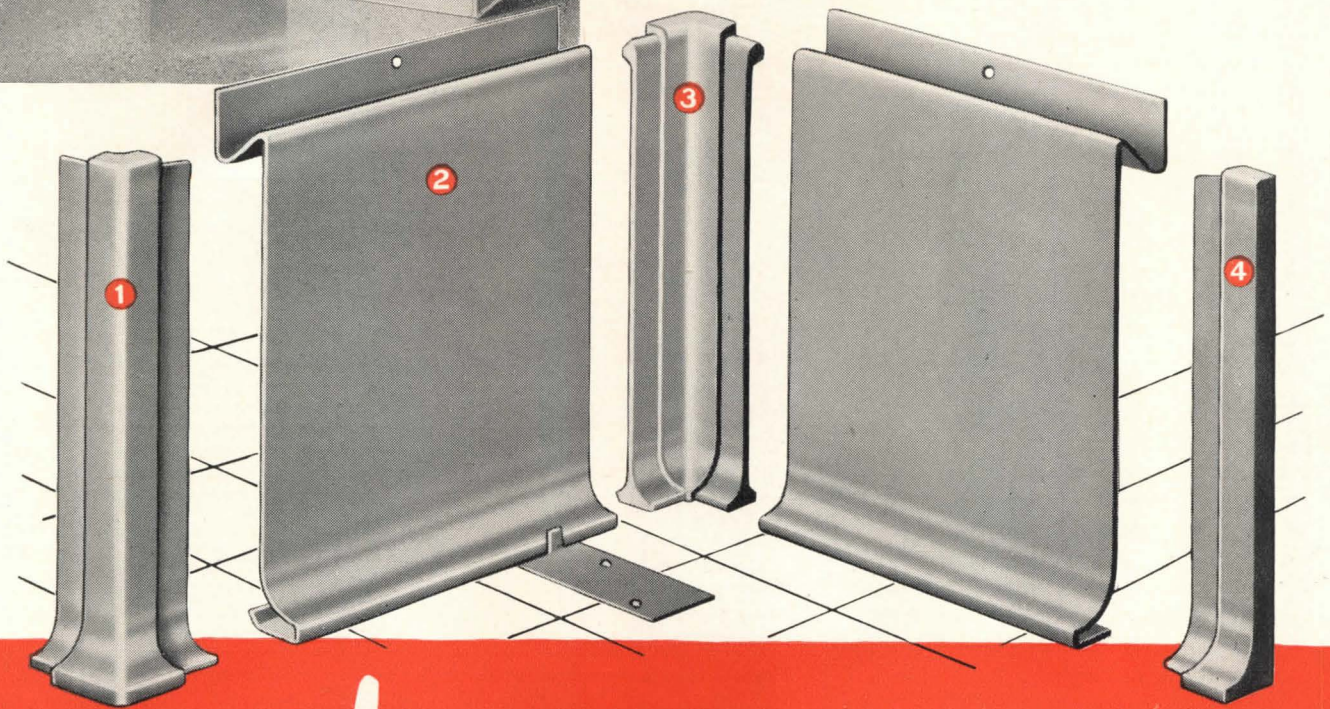
Proper operation of vents requires pressure of colder surrounding air on lighter warm flue gases to force gases out vent top (left). Draft diverter relieves pressure reversals. Lateral runs of vents should not be over 75 per cent of the vertical height (right). Horizontal runs give resistance to flow. Flue should end at least 2 ft above roof





Friction-fit fittings (no punching, no screws)

- 1 Outside corner fittings—square or $\frac{3}{4}$ " radius, cast.
- 2 No. 605 Metal Base Section — 4" and 6" heights in standard 10-ft. lengths.
- 3 Inside corner fittings — square or $\frac{3}{4}$ " radius, cast.
- 4 End-stop — left and right hand, cast.

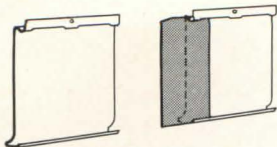
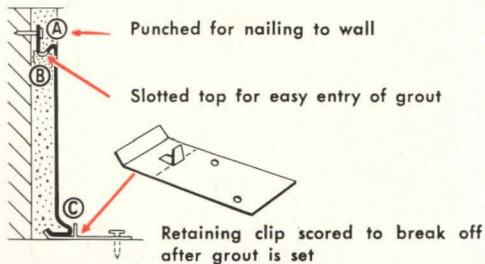


new!

MILCOR* no. 605

Plastered-in Metal Base with friction-fit fittings for faster installation

Flush-type, plastered-in design



No punching, no exposed screws

Rear view shows how flat aligning plate joins two sections of Milcor No. 605 Metal Base. Note, as with fittings, this joint requires no punching and no screws.

This new metal base is ideal with asphalt, rubber tile, or linoleum floors — in modern buildings such as hospitals, schools, hotels, apartments, office and industrial buildings.

Sanitary, fire-safe, and durable — Milcor No. 605 Metal Base offers substantial savings in construction time as well. That's why you will want to use this new Metal Base in your current designs. Study the features described on this page, and write for complete information.

*Reg. U. S. Pat. Off.

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INSTALLATION OF GAS APPLIANCES—3: Venting

taken to prevent any interference with the upward flow of the hot gases. Vents should be installed as vertically as possible. Vent connectors should be kept short, and square corners or sharp turns avoided. A smooth flowing round cornered tee or lateral joint should be used. To minimize frictional resistance, it is recommended that 45 degree elbows be used. Horizontal runs should not exceed 75 per cent of the vertical height, and should have a lateral rise of at least $\frac{1}{4}$ in. to the ft. Connectors should never run downhill. Separate vertical vents should be used if appliances are a long distance apart. Where two vent connectors join into a common vertical vent, they should be placed at different levels to prevent interference from opposing gas flows.

The flue or vent should extend high enough above the building or other neighboring obstruction so that wind from any direction will not strike the flue from an angle above horizontal. A flue extended at least 2 ft above flat roofs, or above

the highest part of wall parapets and peaked roofs within 30 ft, should be reasonably free from down drafts.

Most all gas appliances should be equipped with a draft hood or draft diverter. Failure to install this causes the equalization of pressure movements to take place within the appliance, and a sudden reversal of flue gas flow could smother the flame in the unit. In no case should a draft hood be installed in a false ceiling, in a different room, or in any manner that will permit a difference in pressure between the draft hood relief opening and the combustion air supply. The relief opening itself should be located so it is not obstructed by any part of the appliance or adjacent construction.

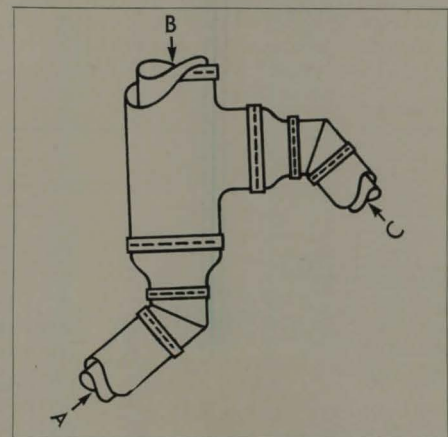
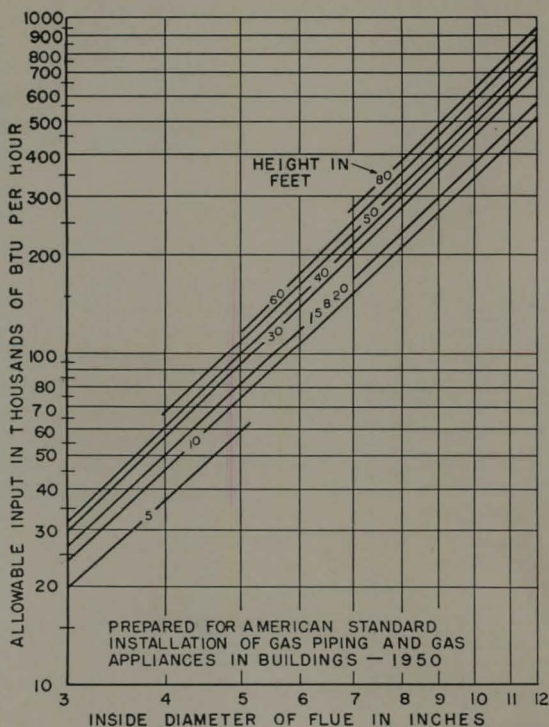
Flues or vents are classified into three general types:

Type A—flues or vents or masonry, reinforced concrete, or metal smoke stacks. These should be used for incinerators, appliances convertible to solid or liquid fuels, and most boilers and warm-air furnaces.

Type B—vent piping of non-combustible, corrosion resistant material capable of avoiding excess temperature on adjacent combustible material. These are used with appliances which produce flue gas temperatures not in excess of 550 F at the outlet of the draft hood.

Type C—flue or vent piping of sheet copper, galvanized iron or other approved corrosion-resistant material. It should be used only for runs directly from the space in which the appliance is located through the roof or exterior wall to the outer air. It should not pass through any concealed space or floor.

Size of the flue or vent should not be less than specified in the chart below left. In general it should equal the collar on the draft diverter. In no case should the area be less than that of 3 in. diam pipe. When two or more vents are joined, the cross-sectional area of the common vent must be at least the area of the largest vent plus 50 per cent of the areas of the other vents.



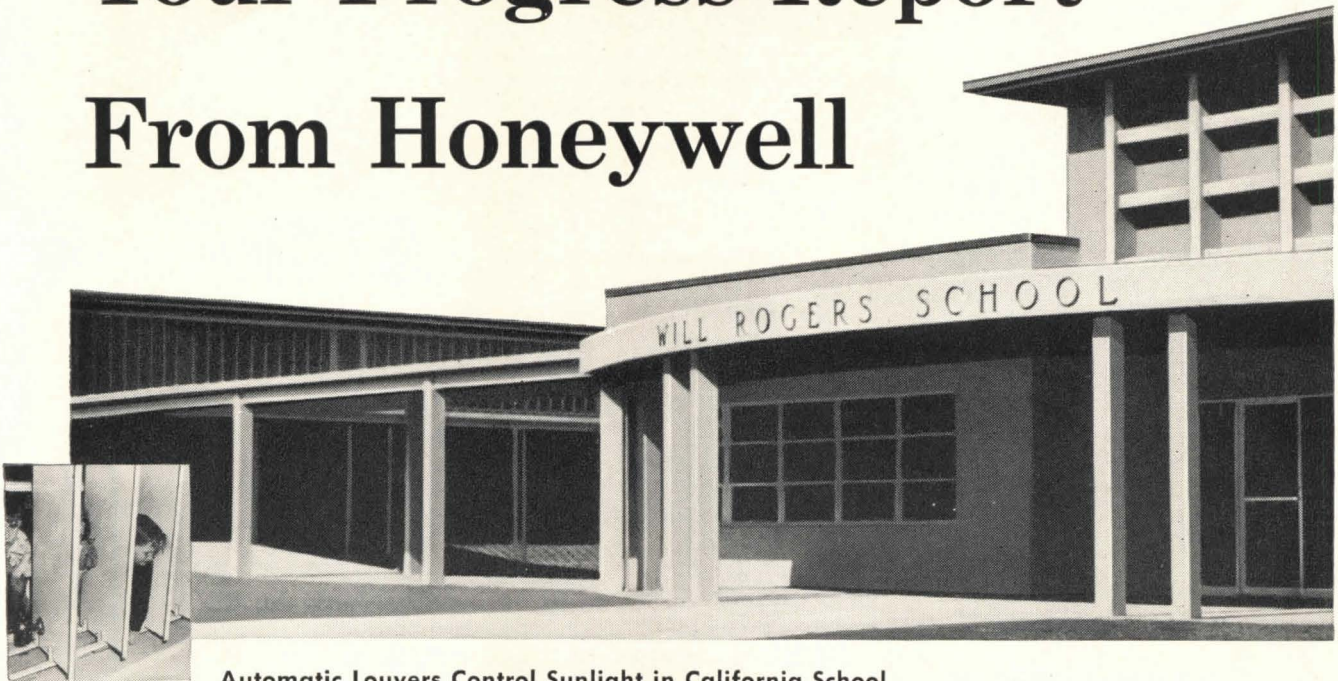
Left: chart to size flues for gas appliances of various Btu inputs. Size of flue selected should not be less than indicated for allowable input. Above: if two or more vents join into a common vent, the latter must be at least the area of the largest vent plus 50 per cent of the area of other vents. In the illustration, B equals A plus $\frac{1}{2}$ C

HOW DO YOU CONTROL SUNLIGHT AUTOMATICALLY?

WHAT'S THE NEWEST THING IN AIR CONDITIONING CONTROL?

HOW WILL TEMPERATURES HELP PATIENTS GET WELL AT ILLINOIS RESEARCH HOSPITAL? THIS IS . . .

Your Progress Report From Honeywell

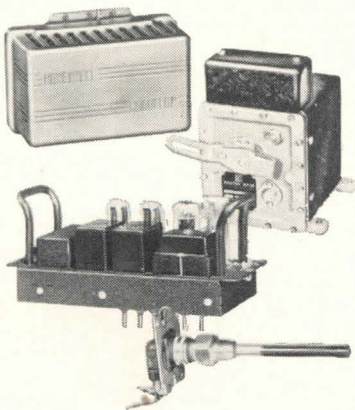


Automatic Louvers Control Sunlight in California School

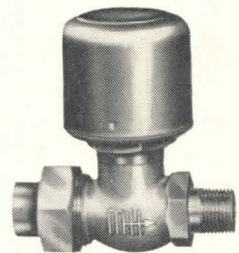
In planning the new Will Rogers elementary school in Ventura, Architect Harold E. Burket wanted to "bring inside" as much of the mild out-of-doors as possible. But California law says no direct sunrays shall enter a school building! These giant louvers in the

clerestory that adjust *automatically* to changing sun and cloud conditions proved to be the answer. Honeywell engineers, working with Mr. Burket, designed and installed controls that make sure the louvers obey the law—and still let in the maximum amount of daylight.

NOW! Electronic Air Conditioning Control!



By applying electronics to air conditioning control, a new system has been developed that provides a new high standard of comfort. The electronic thermostat that controls heating and cooling in this new Honeywell system is up to *100 times more sensitive* than a mechanical thermostat. This means much faster reaction to changes in load; no temperature "over-shoot"; no waste of either warm or cool air. By specifying electronic air conditioning control you give your client the ultimate in comfort. And at the same time he's getting a system that helps pay for itself through increased efficiency and lowered maintenance costs.



"Midget" Radiator Valve Ideal Space Saver

When the design of a building calls for pneumatic heat control, you'll find plenty of use for the VO501—the Midget radiator valve that's only *one-fourth* the size of the conventional valve. Its compactness makes it ideal for concealed convectors—and for all other applications where you're pressed for space. And because of its small size, it's easier to install and simpler to maintain. Special internal features enable the VO501 to give true modulation of heat delivery and the highest kind of performance.



Trend in Home Heating Is to Zone Control

With the accent on freer living and the rambling house, zone control of heating has now become recognized as the most practical way to meet the varying temperature needs of different "areas" in the home. In the house above, for

example, Architect David Searcy Barrow found the best plan was to set up separate zones for the living-dining area, the sleeping area and the utility area. And with a Honeywell thermostat strategically located in each of the three zones, the whole house can be kept at the right temperature—no matter how changeable the weather.



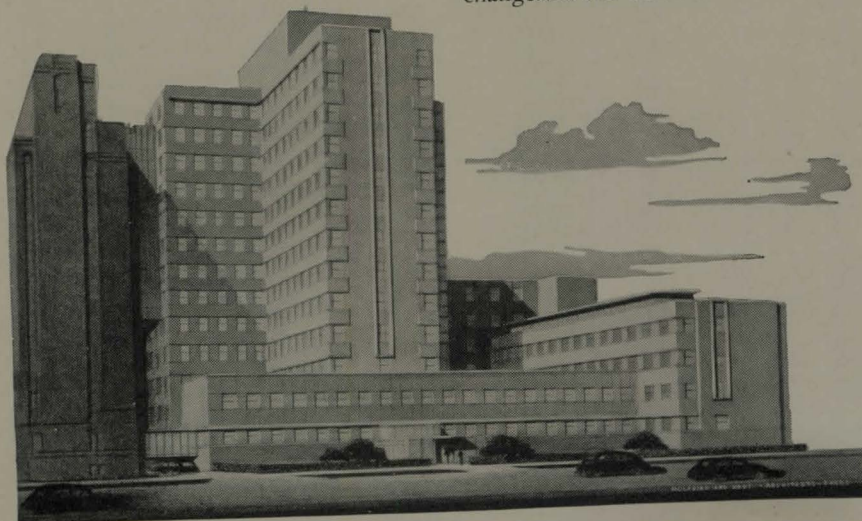
414 New Apartments—All With Personalized Heating Control

The Algonquin Apartments—made up of six of the country's finest functionally designed buildings—will be completed sometime this year on Chicago's South Side. Each of the buildings will have 69 apartments—and each apartment will be equipped with Honeywell personalized heating controls. And to make sure of trouble-free performance, the heating plant in each building will be controlled by a Honeywell Aquastat system.

Associated Architects: Herbert S. Greenwald,
Pace Associates, Chicago Sponsor
Ludwig Mies van der Rohe, Chicago

* * *

For additional information on any of the installations or products in this report, call your local Honeywell office. Or fill in coupon below and mail it to us *today*.



University of Illinois Research and Educational Hospitals

When the University of Illinois' new research hospital is completed on the school's medical campus in Chicago sometime this year, it will be equipped with medical science's latest and best instruments for probing the unknown.

Holabird & Root & Burgee,
Architects and Engineers, Chicago

Ernest L. Stouffer,
Supervising Architect, Urbana, Ill.

And playing an important part in helping to advance medical science will be Honeywell controls—controlling humidity, and furnishing the patients in each room with individual temperature control.

E. P. Heckel and Associates,
Special Consulting Engineers, Chicago

M. J. Corboy Company,
Mechanical Contractors, Chicago

MINNEAPOLIS
Honeywell

First in Controls

MINNEAPOLIS-HONEYWELL
REGULATOR CO.
Dept. AR-4-23, Minneapolis 8, Minn.

Gentlemen:

Please send me further information on

- Electric air conditioning control.
- Midget Radiator Valve.
- P H C for apartments.
- Zone control for homes.
- Hospital heating and air conditioning controls.

Name _____

Firm Name _____

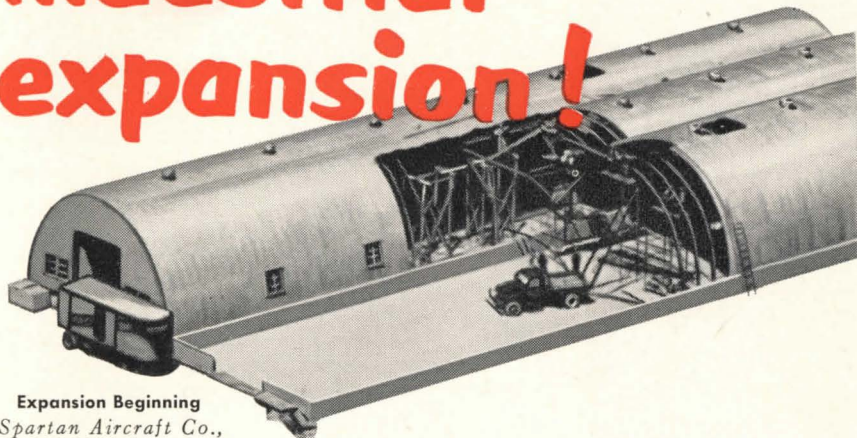
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City _____

Zone _____ State _____

THE ANSWER TO THE NATION'S NEED . . .

for fast industrial expansion!



Expansion Beginning
Spartan Aircraft Co.,
Tulsa, Okla., begins with
15,200 square feet of
floor area. Note com-
pleted building below.

Build **Quicker** with
QUONSETS

IDEAL FOR FACTORIES, WAREHOUSES, MACHINE SHOPS OR STORAGE BUILDINGS

For additions to your present plant—or for new plants—Quonsets mean *fast* completion, economy of materials, adaptability to any use. Also, when plants need expansion, you can add Quonset to Quonset, according to the need.

Made of N-A-X HIGH-TENSILE steel, Quonsets provide non-combustible construction and permanence far surpassing less modern buildings. They require little upkeep—are easily maintained. Let Quonsets serve you.

GREAT LAKES STEEL CORPORATION
Stran-Steel Division, Ecorse, Detroit 29, Michigan



Expansion Completed
Additional Quonsets, with extensions and connecting arches, provide Spartan Aircraft Co. with a total of 35,600 sq. ft. of floor area.



NATIONAL STEEL CORPORATION



Stran-Steel and Quonset Reg. U.S. Pat. Off.

Architectural Engineering

PRODUCTS

(Continued from page 171)

with the beneficial effects of proper lighting on the student. Participants are: The American Structural Products Co., F. W. Wakefield Brass Co., and American Seating Co. Actual demonstrations and slide films are used to illustrate the lectures. Producers' Council, Inc., 815 15th St., N.W., Washington 5, D. C.

Custom-Made Kitchens

A complete service including design, fabrication and installation of *Kitchen Queen* wooden kitchen cabinets is available at the new showrooms of *Westchester Custom Kitchens, Inc.* Details on the kitchen units were presented in the February, 1951, issue (*ARCHITECTURAL RECORD*, page 176).

Also available at the new showrooms are similar services for custom-tailored bathrooms—tub and shower enclosures and fixtures—steel radiator



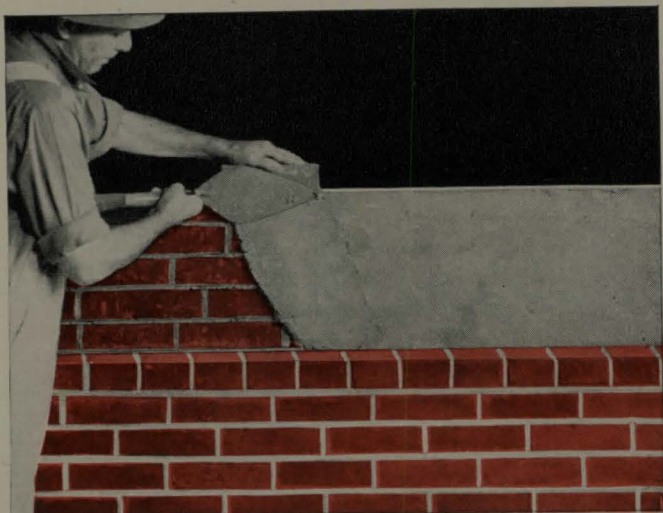
Showrooms of *Westchester Custom Kitchens, Inc.* feature custom designed units

enclosures, fluorescent lighting fixtures and a gift and accessory department. Items may be obtained in a wide variety of colors, styles and price ranges.

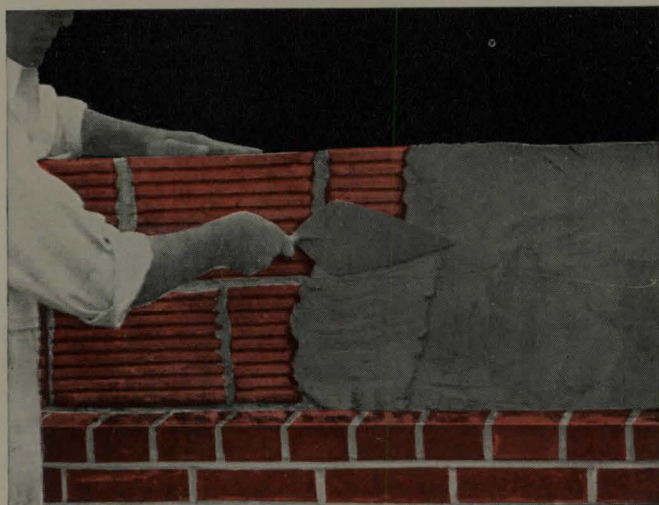
Referred to as Custom Kitchens in the previous item, the complete address of the new showrooms of the firm is: *Westchester Custom Kitchens, Inc.*, 145 East Post Road, White Plains, N. Y.

(Continued on page 184)

GOOD BRICKWORK = GOOD DESIGN + GOOD WORKMANSHIP + GOOD MATERIALS



The face brick should be backplastered.



If the back-up units are laid first, the front of the back-up units should be plastered.



Backplastering should not be attempted over protruding mortar joints.

PARGING

WITH

BRIXMENT

HELPS ASSURE

DRY WALLS

WE SUGGEST THAT—

The face brick should be backplastered with not less than $\frac{3}{8}$ of an inch of mortar before the back-up units are laid.

Or, if the back-up units are laid first, the front of the back-up units should be plastered with not less than $\frac{3}{8}$ of an inch of mortar before the face brick are laid.

Heavy rains don't make brick walls leak — they merely reveal the fact that the walls contain voids or passages through which the water may penetrate.

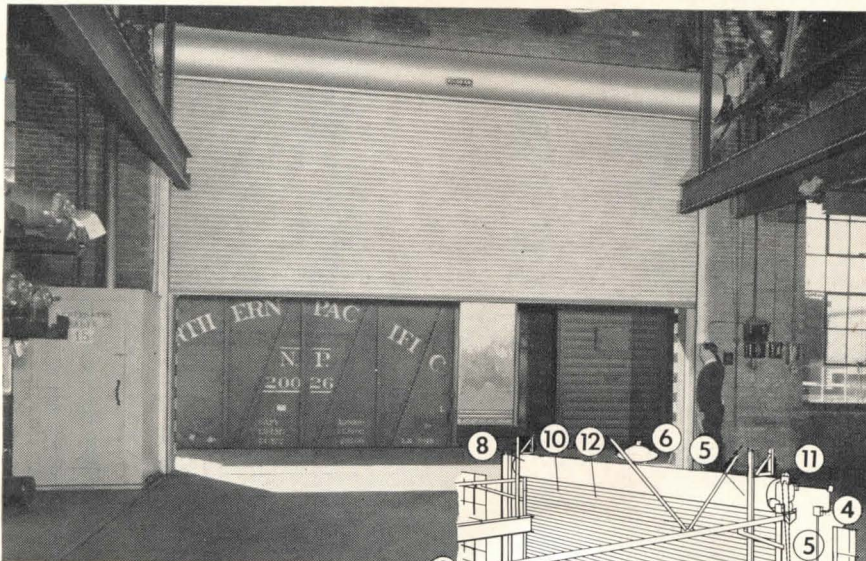
Dry brick walls are primarily the result of good design and good workmanship. Good materials are important, but still secondary. The more plastic the mortar used, the easier it is for the bricklayer to deliver good workmanship.

The photos at the left show some points of good workmanship.

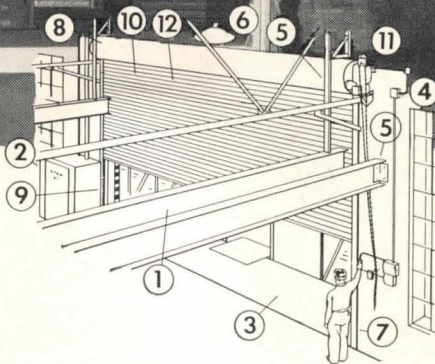
Brixment mortar has greater plasticity, higher water-retaining capacity and better bonding quality. Because of this combination of advantages, architects, contractors and dealers all over America have for thirty years made Brixment the largest-selling mortar material on the market. Why not try it yourself?

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

No other doors offer all these advantages



1. Overhead crane rails, extending only an inch or two from face of door, *can't* interfere with door action. All overhead space is available for hoist, crane and conveyor equipment.
2. All floor space around Kinnear Rolling Doors is fully usable at all times.
3. No sacrifice of space on narrow loading platforms with Kinnear Rolling Doors. They need no room inside or outside the building for opening and closing action.
4. Windows can be placed right next to Kinnear Rolling Doors . . . they are never blocked off when the doors are operated.
5. Supports or other superstructure can be placed close to sides, front and top of Kinnear Rolling Doors —inside or outside the building.
6. Light from overhead fixtures is never blocked off by Kinnear Rolling Doors, they coil compactly above the opening.
7. Wind can't blow Kinnear Doors back and forth, or damage them. Edges are anchored in steel tracks from floor to ceiling!
8. Kinnear Rolling Doors open straight upward, coiling completely out of the way of traffic, safe from damage.
9. The opening is cleared from jamb to jamb and floor to lintel. No projecting edges or parts to obstruct opening.



10. A continuous curtain of strong interlocking steel slats gives you extra protection against fire, theft, intrusion, wind, weather and accidental damage.
11. Kinnear smooth, upward action is ideal for time-saving motor operation, with convenient remote control. Rugged Kinnear motor operators do the trick.
12. Kinnear's interlocking steel slat curtain is not only more rugged and longer lasting, but permits any number of slats to be individually replaced if accidentally damaged. Lower maintenance costs!

You get many other advantages in addition to those highlighted above in Kinnear Rolling Doors. They are built any size, with motor or manual operation. Easily installed in old or new buildings. Write for complete information or recommendations

THE KINNEAR MANUFACTURING CO.

Factories 1860-80 Fields Ave., Columbus 16, Ohio
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ROLLING DOORS

Kinnear Rolling Doors

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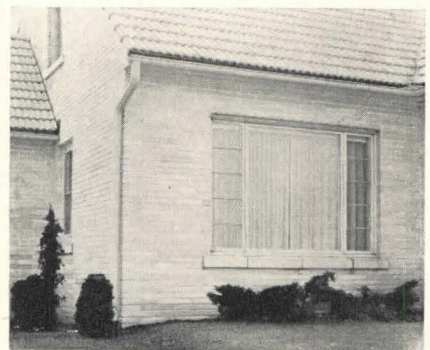
PRODUCTS

(Continued from page 182)

Masonry Units

Masonry building units, called *Cavitex*, feature a semi-hollow formation which is claimed to make them at least 40 per cent lighter per cubic inch than conventional brick. Sides of the cavities slope from the top to permit a greater bearing surface for mortar than is found in many hollow building units.

Cavitex is made from hard minerals, such as gravel, crushed rock, sand, etc.,



Lightweight masonry units feature horizontal shapes, range of colors

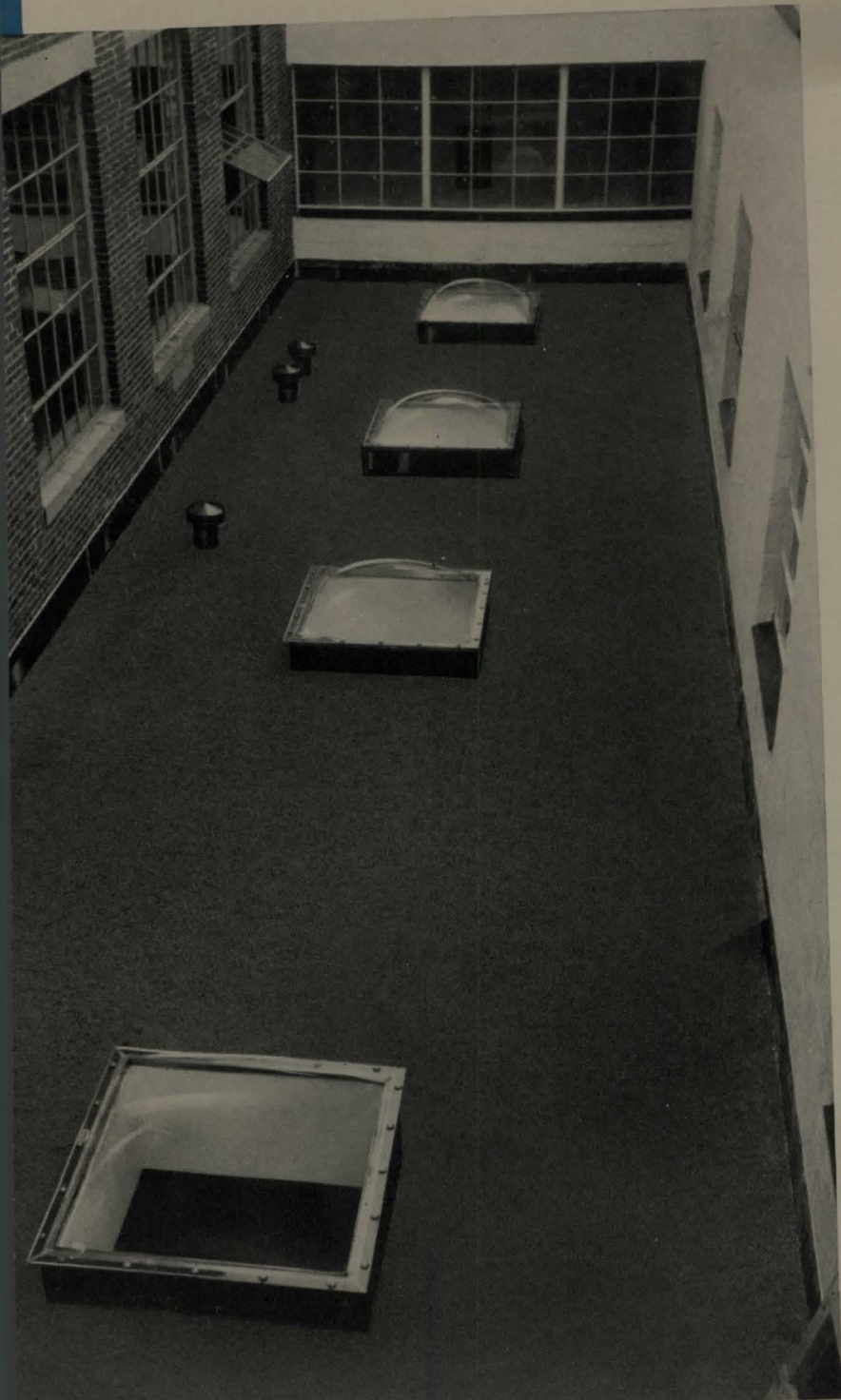
and bonded by Portland Cement. It is also available made from lightweight aggregates, such as pumice, where light weight is required. Dimensions of the units — 16 in. long by 4 in. thick — are planned for use in modular design. Three units, including mortar joint allowances, equal 8 in. in height. A wide range of colors is available. W. E. Dunn Mfg. Co., Holland, Mich.

Insulated Metal Bushings

Bushends are insulated metallic conduit bushings designed to protect against abrasion of cable insulation and accidental grounds. They are said to require no inside locknuts as is the case with bushings constructed wholly of insulating material. According to the

(Continued on page 186)

PLEXIGLAS Skylights Let in **ALL** the Light



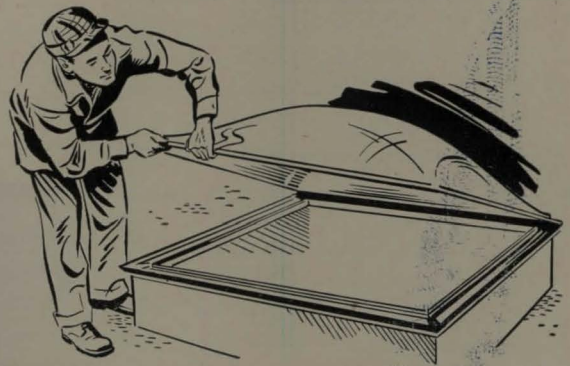
Old-fashioned skylights actually *keep light out* with wire reinforcements and opaque, dirt catching cross members. PLEXIGLAS, however, does away with dingy half-lighting. Light-obstructing supports are eliminated when the material is formed into domes. Rain washes soot and grime away from the smooth curved surface. And in clear form, PLEXIGLAS is as transparent as the finest optical glass.

Optical clarity—plus durability and weatherability—have helped make PLEXIGLAS the aviation industry's standard material for transparent enclosures and glazing on aircraft. Now the same properties make this tough acrylic plastic an important architectural material . . . in lighting, glazing, storefronts, and partitions, as well as skylights.

Full information on PLEXIGLAS acrylic plastic is yours for the asking. Send for our latest booklet on architectural applications.

Quick Easy Installation

Wascolite skylights can be installed in a matter of minutes. Their PLEXIGLAS domes are light in weight, can be handled easily—and safely, because strength and resilience make them highly resistant to breakage.



↑ **CLEAR BEAUTY, INSIDE AND OUT.**—Wascolite Dome Skylights, manufactured of PLEXIGLAS by the Wasco Flashing Co., Cambridge, Mass., solved difficult lighting problem at Brandeis University, Waltham, Mass. Administrative offices on the ground floor of the building were overshadowed by adjacent walls rising above skylighted roof. The Wascolites admit maximum amount of daylight and contribute attractive architectural appearance. Architects: Isidor Richmond and Carney Goldberg, Boston, Mass.

PLEXIGLAS is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.

Canadian Distributor: Crystal Glass & Plastics, Ltd., 54 Duke Street, Toronto, Ontario, Canada.

CHEMICALS



FOR INDUSTRY

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WASHINGTON SQUARE, PHILADELPHIA 5, PA.

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A Division of General Aniline & Film Corporation. "From Research to Reality".

Architectural Engineering

PRODUCTS

(Continued from page 184)

manufacturer they are light in weight, low in cost and practically indestructible.

Metal bases are fabricated from a tough, corrosion-resistant, wrought alloy. Threads are said to be free, clean-cut and non-seizing. The bushings are also claimed to have extra-deep knurls to facilitate tightening in restricted places, and insulation which has high dielectric strength and resistance to moisture absorption. Buchanan Electrical Products Corp., 1290 Central Ave., Hillside, N. J.

Class Block

Two features to reduce installation time and costs for *Insulux Light-Directing Glass Block* have been announced. The first is a new finish applied to exposed faces of the block during manufacture. It is claimed to be water-repellent, preventing adhesion of mortar to the faces during the laying operation. This is said to result in easier and faster cleaning of the panels, and to eliminate the need for strong acids commonly used for cleaning masonry work.



Light-directing glass block has new finish on exposed faces to prevent adhesion of mortar, stripe on edges as guide for proper installation

The second feature is an electronically applied gold stripe on the top mortar-bearing edge of each light-directing block, to make it easier to lay them in correct position. If all blocks in one

(Continued on page 188)



Bundyweld Tubing shines in better radiant heating systems

Shines in *on-the-site* fabrication, too.

Bundyweld is the only tubing double-walled from a single strip, with an exclusive beveled edge. It is copper-brazed, perfectly bonded through 360° of wall contact, into a solid-walled tube with thinner yet stronger walls. It is held to close tolerances.

Scale-free and smooth inside and out, Bundyweld arrives at the building site in twenty-foot lengths, with one end expanded if specified.

One man quickly bends grids on a simple wood or metal

form and joins them by soft or silver soldering. Two men easily position the lightweight, rigid, joined grids. Bundyweld shines, too, in your radiant heating systems. It's extra sturdy with a margin of safety against leaks or bursts under normal pressure. Its thinner wall radiates heat faster for more effective performance. You can already see that Bundyweld offers many unique performance and fabrication advantages that mean time, work, and money saved. But there are more. Check *Sweet's Architectural File* for details. Or write us. *Bundy Tubing Company, Detroit 14, Michigan.*

Bundyweld[®] Tubing

DOUBLE-WALLED FROM A SINGLE STRIP

WHY BUNDYWELD IS BETTER TUBING



Bundyweld starts as a single strip of basic metal, coated with a bonding metal. Then it's . . .



continuously rolled twice around laterally into a tube of uniform thickness, and



passed through a furnace. Bonding metal fuses with basic metal, presto—



Bundyweld . . . double-walled and brazed through 360° of wall contact.



SIZES UP
TO 5/8" O.D.

NOTE the exclusive patented Bundyweld beveled edge, which affords a smoother joint, absence of bead and less chance for any leakage.

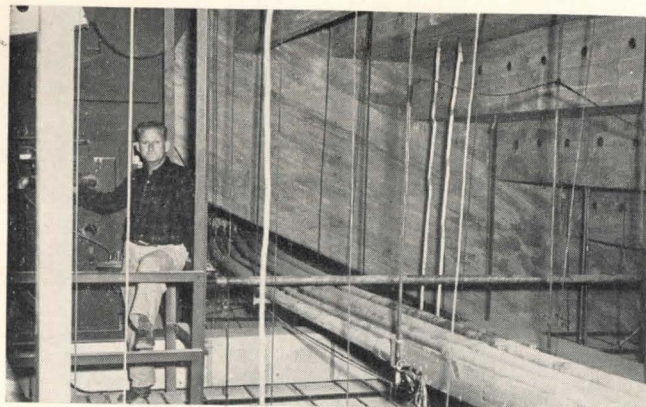
PRODUCTS

(Continued from page 186)


course have been installed properly, the gold line will be unbroken. Improperly installed block can quickly be detected. American Structural Products Co., Ohio Bldg., Toledo 1, Ohio.

Coliseum Heating

An unusual method of heating the balcony area was used for the new



Space under balcony seats is used as plenum chamber for coliseum heating (left). Outlets are under each seat (below)



QUICK-CONNECT EQUIPMENT FOR PIPING SYSTEMS

FOR OXYGEN, NITROUS OXIDE, VACUUM AND COMPRESSED AIR

Progressive hospitals interested in increased operational efficiency and long-term economy are more and more turning to Puritan outlets and administering units for their low-pressure piping systems. Proved safe and dependable, modern quick-connect Puritan units reduce plug-in time to seconds, greatly simplify maintenance, and, when two or more gases are piped, Puritan non-interchangeable valves positively assure connection of plug to the correct valve.

ONLY PURITAN OFFERS ALL FOUR OF THESE OUTSTANDING FEATURES:

- ⚡ **QUICK-CONNECT OUTLET VALVES** to speed administration.
- ⚡ **SERVICE VALVE** built in to body of outlet valve to permit disassembly, service and replacement without cutting off oxygen supply at other outlets.
- ⚡ **NON-INTERCHANGEABLE CONNECTIONS** to guarantee supply from correct line only.
- ⚡ **ANCHORED WALL PLATES** that do not "float" on pipe ends but remain secure.

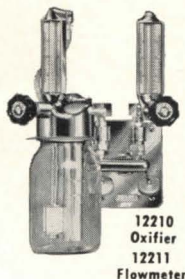


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 KANSAS CITY CHICAGO CINCINNATI ST. PAUL DETROIT ST. LOUIS
 BALTIMORE BOSTON NEW YORK DALLAS ATLANTA

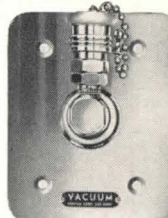
"PURITAN MAID" ANESTHETIC, THERAPEUTIC AND RESUSCITATING GASES AND GAS THERAPY EQUIPMENT



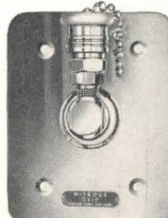
12210 Oxifier
12211 Flowmeter



12629 Oxygen



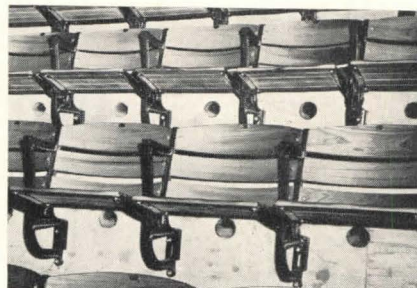
12688 Vacuum



12754 Nitrous Oxide



12749 Compressed Air

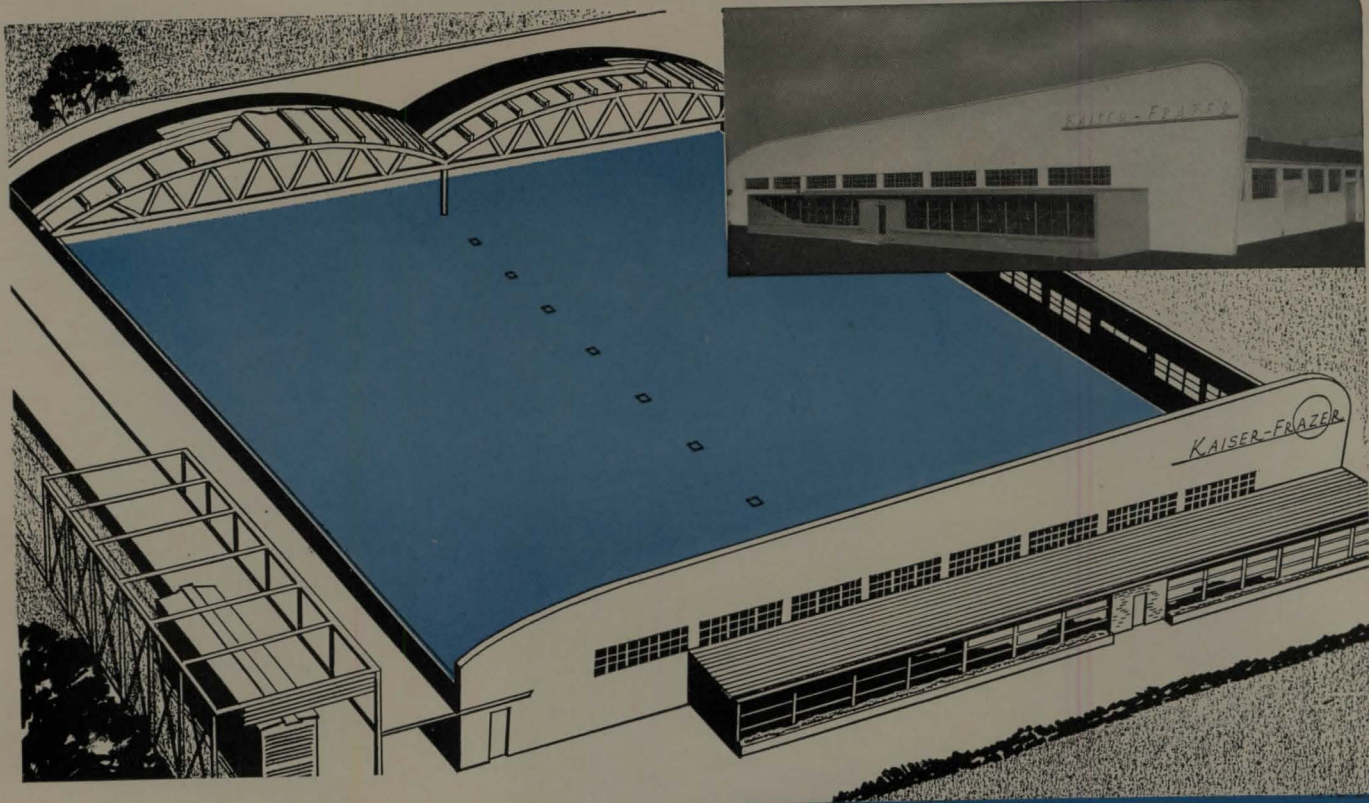


Bexar County Coliseum, San Antonio, Texas. In the reinforced concrete risers of each balcony tier are air discharge outlets spaced about 20 in. apart, so that one falls under each seat. The area under the seats is used as a large plenum chamber, where pressurized air is collected for distribution through the 3 in. pipe sleeve outlets. During cold weather, the air is heated by 16 gas-fired *Dravo Counterflow Heaters*. In summer, only the heater fans are operated to help ventilate the building. One of the main objectives of the system was to have the entire arena perfectly visible from every seat, with no view-obstructing structural supports. Dravo Corp., Neville Island, Pittsburgh 25, Pa.

Two Safety Films

Approved by the Underwriters and Danger Sleuths, are the titles of two 16-mm sound movies depicting the work of the Underwriters' Laboratories. In the first film, which runs 27 minutes, actual tests of a great variety of products are shown. The film shows how the tests are conducted and why. Types of tests include fire tests of building materials, showing how protection provided by fire doors, fire windows and walls, is measured. Other sequences show tests of electrical equipment, and crime-prevention tests.

The second film, which runs 16 min-
(Continued on page 190)



Clear Floor Space

...Primary working tool for efficient industrial production

Unrestricted space for continuous flow of mass production; room for efficient use of all kinds of materials handling equipment; flexibility for future expansion and production changes; freedom from costly maintenance — these qualities, provided through clear span trusses of Timber Structures, Inc., make the industrial plant building a truly effective production tool.

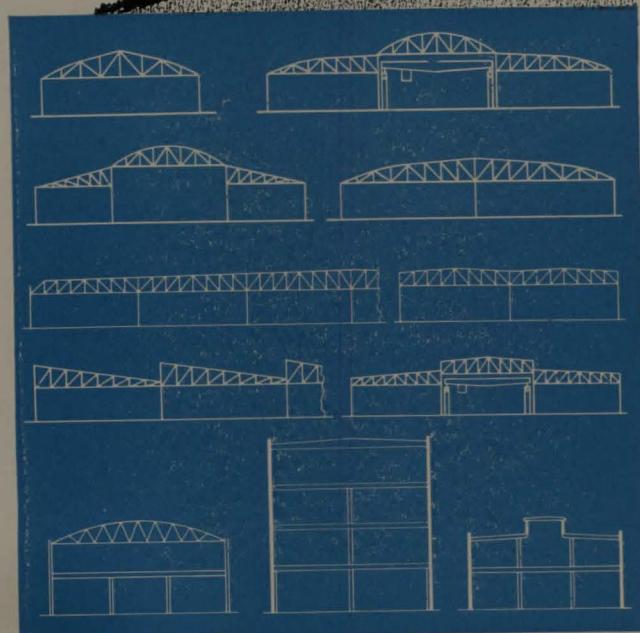
Variable Spans and Roof Contours

Trusses of Timber Structures, Inc., are available in both arched and flat types in spans up to 250 feet or more. Multiple spans, monitors and saw tooth roofs are common applications, and mezzanines, balconies and other local loadings are easily provided for in design.

Heavy Timber Construction

For best results truss chords are glued laminated members, composed entirely of kiln dried material and "shop grown" to the exact shape and dimensions specified by the designer. Free from effects of seasoning, these trusses also qualify as heavy timber or mill type construction. With a centuries-old record for effective resistance to destruction by fire, this construction earns moderate insurance rates during the entire life of the building.

A new booklet, "Industrial Buildings", gives detailed information about engineered timber construction of permanent, functional industrial plant buildings. Get your copy from your nearest Timber Structures office, or fill in and mail the coupon.



TIMBER STRUCTURES, INC.

P. O. BOX 3782-A, PORTLAND 8, OREGON

Offices in New York; Chicago; Kansas City, Missouri; Dallas, Texas; Eugene, Oregon; Seattle and Spokane, Washington

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Please send booklet, "Industrial Buildings" to

Name _____
 Company _____
 Address _____
 City _____
 Zone _____ State _____

PRODUCTS

(Continued from page 188)

utes, tells a condensed story of protection provided for the home. It features a portion of the daily life of an average American family, from early morning until dark. With electric blankets, waffle irons, television sets, as well as gasoline stations, schools, safes and even police squad cars, this film illustrates the possible fire, accident and crime

hazards of every-day life. The audience then goes "back-stage" into the Laboratories to see the safety tests of these materials as well as the many tests on building materials used in home, schools and public buildings.

A 16-mm print can be shown on any standard 16-mm sound-on-film projector capable of handling 1200-ft reels. With proper projection equipment it will serve audiences up to 1000 in any room that can be darkened. Orders should be placed at least six weeks before showing date. For each showing, a

competent operator and the necessary projection equipment and screen should be provided by the group or organization planning a showing. There is no charge for film bookings. The only cost is the return express or special delivery parcel post charge on the films.

Eastern address: Underwriters' Laboratories, Inc., 161 Sixth Avenue, New York 13, N. Y.

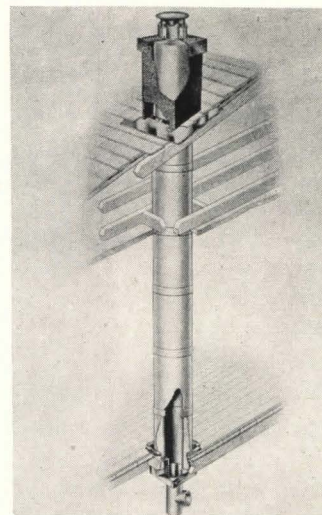
Midwest: Underwriters' Laboratories, Inc., 207 E. Ohio St., Chicago 11, Ill.

West of Rocky Mountains: Underwriters' Laboratories, Inc., 500 Sansome St., San Francisco 11, Calif.

Packaged Chimney

The *Van-Packer Packaged Chimney* is said to offer a complete unit which is compact, quickly erected and fire safe. The gas flue is made of lightweight masonry, and is tile lined and insulated. All parts required for erection are furnished in sealed cartons, with sections packed in a manner to facilitate the work. Three man-hours are said to be usually adequate for a normal installation.

The 3 in. chimney wall is claimed to



Packaged chimney comes complete with all parts, is quickly installed

have an insulating value equal to a 24 in. brick chimney wall, or a 70 in. concrete chimney wall. It is also said to have an Underwriters' Laboratories approval for zero clearance where the chimney passes through floor, ceiling or roof. Roof flashing, housing and cap come with the unit. The Van-Packer Corp., Field Bldg., 135 South La Salle St., Chicago 3, Ill.

(Continued on page 192)



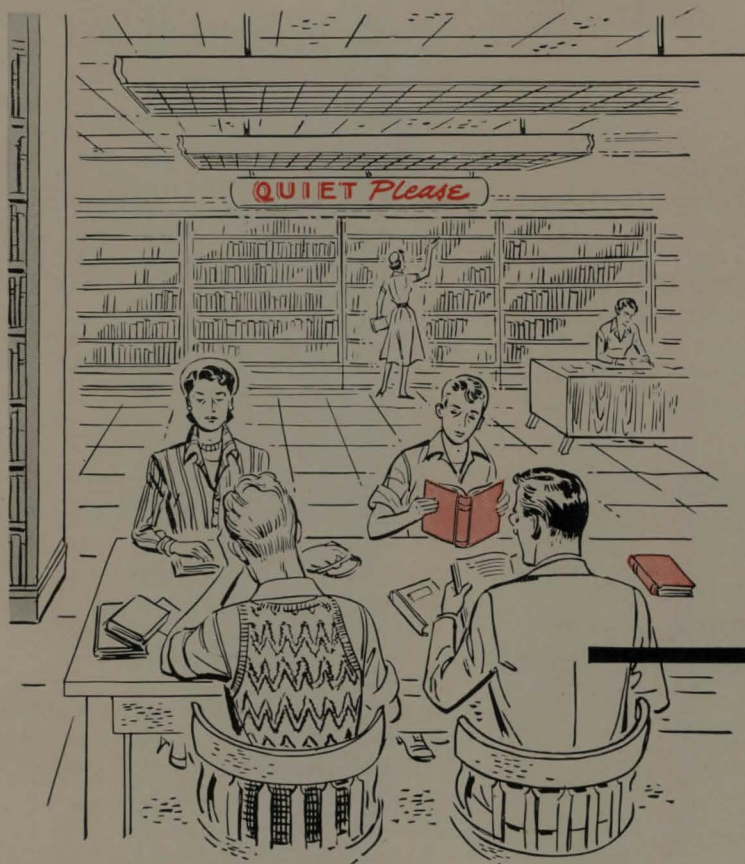


FIREMEN EVERY 10 FEET

SAVING MONEY...24 HOURS DAILY
 GLOBE Automatic Sprinklers stay on guard, day and night...always alert...discharging water *when and where FIRE* starts. GLOBE Sprinklers not only *discover and stop FIRE*, they also reduce overhead in the form of insurance costs.

GLOBE AUTOMATIC SPRINKLER CO.
 NEW YORK . . . CHICAGO . . . PHILADELPHIA
 Offices in nearly all principal cities

THEY PAY FOR THEMSELVES



CERTIFIED BALLASTS

are *Quiet*

Audible "humming" from a fluorescent ballast is highly annoying . . . yet some people believe this noise is an unavoidable part of fluorescent lighting.

This is not true. Seldom do you hear a **CERTIFIED BALLAST** that is properly installed in a fixture. It operates efficiently and quietly.

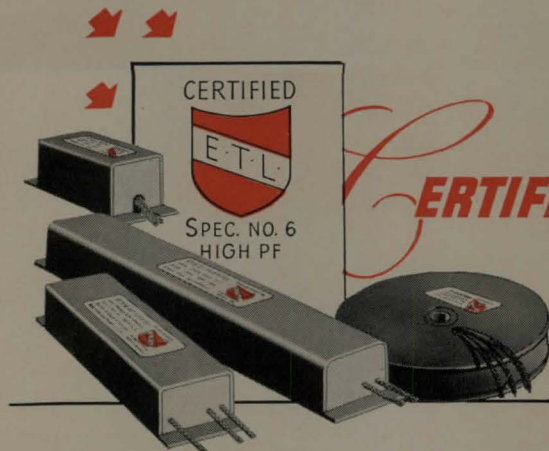
Freedom from noise is but one advantage of **CERTIFIED BALLASTS**. You also get . . .

- Maximum light output (poor ballasts may reduce light by 20%)
- Full lamp life (poor ballasts may shorten lamp life by 1/3)
- Long, trouble-free, dependable service.

CERTIFIED BALLASTS are made to exacting specifications, then tested and checked by Electrical Testing Laboratories, Inc.

● Complete information on the types of **CERTIFIED BALLASTS** available from each participating manufacturer may be obtained from Electrical Testing Laboratories, Inc., East End Avenue at 79th Street, New York, New York.

Participation in the CERTIFIED BALLAST program is open to any manufacturer who complies with the requirements of CERTIFIED BALLAST MANUFACTURERS.



CERTIFIED BALLAST MANUFACTURERS

Makers of Certified Ballasts for Fluorescent Lighting

2116 KEITH BLDG., CLEVELAND 15, OHIO

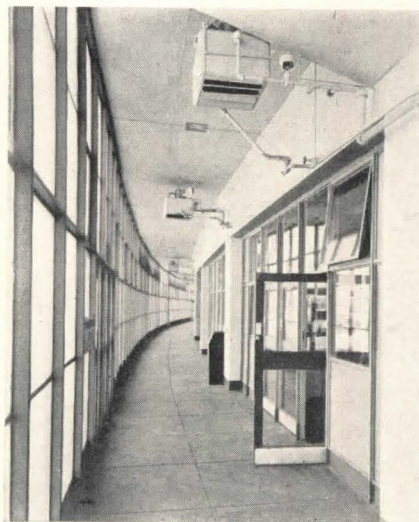
PRODUCTS
(Continued from page 190)

Air Terminal Heating

Herman Nelson Unit Heaters have been used to heat the large General Louis E. Boutwell Building at Logan International Airport, Boston, Mass. The unit heaters are said to maintain uniform comfortable temperatures throughout the building. The corridor,

3053 ft long with one wall of glass, is heated by 60 vertical shaft propeller-fan type heaters, each delivering 1120 CFM and 93,950 Btu per hour. Twelve similar units are used in storage, baggage and express areas. Sixteen loading area doors are blanketed by 32 cabinet type unit heaters.

All of the heaters are thermostatically controlled to take advantage of the sun effect on the large glass area. Among the advantages claimed for the system are a saving in floor space — all units are ceiling and wall mounted — and ready ac-



Unit heaters are used to heat large airport terminal building

**MECHANIZED
FOOD DELIVERY
and
DISH REMOVAL**
for
**HOSPITALS
RESTAURANTS
CAFETERIAS**

Conveys Food Trays automatically from Central Kitchen to any number of floors.

Carries soiled dishes from any number of floors to central dish-washing plant.

Olson Subveyors and Conveyors are made in many types and sizes.

Helps segregate food preparation and food delivery from soiled dish removal and dish washing in tuberculosis hospitals, etc.

Speeds service — eliminates traffic noise — saves labor.

Furnished for application of all sizes and types.

Easy to clean — easy to sterilize.

Used by hospitals, restaurants and cafeterias from coast to coast.

Engineering Service — based on 50 years of specialized experience.



Send for Catalog

SAMUEL OLSON MFG. CO., INC.
2434 Bloomingdale Ave.—Chicago 47, Ill.

Please send literature describing OLSON Conveyors and Subveyors for Hospitals, Restaurants, Cafeterias.

Individual _____ Title _____
 Firm _____
 Street _____
 City _____ Zone _____ State _____

cessibility for maintenance. The heater cabinets are finished in hard baked enamel. Herman Nelson Div., American Air Filter Co., Inc., Moline, Ill.

New Welding Process

A new process, "3 o'clock" welding, is said by the manufacturer to reduce welding time on a given joint by about 50%. It also, they further claim, extends the advantages of automatic hidden arc welding to jobs where the joint is in positions other than that for down-hand welding.

Additional savings are made because of the smaller sizes of electrode wire used, according to the manufacturer. Welds can be made in either straight seams or following an irregular contour.

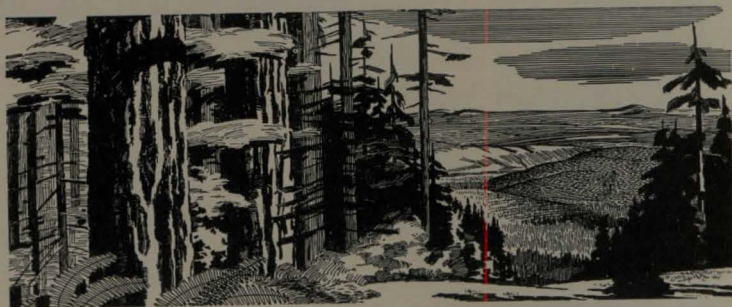
Recommended applications include: fabricating pipe, box sections, special I-beams and H-sections, and field erection of large outdoor storage tanks. Lincoln Electric Company, Cleveland 1, Ohio.

Porcelain Enamel Window Sills

Porcelain enameled steel window sills, originally developed for school and housing projects, are now produced for general home installations and other types of private and public buildings. Fabricated to specification in a variety of colors, the sills are suggested for use in bathrooms and kitchens. According to the manufacturers, they are impervious to water, humidity, household cleaners, alcohol and other home haz-

(Continued on page 196)

fine Oregon
Douglas fir



plus

fine plywood mills

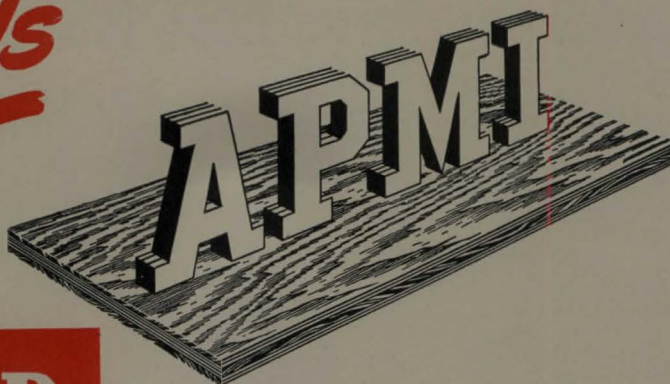


plus

fine people



equals



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PLYWOOD MILLS, INC.**

**GENERAL OFFICES
EUGENE, OREGON**

APMI SALES WAREHOUSES: 925 Toland St., San Francisco; 4814 Bengal St., Dallas; 4003 Coyle St., Houston; 4268 Utah St., St. Louis; 1026 Jay St., Charlotte, N. C.; Eugene and Willamina, Oregon.

The Douglas fir that grows in Oregon's rain belt is the finest on the face of the earth. That's why we use it.

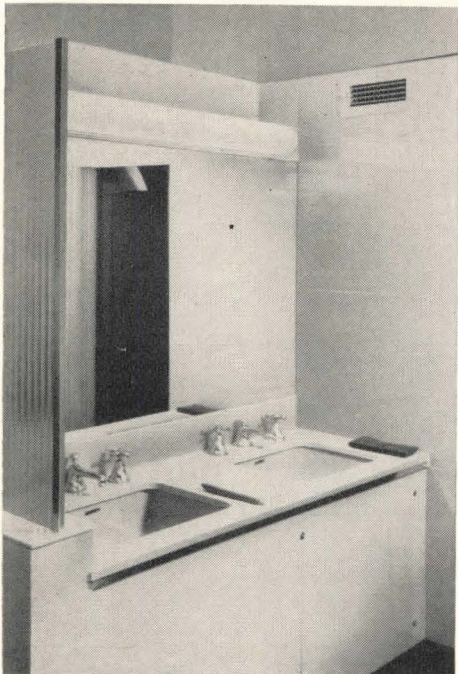
The mills in which we make our plywood are models of efficiency in the industry.

The people who work with us are skilled, interested, productive—with pride in their jobs.

From these ingredients of materials, machines and men comes APMI plywood; exterior and interior panels that carry double marks of quality—the DFPA grademark and our own trademark.

Your inquiries are welcomed at our general offices, or at APMI sales warehouses.

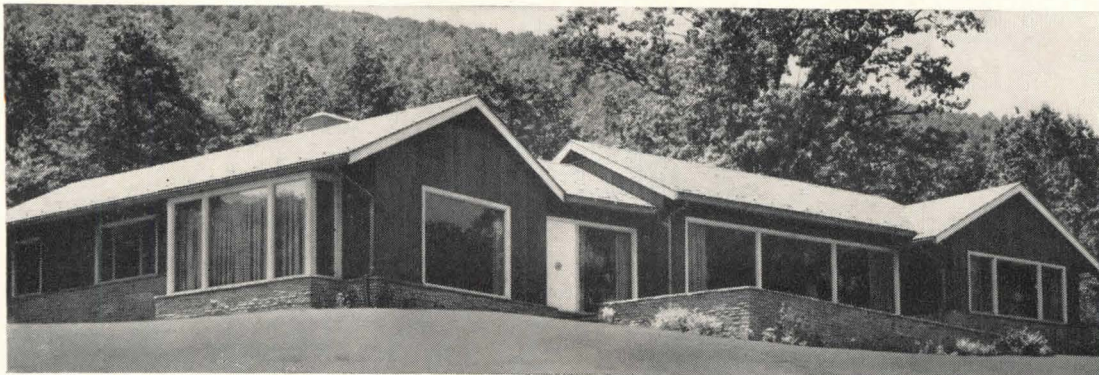
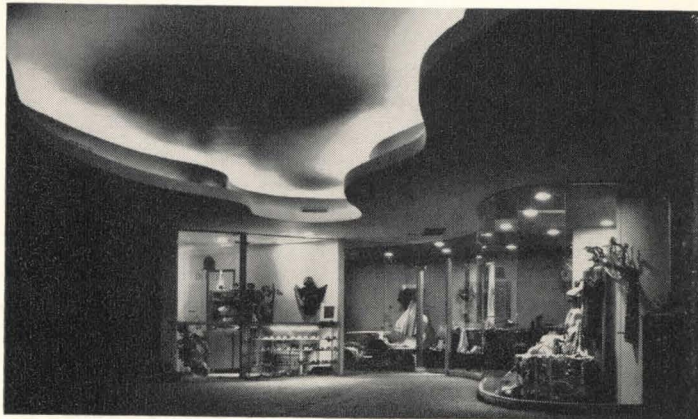
Four examples of the use of Pittsburgh Glass by contemporary architects



MORE AND MORE, the country's leading architects are "designing with Carrara Glass." Here is a high quality, finely-machined, easily handled product, with joints that are true and even. In this bathroom, Carrara Glass has been effectively used for the walls and ceiling, as well as for the unusual double-lavatory counter top.

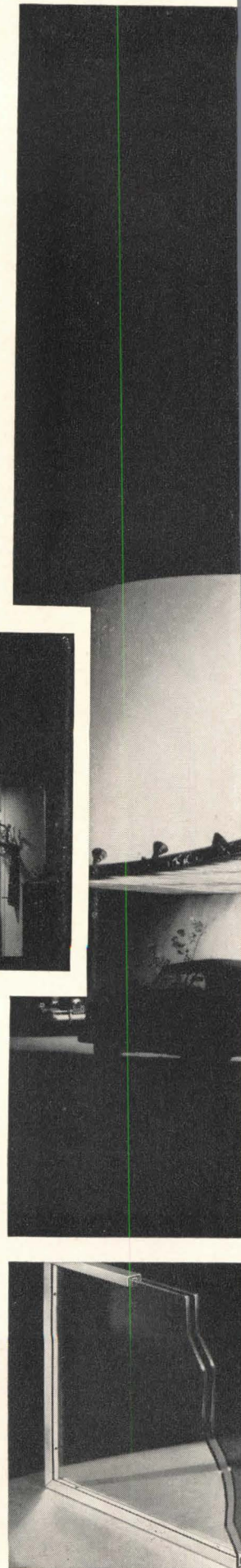
(At right) THE NEW COPA CITY theatre and restaurant at Miami Beach, Florida, is an outstanding architectural creation. It was natural that Pittsburgh Products should be chosen for this splendid building. Extensively used are Pittsburgh Polished Plate Glass, Herculite Doors, Door Frames, Mirrors and Pittco De Luxe Metal. Designer: Norman Bel Geddes, New York City; Architect: Norman Giller, Miami Beach, Florida.

(Below) HERE IS A DETAIL of one of the five stores located in the lobby of Copa City. Note the use of flat panels of Pittsburgh Plate Glass in the semi-circular display windows.



TWINDOW, Pittsburgh's window with built-in insulation, permits new latitude in window design. Without sacrificing heating or air-conditioning economy, it makes it possible to gain all the important advantages offered by large windows. Architect: Edward T. Wassell, Wilkes-Barre, Pa.

TWO OR MORE PANES of Pittsburgh Polished Plate Glass, with a sealed-in air space between them make up a Twindow unit. When using two panes, Twindow provides almost twice the insulating effectiveness of single-glazed windows. Even better insulation results when three or more panes of glass are used. Forty-seven standard picture window sizes are available for either wood or steel sash.





Design it better with **Pittsburgh Glass**

Your Sweet's Catalog File Contains a complete listing and descriptions of Pittsburgh Plate Glass Company products.

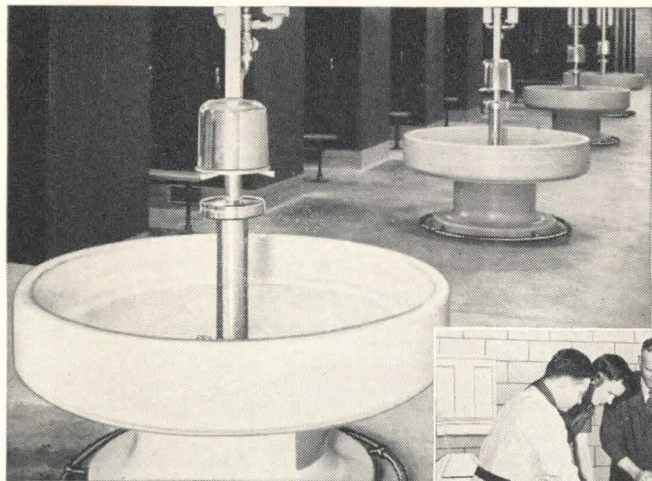
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY



*No Waiting in Line
with Time Saving*

BRADLEY WASHFOUNTAINS



**SAVE
TIME
SPACE
WATER**



• Many plants still lack adequate wash facilities. If additional equipment is needed in your plant, investigate the many advantages of Bradley Washfountains.

Easily installed, with only three piping connections, each Washfountain serves 8 to 10 workers simultaneously. Automatic foot-control plus self-flushing bowl and easy-to-clean single sprayhead assure utmost health protection. Maintenance is kept to a minimum, water economy realized, and employee morale improved, with efficient, convenient Bradleys.

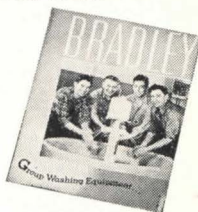
The Standard for 30 Years

During the past 30 years, Bradleys have become established as the standard for factory washrooms. Original installations can be augmented at any time—we'll be here to furnish you with complete equipment, replacement parts, or service. BRADLEY WASHFOUNTAIN CO., 2227 W. Michigan Street, Milwaukee 1, Wisconsin.

Distributed through Plumbing Wholesalers

BRADLEY
Washfountains

As a guide to wash-room planning, write for our illustrated Catalog 4701 today.



PRODUCTS

(Continued from page 192)

ards and are easily cleaned with a damp cloth.

Additional information may be obtained from the Porcelain Enamel Institute, 1010 Vermont Ave., N. W., Washington 5, D. C.



New chair is made of molded woods

Danish Imported Chair

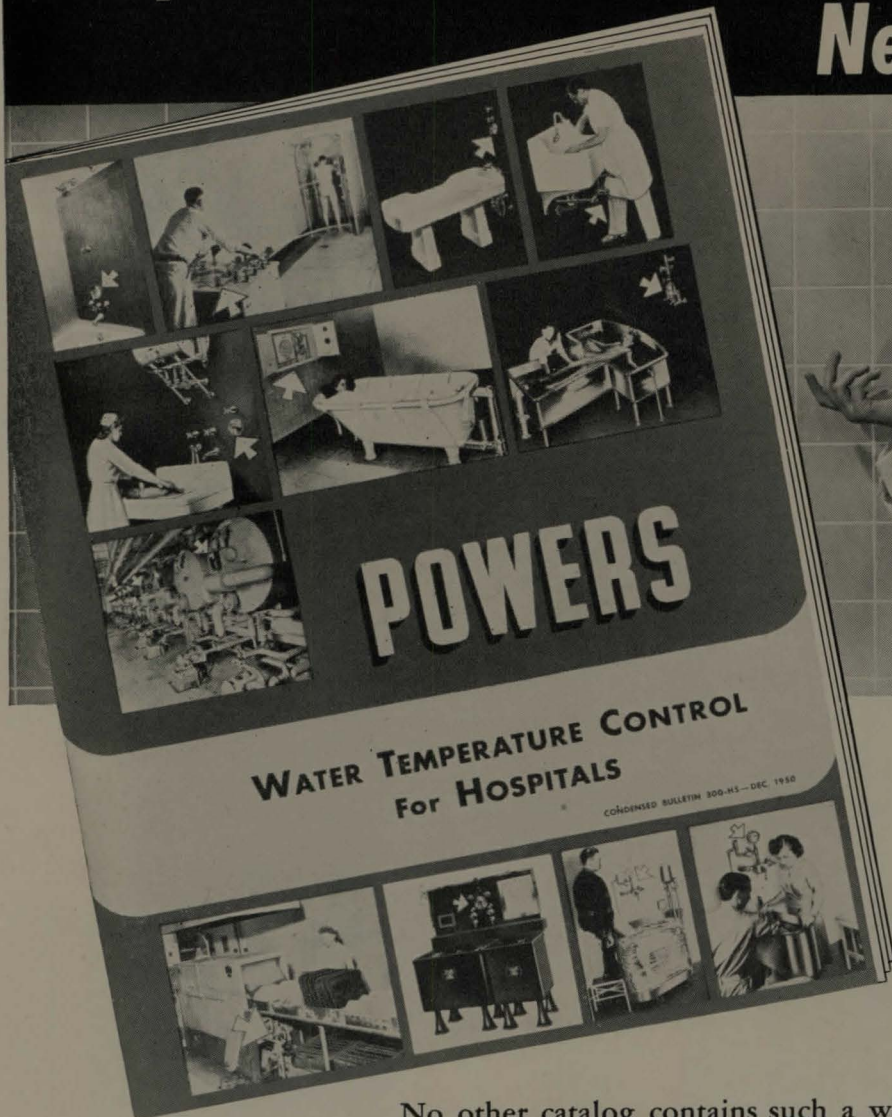
Fritz Hansen is the designer of a contemporary style chair, which can be stored in a carton 26 by 31 by 5 in. The chair is designed with a laminated beech frame which includes integral arms. Fitting flush into the sides are a molded back and seat of another wood—teak, walnut, or mahogany. This secondary wood is repeated in the legs where it is set between beech strips.

Sides are vertical, and units are available with one arm, two arms or no arms, for use in sectional groupings. Each style comes in three variations: beech frame with contrasting wood seat and back; two-wood frame with leather or fabric reversible cover which slips into the frame; and two-wood frame with upholstered seat and back.

While the chair is shipped knocked down, it is said to be simple to assemble by screwing in the leg braces. Herman Miller Furniture Co., Zeeland, Mich.

(Continued on page 198)

May We Send You a Copy of this New Catalog?



Typical applications of Powers controls used in leading hospitals are shown in this catalog

Powers Products Are Backed by 60 Years of Experience in Water Temperature Control

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MEXICO, D. F., Edificio "La Nacional" 601

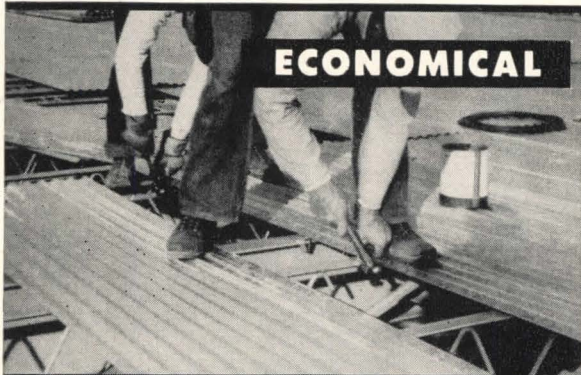


Has the most complete line of water temperature controls made for hospitals

(HSC) ★ ★ ★

THE ONLY FORM FOR
STEEL JOIST CONCRETE
FLOORS AND ROOFS

Corruform



ECONOMICAL

CORRUFORM

sheets are easily placed. Fasteners are positive for all common joists and beams. Lapping is automatic. No sag or material waste. Concrete is placed and finished by common practice.



SAFE

CORRUFORM

is nearly twice as strong as ordinary steel of equal weight. Tough tempered to spring back under abuse. Provides a secure form for trades and concrete — no side pull on joists, beams, or walls.



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CORRUFORM

is true and level. No cleanup necessary on floors below, no unsightly leakage. Bright, decorative corrugated pattern for exposed ceilings. Corruform is available plain, galvanized or vinyl-primed for painting.

SPECIFICATION

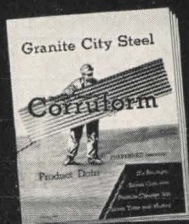
Standard weight Corruform with 2 3/16 inch wide, 1/2 inch deep corrugations. Weight .72 lbs. per sq. foot. Guaranteed average strength of 100,000 psi. — single test minimum strength 95,000 psi.

GRANCO STEEL PRODUCTS CO.

(Subsidiary of GRANITE CITY STEEL CO.)

Granite City, Illinois

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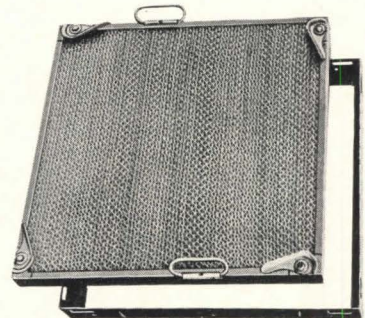
Architectural Engineering

PRODUCTS

(Continued from page 196)

Water Repellent Coating

Cor-O-Pel is a silicone base mixture designed to protect exterior surfaces from deterioration due to rain, smoke and soot by penetrating the pores of brick, stone, masonry and mortar. It is said to be invisible, stain- and water-resistant and easily applied. Recommended application is with a spray gun at not more than 20 to 25 lb pressure, although it can be applied with a brush. It is recommended for above-grade application only. Con-Cor Paint Co., 46th and Main, Whitton Manor Building, Kansas City, Mo.



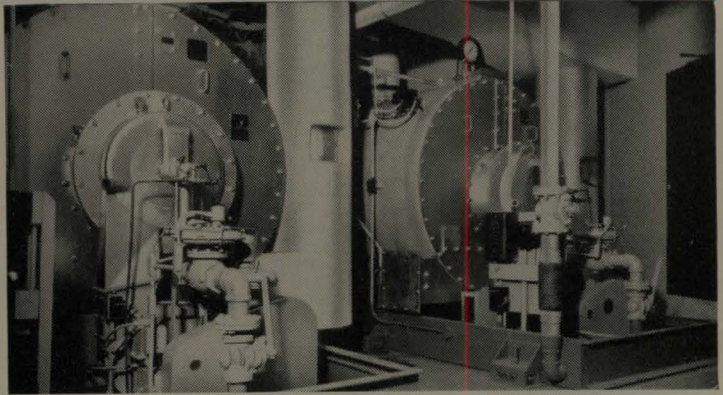
Filter is made of fine mesh wire strips

High Velocity Air Filter

A new high velocity unit air filter, the *American Type HV*, designed to operate at velocities up to 500 fpm, has been introduced. It is made of corrugated strips of fine mesh wire, with the corrugations tapered so that two strips placed together form a series of pyramid-shaped pockets. The small ends of the pockets are closed to the air flow which, according to the manufacturer, eliminates any open air passages through the media. The filter is said to maintain a uniformly high cleaning efficiency over a

(Continued on page 200)

"The Boiler-Room? — On the Roof, Sir"



The "First of Tulsa" Boiler Room —
Two Cleaver-Brooks 200 hp.
Gas Fired Boilers

Boiler-Room in the SKY..

Boiler Room Directly
Behind Roof Sign

FURTHER PROOF OF CLEAVER-BROOKS BOILER FLEXIBILITY

The new \$6,000,000 First National Bank of Tulsa, one of the finest buildings in the Southwest, is heated with Cleaver-Brooks Self-Contained Steam Boilers.

For very good reasons the boiler-room was placed at roof level. (Boiler-room is directly behind roof sign at top of building, instead of conventional location in basement.) First, since it was a bank building, basement space was extremely valuable for vaults, storage, and air conditioning equipment. Then, too, with the fresh air intake on the top of the building, a considerable amount of piping was eliminated by placing the boilers at the same point. Since Cleaver-Brooks boilers require only a simple vent for carrying off combustion gases, long stack runs were eliminated, leaving additional valuable space within the building.

These are just a few of the many reasons why Cleaver-Brooks boilers were specified. Being completely self-contained and compact in design, requiring minimum head room and floor area, Cleaver-Brooks boilers presented no installation problem.

Cleaver-Brooks Self-Contained Boilers are available for oil, gas, combination oil and gas firing, 15 to 500 hp, 15 to 250 p.s.i., for heating and processing loads. Write for the catalog.

CLEAVER-BROOKS COMPANY
362 E. Keefe Avenue • Milwaukee 12, Wis.

Cleaver-Brooks
STEAM BOILERS



The First and Finest of their Class

FIRST NATIONAL BANK OF TULSA
TULSA, OKLAHOMA

Carson & Lundin, *Architects*
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SWITCHING TO . . .

PARQUETRY
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ECONOMICAL

Asphalt Tile
FLOORING

FOR THAT RICH HARDWOOD EFFECT

- Resistant to stains, scratches and water.
- Easy-to-install and simple-to-clean.
- Years of lasting beauty.
- Economical, durable and resilient.

PARQUETRY is winning wider favor with architects and builders everywhere. In office buildings, housing units, and homes, it's always in good taste with any surrounding. It's different—it's new—and it's the hardwood floor effect at the cost of asphalt tile. PARQUETRY has universal appeal—an appeal that adds dignity to any room with modern or period furnishings. The rich natural oak appearance will match any architecture with no fear of color-clashing. You give home owners an *inexpensive* luxury when you specify PARQUETRY for an extensive renovation or a complete new home. This PARQUETRY asphalt tile is factory-waxed for lasting beauty and accurately sized for effortless installation. Make the switch to PARQUETRY, when hardwood effect is desired at the cost of asphalt tile.

Write for information and Portfolio AIA No. 23D

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Architectural Engineering

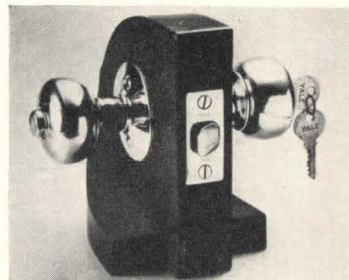
PRODUCTS

(Continued from page 198)

wide range of air velocities. Servicing can be done in the conventional way with washing and charging tanks, or the unit may be reconditioned by washing out accumulated dust with a hose and spraying with filter adhesive. American Air Filter Co., Inc., Louisville 8, Ky.

Tubular Locks For Homes

A new line of residential tubular locks called *Yale Home Duty Tubular Locks* features four models: entrance door locks; locks for closets, vestibules and



One of new line of residential locks

connecting doors; bedroom door locks; and kitchen and bathroom door locks. In order to save on critical materials, the company announces that it will discontinue several of its other lines of residential tubular locks. The new line will be available in brass knobs and trim for front doors. All others will have steel knobs and trim with satin brass finish.

All locks are pre-assembled at the factory into five component units. Installation, it is said, is easy and rapid thus reducing labor costs. The pre-assembled units are: latch assembly and face plate; outside rose with "bridge girders"; outside knob and spindle; inside rose; and inside knob. Yale & Towne Manufacturing Co., Chrysler Bldg., New York 17, N. Y.

(Continued on page 202)

SINKS FOR ANY SITUATION...

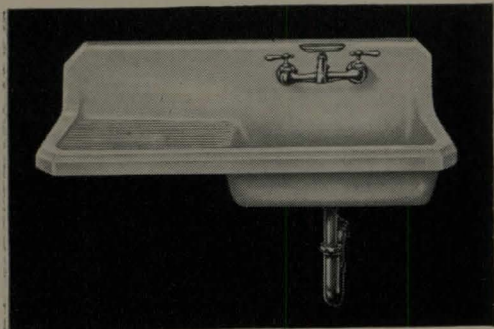
for
MODERNIZATION

for
**CUSTOM-BUILT
HOMES**

for
DEVELOPMENTS



THE RICHMOND SCHENLEY—Plate No. 1550: Single left drainboard roll-rim sink. Acid-resisting enamel. Drilled for deck-type supply fitting, with hose and spray. Size 42" x 25". Plate No. 1552: With single right drainboard. Size 42" x 25". Plate No. 1554: With single left drainboard. Size 42" x 22". Plate No. 1556: With single right drainboard. Size 42" x 22".



THE RICHMOND SAVONA—Plate No. 1815: Roll-rim sink with single right drainboard and integral back. Acid-resisting enamel. Size 42" x 20". Plate No. 1816: with single left drainboard. Size 42" x 20".



THE RICHMOND SERVILLA—Plate No. 1535: Double-drainboard roll-rim sink. Acid-resisting enamel. Drilled for deck-type supply fitting, with hose and spray. Sizes 54" x 25" and 60" x 25". Plate No. 1537: Sizes: 54" x 22" and 60" x 22".

● SINKS FOR EVERY TYPE OF INSTALLATION!

For built-in units—flat-rim sinks with single or double compartments for counter-top installations. With or without drillings for deck-type supply fittings. For base-cabinets—ledge-back sinks with single or double drainboards. For installations where space is at a premium—compact sink and tray combinations. For economical replacements—wall-hung roll-rim sinks with single (left or right) drainboards.

● SINKS IN RUGGED ENAMELED CAST IRON!

Durable cast-iron base with easy-to-clean, acid-resisting enamel for lasting beauty.

● SINKS THAT ARE SURE TO SATISFY!

Richmond quality sinks assure customer satisfaction, whatever type you install. Specify plumbing fixtures that carry the Richmond guarantee.



RICHMOND

RICHMOND RADIATOR CO.—AFFILIATE OF REYNOLDS METALS CO.

See your wholesaler or Mail Coupon today

Richmond Radiator Company AR/4
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Please send me full information on the Richmond line of cast-iron enameled sinks. No obligation, of course.

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COMPANY _____

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PRODUCTS

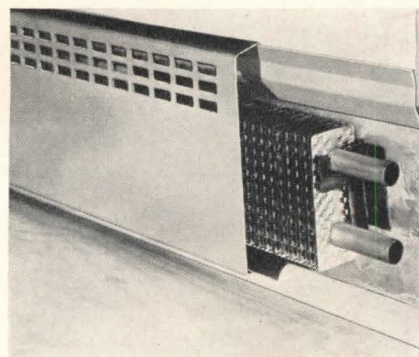
(Continued from page 200)

Precast Masonry Wall Sections

A new, factory-precaster masonry wall section which produces 40 sq ft of finished wall in one operation has been introduced. According to the company, these units save considerable installation time, as 40 sq ft of wall can be erected in five minutes. Average size of the hollow wall units is 4 ft wide, 10 ft high, 8 in. thick. It is claimed that no interior

or exterior finish is needed on the precast units.

All steps in the manufacture of the sections are performed under carefully controlled conditions in the factory. The concrete has lightweight expanded slag as the aggregate. The surface can be painted directly if desired. Left unpainted, the sections are said to resemble limestone. Advantages claimed include durability, high wind resistance and good insulating qualities. Precast Building Sections, Inc., New Hyde Park, Long Island, N. Y.



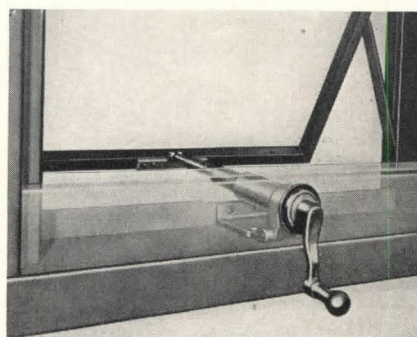
Aluminum fins aid radiant heating

Radiant Baseboard Heater

The *Brown Bayce Heel* radiant baseboard heater features beaded aluminum fins to provide greater radiation surface. The beading process is also claimed to strengthen the fins and provide longer life of the product. The baseboard is made up in standard 5 ft units that weigh 12 lbs. Each unit can be cut to any desired length. The heaters are mounted on 3 wall brackets, and extend 1 1/8 in. from the wall. Cover panels are removable for cleaning, and feature a closed top with openings on the front to prevent streaking the wall. Brown Products Co., Forest Hills, N. Y.

Awning Window Adjustor

The new *Telescoping Adjustor* for *Fenestra* awning windows is said to provide economical operation of ventilators and to eliminate the necessity for opening detention-type screens. Made of solid bronze, the adjustor has a case



With new window adjustor, screens may be left on permanently

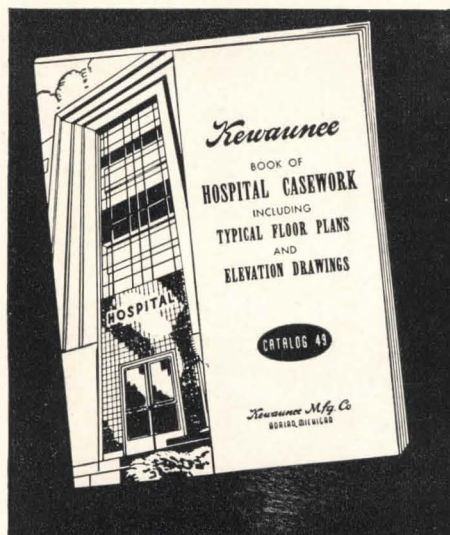
enclosing four telescoping screws with machine-cut threads. The removable bronze crank handle can be replaced by either a direct pole or chain wheel if windows are far from the floor. Such

(Continued on page 204)

YOURS for the asking!

TWO HELPFUL BOOKS

Every architect will want the time-saving *Kewaunee Book No. 49*—and the latest *Kewaunee Catalog No. 50*.



On every Hospital job you will find the *Kewaunee Book No. 49* most helpful. Its 90 pages show the *Kewaunee* line of casework and cabinets—with 40 of the pages devoted to Floor Plans and Elevation Drawings. It's a real time saver for architects.

Along with this Hospital Casework and Cabinet Book we will also send the *No. 50 Kewaunee Catalog of Laboratory Furniture* in wood or metal.

Book No. 49 shows the following Floor Plans: Laboratory, Pharmacy, Emergency Room, Delivery Suite, Radiographic Suite, Operating Suite, Cystoscopic Room, Fracture Room, Instrument and Sterile Supply Room, Nurses' Station, Floor Pantry, Dental Suite, etc., etc.

Book No. 50 contains 128 pages devoted to Laboratory Tables, Desks, Fume Hoods, Sinks, etc.

Your request on your Professional or Hospital Letterhead will bring you both helpful

Kewaunee Books No. 49 and No. 50.

Sales Offices in Principal Cities



Another Outstanding Installation



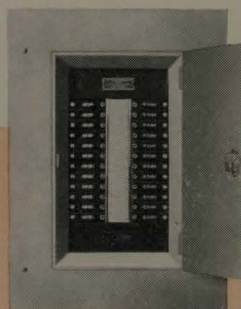
Baskerville & Sons, Architects and Engineers, Richmond, Va.
Samuel Hannerford & Sons, Consulting Architects, Cincinnati, O.

LOUISE OBICI MEMORIAL HOSPITAL and NURSES' HOME *Suffolk, Virginia*

Adequate power and light is vital, not only to hospitals and other institutions, but to modern industry. That's why FA products are being installed in more and more institutions and industrial plants.

Architects, engineers, contractors, builders and industrialists know from years of practical experience that FA is a symbol of quality — that its power and light distribution systems, and other products are safe, dependable, efficient, and economical . . . and will provide years of trouble-free service.

The next time you are confronted with a power and light distribution problem, do as so many others are doing; contact your nearest FA representative (he's listed in Sweet's) or write for complete information.



FA Circuit Breaker Panelboard similar to that installed in Louise Obici Memorial Hospital and Nurses' home. Capacities, 15 to 50 amperes, single and double pole, 120—240 volts, three wire, or 120—208 volts, 4 wire main, 42 circuits and less.



FA Shutlbrak Switchboard which has proven extremely popular and practical for hospitals and other institutions. Designed for main feeder and branch circuits. Capacities 30 to 1200 amperes, 250 volts AC or DC and 600 volts AC 2, 3 and 4 pole types.



Frank Adam Electric Co.

P. O. BOX 357 ST. LOUIS 3, MO.

Makers of BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER

Our 60th Year

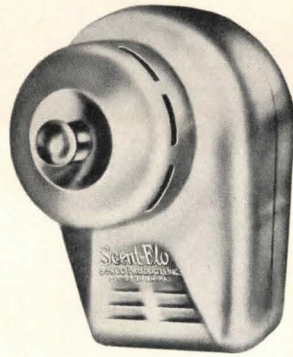
PRODUCTS

(Continued from page 202)

installations are claimed to have wide use with awning windows in tuberculosis hospitals, fresh-air schools and other buildings requiring weather protected ventilation. Detroit Steel Co., 3113 Griffin St., Detroit 11, Mich.

Electric Air Freshener

Recommended for use in hospitals, homes, industrial plants, etc., an elec-

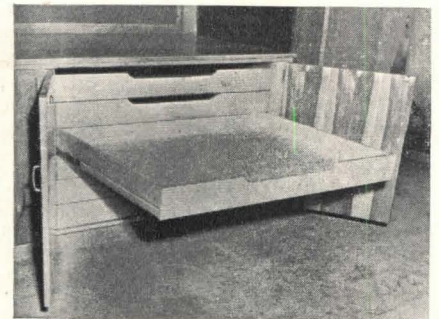


Unit freshens air and circulates it

trically operated, self-contained device, the *Scent-Flo Electric Air-Freshener*, is said to offer positive circulation of specially compounded chemical deodorants which neutralize and destroy offensive odors. The scents emanated from the unit are claimed non-toxic. The unit is four in. high; weighs two lb, and comes finished in a choice of six colors. Its electric motor is 6.3 w, 110-115 v, 60 cycle and carries a 12 month warranty. Chemical refill discs may be obtained from the manufacturer. Surco Products, Pittsburgh 12, Penna.

Drawer Support

The *New Standard Extension Drawer Support* is designed to eliminate the need for framing of drawers, thus permitting extra drawers in the same amount of cabinet space. It is claimed that drawers can be fully closed by pressure on one side of the front. It is said to eliminate binding and the drawer cannot fall out,



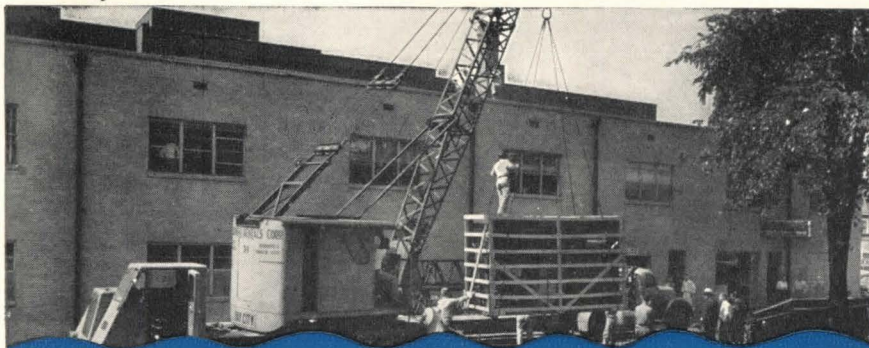
Drawer support enables opening of drawer to full depth

due to the design of the mechanism. The support consists of four right-angle pieces of metal—two to each drawer side. Two of the pieces are tracks, and are screwed into the side of the case in a stationary position. The other two pieces, support angles, are attached to the drawer, and fitted into the stationary pieces. The drawer may be lifted out of the tracks for cleaning. The Extension Drawer Support Co., 3727 Broadway Place, Los Angeles 7, Calif.

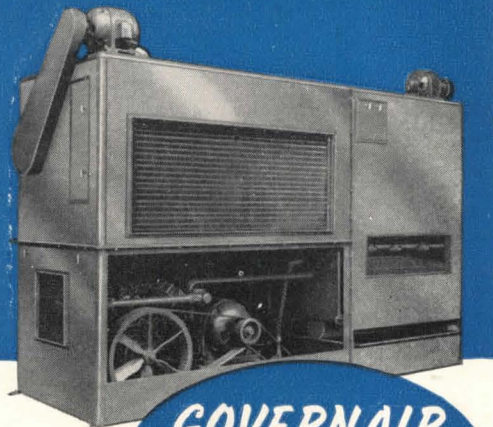
Submersible Pump

A new pump that is water lubricated, self-priming and water cooled, is the *Fairbanks-Morse Submersible Pump*. The

(Continued on page 206)

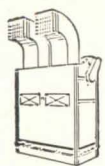


**SAVE
UP TO
\$5,000
ON AIR
CONDITIONING!**



**GOVERNAIR
COMPLETELY PACKAGED
AIR CONDITIONER**

PAT. NO. 2,297,928



UNIT COOLERS



EVAPORATIVE CONDENSERS



AIR CONDITIONERS

Save water! Save space! Save installation time and money! Save operating costs! Yes, install Governair and save from \$50 to \$200 for each ton of the completely packaged Governair unit designed to fit your needs! Experience proves Governair can save you up to \$5,000 on

a 50-ton Governair unit that gives greater dependability and more "engineered efficiency" than ever before!

If you want the best—if you want the most economical and reliable air-conditioning unit on the market... CHOOSE GOVERNAIR and SAVE!

ORIGINATORS OF COMPLETELY PACKAGED AIR CONDITIONERS

GOVERNAIR

Governair Corporation • 513 N. Blackwelder • Okla. City



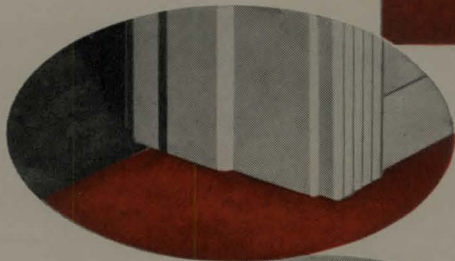
BLAST COILS FOR HEATING & COOLING

Don't accept these ugly TACK MARKS

specify **Smoothedge**
TACKLESS INSTALLATION
FOR FLAWLESS CARPET BEAUTY



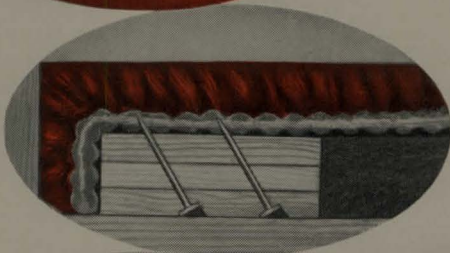
YOU GET THIS



Smooth flowing beauty at carpet borders . . . no ugly tack marks, scallops, dirt catching indentations or ripples.

Specify **SMOOTHEDGE Tackless Installation.**

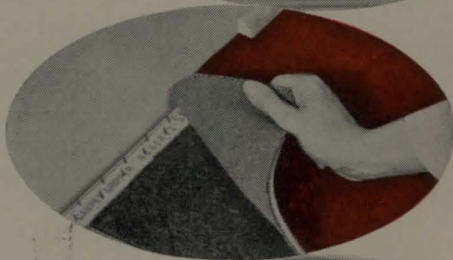
HERE'S WHY



SMOOTHEDGE gripper holds the carpet firmly and invisibly from beneath . . . you see nothing but beautiful carpet.

Specify **SMOOTHEDGE Tackless Installation.**

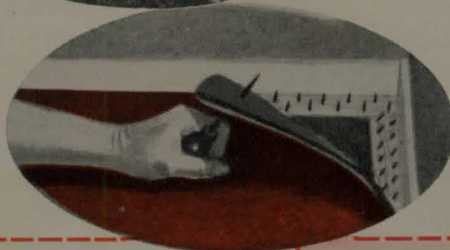
HERE'S HOW



SMOOTHEDGE works much like a curtain stretcher. Carpet is securely hooked at one wall, then stretched and hooked at the opposite wall.

Specify **SMOOTHEDGE Tackless Installation.**

IT'S EASY



No troublesome tack pulling when sending out for cleaning . . . removal is as easy as opening a zipper, and re-installation is fast and simple.

Specify **SMOOTHEDGE Tackless Installation.**

easy to specify—available nationally

Handled by over 4,000 carpet retailers and by 68 carpet distributors. Recommended by leading carpet mills for wall-to-wall carpet installations.

SEND FOR A.I.A. FILE AND NAMES OF INSTALLATION CONTRACTORS NEAREST YOU

THE ROBERTS CO., Dept. AS-4
1536 N. Indiana Street, Los Angeles 63, California

- Please send me Smoothedge A.I.A. file.
- Installation Manual.
- Names of nearest contractors.

Name _____

Address _____

City _____



PRODUCTS
(Continued from page 204)

company states that in addition to the above features, the pump is easy to install by adding pipe lengths to the depth of the water, and requires no jets, rods or shafts. The pump is designed for settings in excess of 70 ft deep, and for well diameters of 4 in. and larger.

It is claimed that no priming is required, as all operating elements are

under water. The motor consists of a sealed rotor and stator—water-lubricated and water-cooled. Motor relay and capacitor are located in a control box above ground and may be removed without disturbing the main well installation. Fairbanks, Morse and Co., 600 So. Michigan Ave., Chicago 5, Ill.

New Plastic Designs

“Skylark” and “Fernglo” are the names given to the newest designs of the

Formica line of decorative laminated plastic panels. “Skylark” is an abstract pattern; “Fernglo” is a foliage pattern. Both were designed by Brooks Stevens Associates. The first pattern is available in 10 colors and the latter in seven. The Formica Co., 4614 Spring Grove Ave., Cincinnati 32, Ohio.

Window Wall Frame

Complete frames, designed to accommodate 45½ by 25½-in. double pane insulating glass, are said to save labor and money as they come complete, ready to be assembled at the building site. According to the manufacturer, use of the

Time saved means added profit

TIME 1 hr. 32 min.

1:00 P.M.—ready for final covering.

Corner is just pulled down and tacked—no cutting—no forming—no pleating.

Because of stretch there are very few wrinkles.

Smooth corner—no pleats—no sharp wearing points.

Very easy—just a few tacks while stretching it into shape.

Tacks hold firmly in the strong fabric NAUGAHYDE forms and tough plastic—even under severe strain.

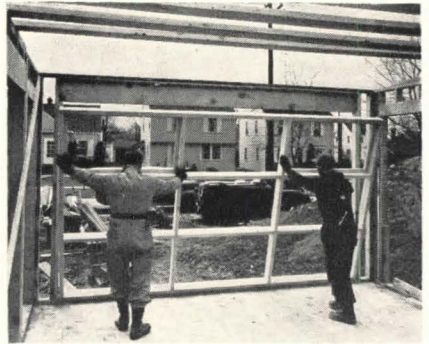
Working out wrinkles is easy and pleasant.

Cut anywhere to relieve strain. Elastic NAUGAHYDE forms itself—only a few tacks are needed.

2:32 P.M. chair finished.

The back flows on quickly and easily.

2:32 P.M. chair finished.



Workmen installing window wall frame which comes prepackaged to the job

window-wall frame cuts the cost of installing the complete units, as material and labor costs of sheathing, plastering, painting and conventional fenestration are eliminated, thus enabling home owners to use window walls at approximately the same price as a conventional wall and windows.

Standard frames are available in nine sizes, made of 2-by 6-in. fir. Fabrow Manufacturing, Inc., 7208 Douglas Rd., Toledo, Ohio.

with new E-L-A-S-T-I-C Naugahyde Upholstery

TIME: 1 hour, 32 minutes to do a difficult chair.

40 minutes less than with commonly used upholstery fabrics. This new vinyl plastic on a stretchable, knitted backing offers sensational new advantages. It pulls smooth around curves and corners. It automatically “rounds,” when straight cuts are used to relieve strain, eliminating “running.” Tacks hold firmly; no special tools are needed.

Result of 5 years’ research—Elastic Naugahyde resists scuffs, chipping, peeling or cracking. Not affected by weather or fading. Impervious to oils, grease, most acids, alkali or perspiration. Washable. Here’s “Everlasting” beauty and durability.



LOOK FOR THIS LABEL



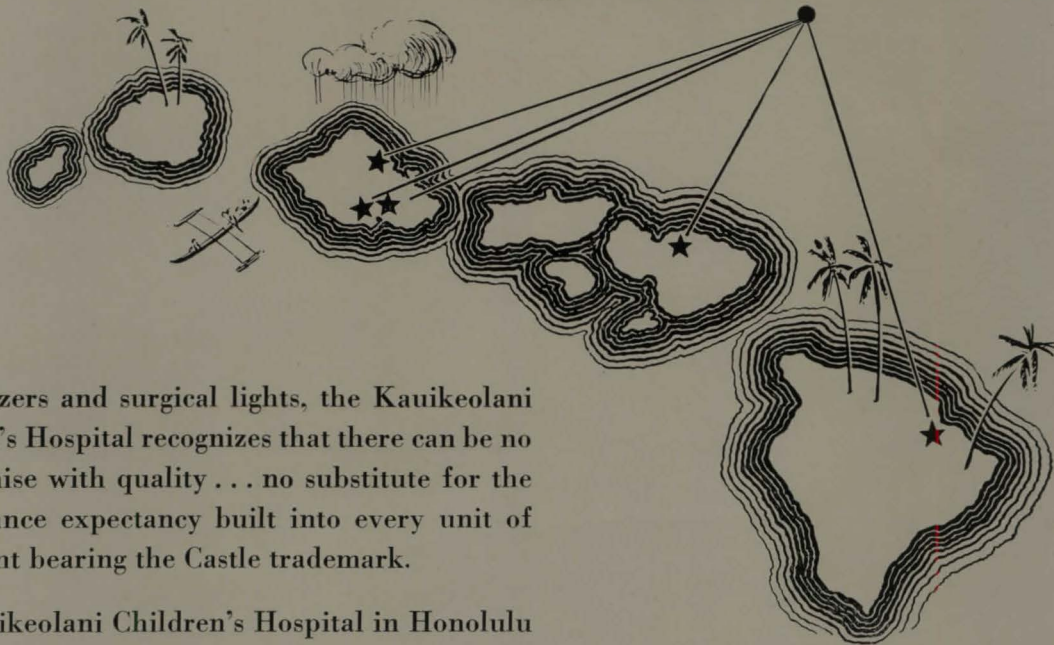
UNITED STATES RUBBER COMPANY
COATED FABRICS DEPARTMENT, MISHAWAKA, INDIANA

Suspension System for Acoustical Ceiling Tile

Acousti-Lock, a direct-to-metal suspension system, is said to permit attaching kerfed acoustical ceiling tile for air-tight ceilings without the use of backing materials. Designed for use with 12 by 12 in., and 12 by 24 in. acoustical tiles, the system is of all-aluminum construction with the following features: interchangeable use of I-Runners as carrying members and provision for furring in concrete or attachment to hollow tile.

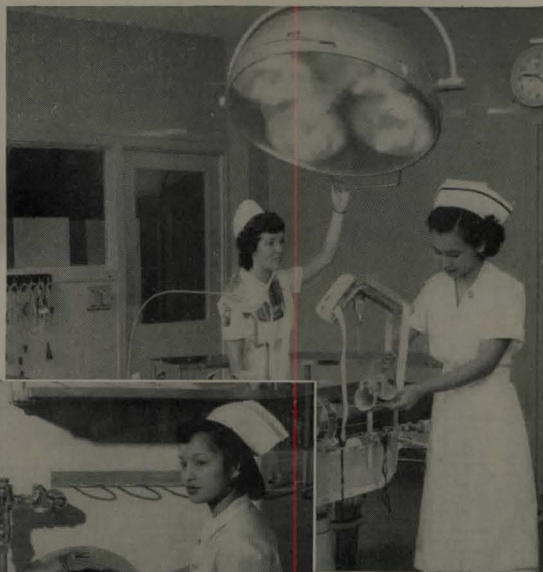
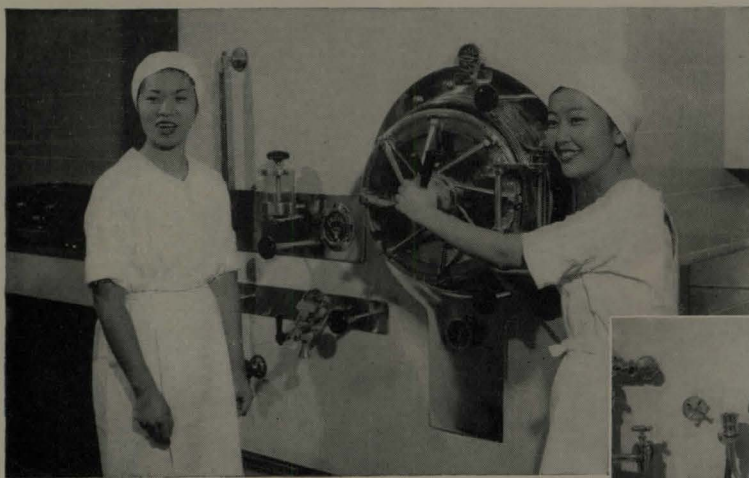
(Continued on page 210)

Hawaii goes *Castle*



In sterilizers and surgical lights, the Kauaikeolani Children's Hospital recognizes that there can be no compromise with quality . . . no substitute for the performance expectancy built into every unit of equipment bearing the Castle trademark.

The Kauaikeolani Children's Hospital in Honolulu is one of 5 major Castle installations recently made in this vitally important part of our country.



TO HOSPITAL ARCHITECTS AND CONSULTANTS:

We offer the experienced know-how of our Planning Department as a gratis service. We welcome the opportunity to aid in the development of any project ranging from a small sub-sterilizer room to a large medical center.

Write Wilmot Castle Company
1258 University Avenue, Rochester 7, New York

Castle

STERILIZERS AND LIGHTS

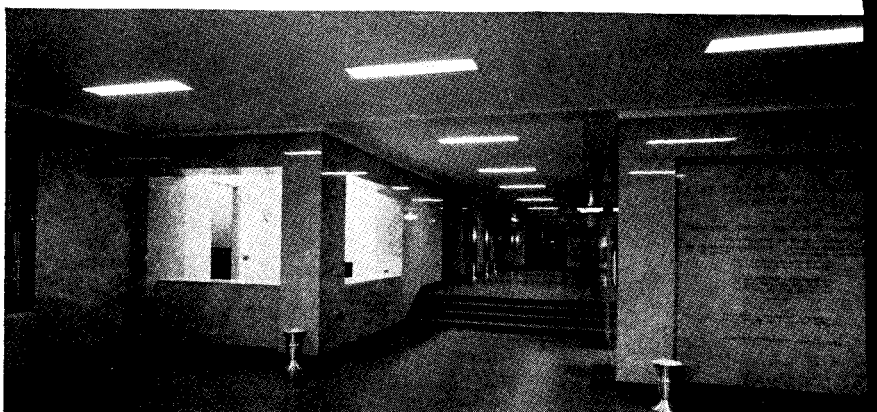
Care and Conscience Designs One of the



From the port-cochere, the interior presents a quiet, capable appearance.



The simple dignity of the entrance hall is lit by glareless Day-Brite glass enclosed troffer



Left to right:
Shi G. Goodwyne,
Albert B. Baumann, Jr.,
Will W. Griffin.



South's Finest Hospitals



When three distinguished Knoxville architects like Albert Baumann, Jr., Will Griffin and Shi Goodwyne tackle a project, the results are going to be a dramatic example of designing skill. The new 200-bed East Tennessee Tuberculosis Hospital at Knoxville paves an architectural milestone for simple, modern beauty and solid patient comfort.

But Baumann, Griffin and Goodwyne know that an architect's task goes far beyond just planning. That's why they examined every item of equipment with critical care. That's why they selected on a basis of quality—estimating initial costs, installation costs and maintenance costs against performance—to make every dollar spent an investment for the present and the future.

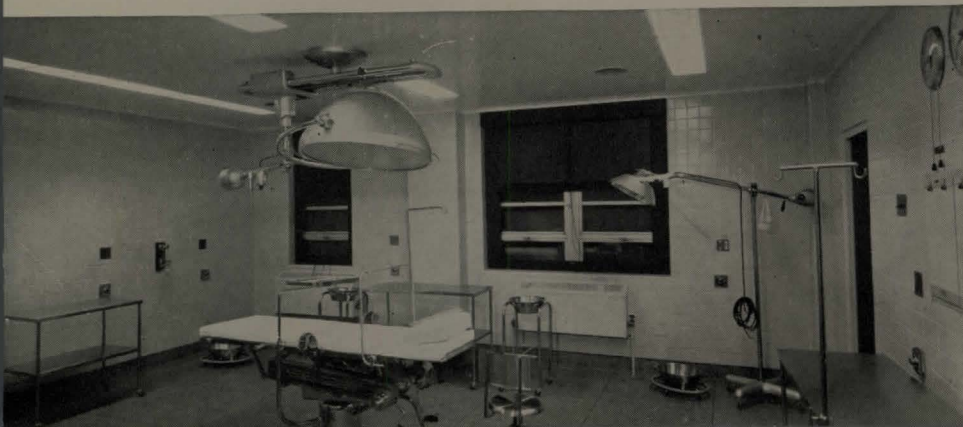
It was a direct result of this kind of practical specifying that made them choose Day-Brite fixtures to light the corridors, operating rooms, lounges, offices and staff rooms of the impressive East Tennessee Tuberculosis Hospital. They knew that the hospital would benefit from superior lighting fixtures whose first cost would be absorbed by years of lower operating and maintenance costs. And it was a decision made on personal experience, since Mr. Baumann uses Day-Brite fixtures in his own offices and drafting rooms.

There is an ideal lighting fixture in the Day-Brite line for all of your projects, too. For, whenever you specify Day-Brite you're getting a guarantee of top-quality performance at reasonable cost.

Day-Brite Lighting Inc., 5465 Bulwer Ave.,
St. Louis 7, Missouri. In Canada: Amalgamated
Electric Corp., Ltd., Toronto 6, Ontario.

116

Every corner of the 5th floor operating room receives uniform, vision-saving illumination.



"DECIDEDLY BETTER"
DAY-BRITE
Lighting Fixtures

PRODUCTS

(Continued from page 206)

The system consists of five parts: I-Runner, I-Runner Splicer, T Reinforcement Spline, Flat Spline and L-Moulding. The system is said to permit the use of any acoustical material, including fibre board, mineral, glass fibre, and cork. Midwest Acoustical & Supply Co., West 69 St., Cleveland 2, Ohio.



Left: artist places plastic cutouts on grid.
Right: floor plan print is made in case

Specify Correct Maintenance Products



*plan
longer life
for floors*

GIVE FLOORS THE RIGHT START

FLOORS have a much greater life expectancy, and a better chance for keeping their beauty when they are started on the right maintenance program. Wood, terrazzo, linoleum, asphalt, rubber and cork tile and other materials have specific maintenance needs which **Huntington Laboratories** manufactures. Write for our literature and ask for our help when you have a special problem.

PAX Terrazzo Seal
for curing and sealing.
SEAL-O-SAN Finishes
for every wood floor.
FLOOR-SAN Cleanser
safe and thorough.
WEATHERALL Wax
water resistant, anti-slip.

Made by the Makers of Seal-O-San

HUNTINGTON LABORATORIES, INC.
Huntington, Indiana • Toronto, Canada



see our catalog in *Sweet's*

Layout Planning Kit

A portable kit for working out floor plans and furniture layouts to scale, also produces black and white prints of the plans. It is designed for use by amateurs, as well as an aid to architects and engineers. To make a layout and prints, the plan of the room or space is drawn to $\frac{1}{4}$ -in. scale on a transparent sheet of plastic which is ruled in $\frac{1}{4}$ -in. squares. The layout is outlined on the grid sheet with pencil, then flat plastic cutouts of furniture and equipment which are supplied with the kit, are arranged on the sheet over a steel faced board. Units are held in place by small magnets. Sensitized paper is then slipped between the sheet and the work board and exposed for 3 minutes to ultra-violet ray lamps mounted in the carrying case. The exposed paper is removed and swabbed with developing fluid and the print is instantly developed. Kits are available in three sizes: 12 by 18 in.; 18 by 24 in.; and 24 by 36 in. Gross Engineering Co., Inc., Three Rivers, Michigan.

Clinical Vacuum and Pressure Systems

Whittington central vacuum and pressure systems are said to provide increased efficiency and lowered costs for the contemporary hospital. Available are vacuum systems, pressure systems and combination vacuum-pressure systems. Each comes in various sizes and is said to require only a small amount of floor space. Installation to existing piping systems is claimed to be easy. Each system is equipped with a germicidal lamp to kill bacteria, viruses, fungi. Whittington Pump & Engineering Corp., 1126 Prospect St., Indianapolis 3, Ind.

(Continued on page 212)

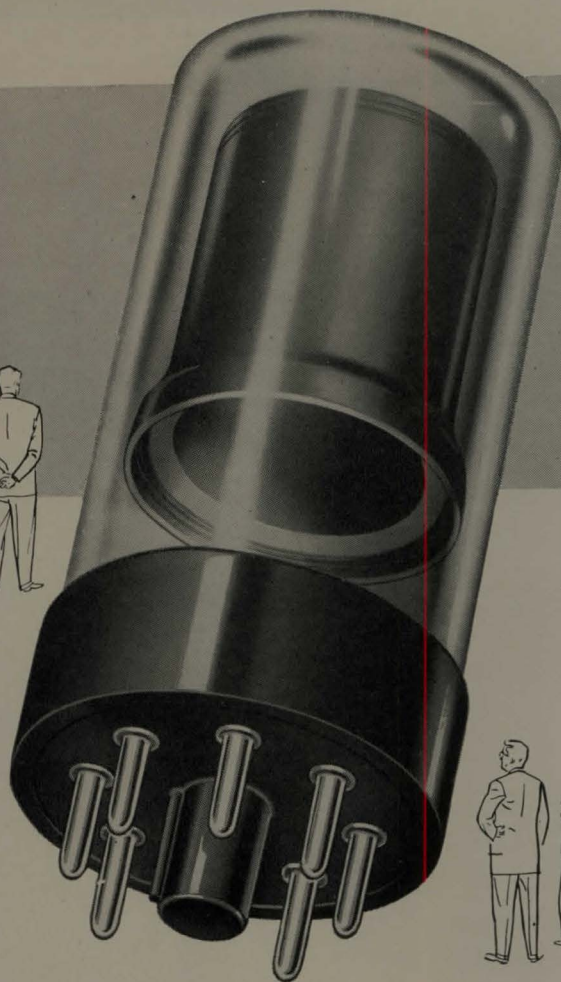
formed under
vacuum
for greater
strength

Vitrified CLAY PIPE

DE-AIRING — a process that makes Clay Pipe *stronger* for greater load-bearing, *denser* for less absorption, and dimensionally *truer* for faster installation — takes place in a vacuum press as the pipe is precision-formed under pressures as high as 75 tons.

De-airing, like the exclusive Vitrification process, is an outstanding example of technology at work for you . . . bringing you *better* Clay Pipe — stronger, denser, truer lengths for every sewerage and drainage use. Industry-wide research is constantly improving the traditionally high quality of Vitrified Clay Pipe — and developing new test procedures to *insure* consistent standards.

Vitrified Clay Pipe requires no "extras" . . . no special coatings to protect it from deterioration. It is corrosion-proof *throughout* — completely immune to destructive chemicals in soil, sewage, or industrial waste. You can specify it *safely*, with complete assurance that Clay Pipe *never wears out*.



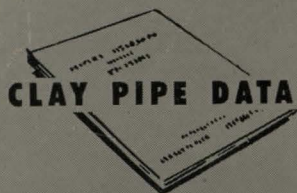
NATIONAL CLAY PIPE MANUFACTURERS, INC.

100 N. LaSalle St., Rm. 2100, Chicago 2, Ill.
206 Connally Bldg., Atlanta 3, Ga.
703 Ninth & Hill Bldg., Los Angeles 15, Calif.
311 High Long Bldg., 5 E. Long St., Columbus 15, Ohio



SPECIFY *Vitrified*

**CLAY
PIPE**



WRITE FOR DETAILED INFORMATION

Additional information and data on Vitrified Clay Pipe, Wall Coping and Clay Flue Lining sent FREE on request. State your specific questions. Simply contact the regional office nearest you.

C-151-9

PRODUCTS
(Continued from page 210)

Masonry Wall Coating

Durepel powder, according to the manufacturer, is a combination of inorganic mineral and metallic components which, with addition of water, reacts and cures to form a hard, dense surface coating to protect interior and exterior masonry walls against absorption of moisture. The surface is said to be non-

powdering. The natural finish is egg-shell white. It is also available in buff, grey, green and rose.

It is recommended for use on concrete masonry blocks, cinder block and stone block, as well as on asbestos cement sidings and cement stucco. For exterior surfaces and interior surfaces below ground level, two coats should be used. Besides home use, it is claimed to give protection when used on swimming pools, water tanks, tunnels, sidewalks and elevator pits. Durepel Corp., 10 E. 43rd St., New York 17, N. Y.



Basic unit of kitchen designed to be expanded to fit budget and space

Packaged Kitchen

The Mrs. America kitchen is a small packaged group of units designed to serve as a starter for a full installation or for use where space is at a premium. The units include: a 54-in. sink, with rinse spray and aerator; two 21-in. base cabinets with black or red plastic tops; two 21-in. wall cabinets 30 in. high, with removable shelves; and two wall open shelves. According to the company, the packaging plan has resulted in lower cost than if the units were purchased separately. American Kitchens, American Central Division, Avco Manufacturing Corp., Connersville, Indiana.

- The Liaison Committee of the Mechanical Specialty Contracting Industries has been formed by the Heating, Piping and Air Conditioning Contractors National Assn., the National Assn. of Master Plumbers and the National Electrical Contractors Assn. This is in cooperation with the federal government and the building construction industry to further the national defense program. Offices are at 610 Ring Bldg., Washington 6, D. C. George B. Roscoe is secretary.

- The name of the Flooring Division of Hood Rubber Co., a division of B. F. Goodrich Co., has been changed to "The B. F. Goodrich Co., Flooring Division." The company announces that this is a change in name only and does not represent any change in ownership or management. The division's address is still Watertown 72, Mass.

- The U. S. Gutta Percha Paint Co., of Providence, R. I., has changed its name to "The Barreled Sunlight Paint Co." The management announces that this means no change in either ownership or management of the company.



YESTERDAY
TODAY and
TOMORROW

AMWELD
STEEL DOORS AND FRAMES,
SLIDING CLOSET DOOR UNITS
THE FAVORITE OF HOMEMAKERS AND ARCHITECTS

... And the reasons — they cut building costs, provide lasting beauty with trouble-free service, meet today's construction standards, blend with all types of construction, and require less installation time.



K-D UNITS TOO

Sliding Closet Door Units are also available in packaged, knocked-down form, complete with header, jambs, track and hardware. Suitable for new construction and particularly adaptable for remodeling.

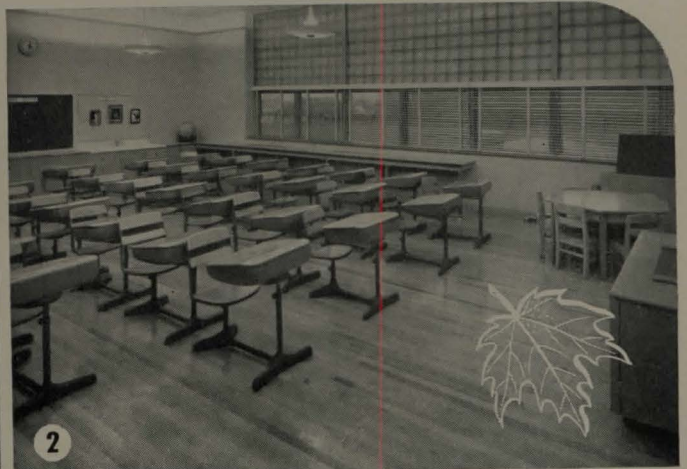


BUILDING PRODUCTS DIVISION
THE AMERICAN WELDING & MANUFACTURING CO.
340 DIETZ ROAD • • WARREN, OHIO



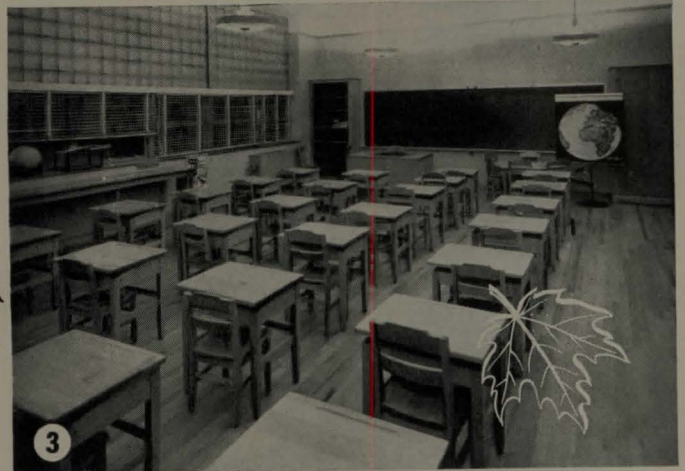


1 Boys' gymnasium, maple-floored, as is its counterpart, the girls' gymnasium.



2 Bright maple floors complement the excellent lighting of classrooms.

3 No dirt-harboring cracks, no splinters, no light-absorbing heaviness of tones.



ARCHITECTS

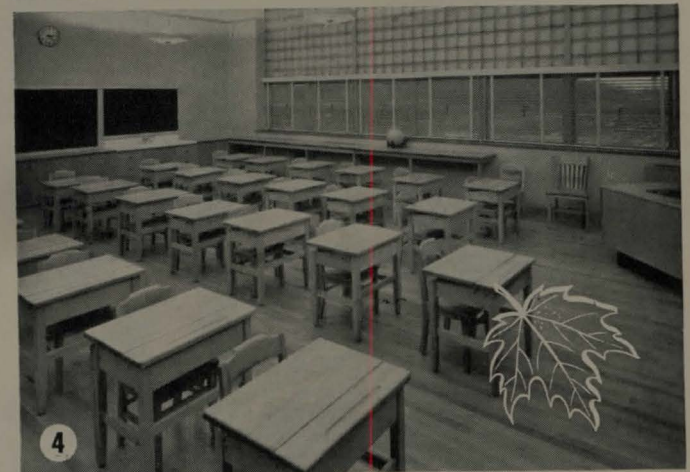
F. J. and W. A. Kidd,
Buffalo, New York

GENERAL CONTRACTORS

John W. Cowper, Inc.,
Buffalo, New York

NORTHERN HARD MAPLE FLOORS INSTALLED BY

Lamkin & Birch Floor Co.,
Buffalo, New York



4 How well maple comports with the clean and modern lines of today's furniture!

5 Music and community room areas, maple-floored, pleasant, cheerful, practical.

6 Clinic loses its cold "hospital look" when floors are warm, resilient maple.



In One Compact UNIT . . .

DEPENDABILITY

From 25 to 304
Horsepower

for every
need . . .



TITUSVILLE

ALL-WELDED WP-WPO Firebox Boilers

The *only* all-welded, return tube, firebox type high pressure boiler—providing leakproof, troubleproof performance on continuous schedules for hospitals, institutions and industries. The Titusville Type WP-WPO Firebox Boiler is precision die formed and welded—built to ASME code with a 5-plus factor of safety—Standardized ratings, with large reserve capacity—gives excellent results with oil, gas or coal firing. Write for detailed, descriptive brochure.

THE TITUSVILLE IRON WORKS COMPANY

A division of



TITUSVILLE, PENNSYLVANIA
Representatives in Principal Cities

Architectural Engineering

LITERATURE

(Continued from page 172)



Air Diffusers

Ceiling Architecture. Booklet deals with architectural aspects of ceilings. Four experts discuss: air diffusion, acoustics, lighting and color—as each is related to subject at hand. Pictures show various types of fixtures in different settings in offices, schools, theatres, churches, stores and homes. Various types of diffusers are shown, installation data given. 25 pp., illus. Anemostat Corporation of America, 10 East 39th St., New York 16, N. Y.*

Forced Air Furnace

Majestic Oil or Gas Utility Furnace. Leaflet describes various models of the furnace. Table lists furnace specifications for both perimeter and convectional heating. 6 pp., illus. The Majestic Company, Erie St., Huntington, Indiana.*

Boilers

Straight Ahead Since 1886. Leaflet issued commemorating 65th anniversary of Fitzgibbons Company. Short history of company, plant operations and typical installations given. Information on six models includes sizes and Btu per hour. 6 pp., illus. Fitzgibbons Boiler Company Inc., 101 Park Ave., New York 17, N. Y.*

* Other product information in Sweet's File, 1951.

(Continued on page 218)

Kentile can be installed over any smooth, firm interior surface

Wood—Boards for rough flooring should be nominal 1 x 4's or 1 x 6's that are square edged and nailed twice at each bearing, preferably running diagonally. T & G top flooring should not be over 3" wide. 1/4" waterproof plywood laid over the rough flooring makes a suitable surface to receive Kentile.

Metal—Kentile can be installed over metal if the surface to be covered is firm, smooth, clean, free of scale, dust, oil, grease and other foreign matter.

Concrete—Kentile can be installed over concrete that is smooth and free of foreign matter...even concrete on fill in direct contact with the earth...walls and floors above or below finish grade.

Kentile should not be installed out-of-doors or over wood in contact with the earth. Kentile should not be installed in commercial areas where it is exposed to petroleum or cooking greases and oils, alcohols and most acid solutions. In cases such as these, SPECIAL KENTILE is recommended. It can be installed wherever standard Kentile can be used.

The following literature is available on request and is designed to aid in the specifying of floors and walls for residential, commercial or industrial building or remodeling.

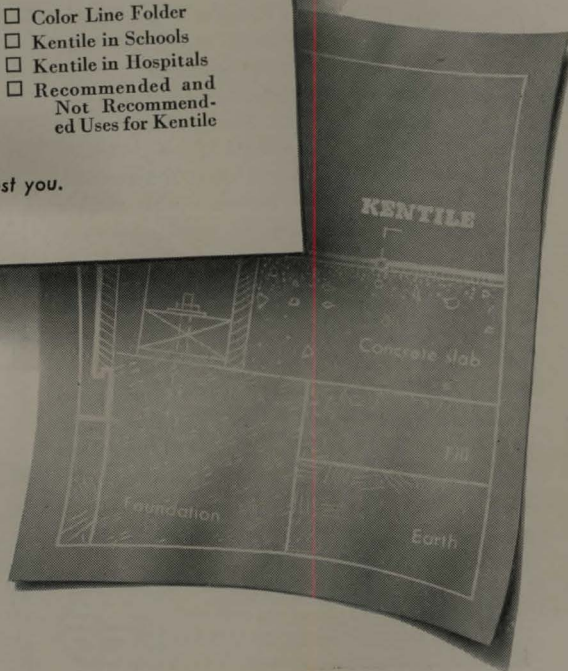
- Architects Specifications
- 16 Page Catalog—includes 4-color photos of Kentile installations

- Color Line Folder
- Kentile in Schools
- Kentile in Hospitals
- Recommended and Not Recommended Uses for Kentile


Please write the Kentile, Inc. office nearest you.

✓ SPECIFY KENTILE BY NAME...because of its

- ...**appearance**—a complete range of marbled colors in Kentile and SPECIAL Kentile. Also, feature strips, decorative inserts, edging and cove base.
- ...**installability**—Kentile can be applied over any smooth wood, metal or concrete surface...even below finish grade over concrete on fill in direct contact with the earth.
- ...**availability**—Over 3,000 Kentile dealers throughout the country assure prompt attention to your needs.
- ...**service**—Nine conveniently located Kentile, Inc. offices and a nation-wide system of trained representatives plus a comprehensive selection of technical literature, are available to help solve any flooring problem.
- ...**low cost**—Installed prices are lower than those of practically any flooring material; varying with size and condition of floor; colors and thicknesses chosen and freight rates. Accurate estimates are available from any Kentile dealer—listed under FLOORING in your classified phone directory.



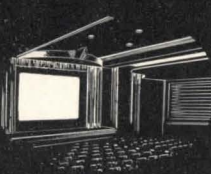
KENTILE®

The Asphalt Tile of Enduring Beauty 

KENTILE, INC., 58 Second Avenue, Brooklyn 15, New York • 350 Fifth Avenue, New York 1, N. Y. • 705 Architects Building, 17th and Sansom Streets, Philadelphia 3, Pennsylvania • 1211 NBC Building, Cleveland 14, Ohio • 225 Moore Street, S.E., Atlanta 2, Georgia • 2020 Walnut Street, Kansas City 8, Missouri • 1440 11th Street, Denver 4, Colorado • 4532 South Kolin Avenue, Chicago 32, Illinois • 1113 Vine Street, Houston 1, Texas • 4501 Santa Fe Avenue, Los Angeles 58, California • 95 Market St., Oakland 4, Calif. • 452 Statler Building, Boston 16, Mass.

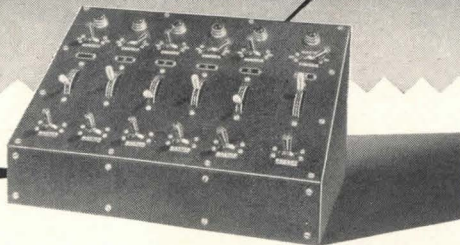
LITERATURE

(Continued from page 216)



REMOTE CONTROL of LIGHT

yours *Automatically* with



POWERSTAT Light Dimming Positioner Control

Where space is at a premium . . . where lighting scenes must be set in advance and where the utmost in automatic light dimming control is desired, POWERSTAT Light Dimming Equipment with POSITIONER Control serves most effectively.

Basically, POSITIONER dimming control consists of a motor-driven POWERSTAT Dimmer, a control circuit and a miniature dimmer control. The motor-driven POWERSTAT and control circuit can be placed in any out-of-way space and the miniature dimmer control station at the preferred location. Essentially, two types of POSITIONER control are possible. One type features various miniature stations controlling an individual POWERSTAT Dimmer. The other type is a complete, compact switchboard in miniature with multiple selector stations controlling an equal number of POWERSTAT Dimmers from a remote location. This latter type has all controls accessible to a single operator. Complete programs can be set in advance and at set time intervals, switches are actuated to concur with performance.

The miniature dimmer control has a vertically operated handle and a graduated drum with markings so that illumination intensity can be set to any degree of brilliance without actually viewing the lighting results.

To learn more about POSITIONER Control of POWERSTAT Light Dimming Equipment, write for Bulletin No. PC451.

THE SUPERIOR ELECTRIC CO.
BRISTOL, CONNECTICUT



THE SUPERIOR ELECTRIC CO.,
9041 Demers Avenue, Bristol, Connecticut

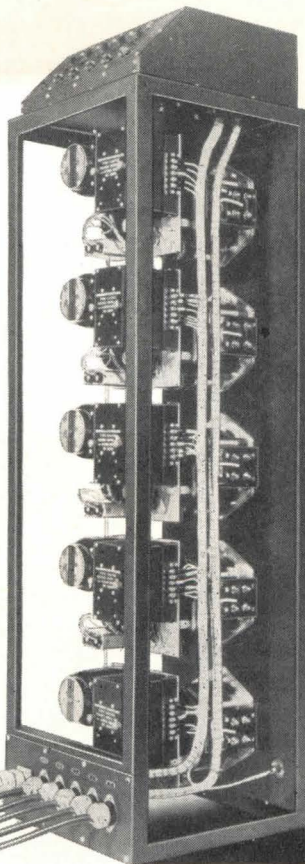
Please send me more information on POSITIONER CONTROL of POWERSTAT Light Dimming Equipment.

My Name _____

Company Name _____

Address _____

City _____ Zone _____ State _____



Steel Hospital Equipment

Moduline. Module (unit) Steel Furniture for the Hospital and Laboratory. Booklet describes component basic units of equipment and illustrates typical installations. Possible combinations shown in cut-away drawings with floor plans. Dimensions for all units given. Page of accessories is included. 20 pp., illus. A. S. Aloe Co., 1831 Olive St., St. Louis 3, Mo.

Radiators

Low-Level Convector Radiators (Catalog No. 4150). Brochure describes convector radiators especially designed for installation beneath picture windows, and which may be installed as either free-standing or partially recessed units. Dimensions and design features are described, and the following data are given: steam capacity data, hot water capacity ratings at 10-, 20- and 30-F drops. Given also are architect's specifications. 8 pp., illus. Young Radiator Co., Racine, Wis.*

Refrigeration Unit

Contravac Hermetic Centrifugal Refrigeration Unit. (Bulletin DS-399.) Booklet covers design and uses of new refrigeration unit. Separate sections deal with construction features of component parts of system. Parts diagram, mechanical specifications, cycle of operation and details of the purge system are also included. Tables list capacities. Engineering specifications are also given, as well as roughing-in dimensions. 38 pp., illus. The Trane Co., 2nd & Cameron Aves., La Crosse, Wisconsin.*

Sand Finish Wall Coating

Conduro Sand Finish Wall Coating with Polymerized Soy Bean Oil, and Conduro Color Selector. Leaflets explain chemical background of soy bean oil, titanium, mica, asbestos fibre, pentachlorophenol and sand—components of the wall coating. Color Selector contains samples. Company also makes Tuff-Kote for use on stucco, cement, brick, concrete, metal, plaster. 4 pp., illus. Tuff-Kote Co., Woodstock, Ill.

(Continued on page 220)

MODERN DOOR CONTROL BY *LCN* • CLOSERS CONCEALED IN FLOOR

RECREATION CENTER, HIGHLAND PARK, ILLINOIS

LCN CATALOG 11-E ON REQUEST OR SEE SWEET'S • LCN CLOSERS, INC., PRINCETON, ILLINOIS

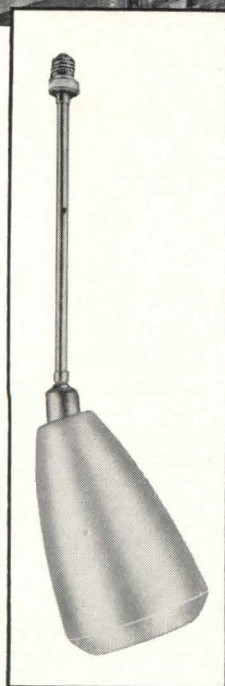
Bertram A. Weber, Architect



5 BIG REASONS WHY AMPLEX SWIVELITES GIVE MOST FOR YOUR MONEY!



Amplex Swivelites in department store jewelry section.



HERE THEY ARE . . . 5 reasons why Amplex Swivelites are your one best buy for accent lighting:

- 1 Smartest modern design;
- 2 Enduring, glossy satin aluminum finish;
- 3 Airflow ventilated hoods reduce burn-outs;
- 4 Double-ball swivel with instant, positive, fingertip control;
- 5 "Adapt-a-Unit" construction; basic units completely interchangeable.

Get the whole Amplex Swivelite story. Just write Amplex Corporation, Dept. D-4, 111 Water Street, Brooklyn 1, New York.

AMPLEX

Sealed-Beam Reflector Lamps, Colorbeam Lamps, Spotlites and Floodlites, Industrial Infra-Red Heat Lamps, Vibration and Rough Service Lamps, Street Lighting Lamps, Traffic Signal Lamps, Incandescent Lamps, Fluorescent Tubes, Display Accessories.

Architectural Engineering

LITERATURE

(Continued from page 218)

Exterior Doors

Angel New Exterior Fir Veneered Doors. Large sheet demonstrates the 25 models of fir plywood paneled exterior doors available in two sizes. All doors have windows, some with single panes of glass, others with two to six lights, arranged in various patterns. 1 p., illus. Angel Novelty Co., Fitchburg, Mass.

Gas Boilers

22, 33 & 44 Series National Gas Boilers. Pamphlet gives data on gas boilers designed primarily for steam and hot water heating systems and also for direct and indirect hot water storage systems. There are six boilers in the "22" series, six in the "33" and nine in the "44". Steam and water boilers are shown in cutaway sections. The component parts of the units are illustrated and described. Automatic controls are discussed, with diagrams and small photographs. Specifications, ratings and engineering data are given for use with all types of gases. A chart lists the dimensions for all types of boilers in each series. 8 pp., illus. The National Radiator Co., Johnstown, Pa.

Surfacing Material

Nevamar. High Pressure Laminates. Brochure discusses properties and uses of a line of surfacing materials laminated under high pressures. Numerous color photographs show laminates made into paneling, counter tops, etc., in offices, kitchens, dinettes, cafeterias, stores. 8 pp., illus. The Nevamar Co., 1224 Wicomico St., Baltimore 30, Md.

Standard Plumbing Fixtures

Carrier Index for America-Standard Fixtures. Designed to help in the preparation of specifications, the pamphlet indexes a line of various types of wall fixture carriers and fittings for use with available wall type plumbing fixtures. Included are sheets on lavatory carriers; closet fittings; closet fittings and carriers; sink, urinal, hospital sink and hospital lavatory carriers. 7 pp., illus. J. A. Zurn Mfg. Co., Plumbing Div., Erie, Pa.*

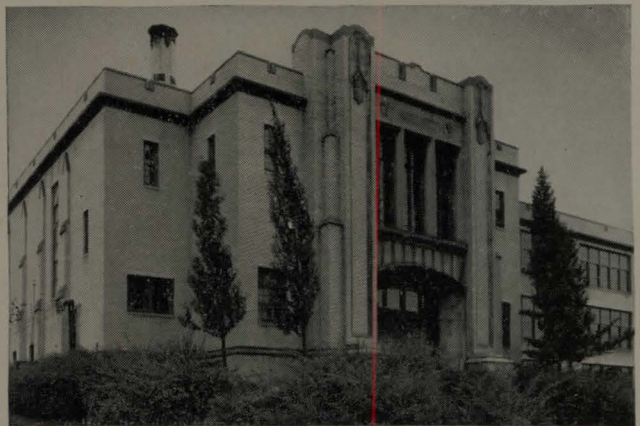
(Continued on page 222)

Dependable Warmth and Comfort

FOR MONONGAHELA HIGH SCHOOL'S
900 STUDENTS

PROVIDED BY

NATIONAL COMMERCIAL STEEL BOILERS



View of the two No. CA-6630 NATIONAL Commercial Steel Boilers with stokers in the Monongahela High School, Monongahela, Pa. Myers & Myers, Monongahela, Pa., Heating Contractors.

Monongahela High School has modernized its heating system by installing two No. CA-6630 National Steel Boilers to furnish heat for its 22 class rooms, auditorium, gymnasium and cafeteria. These National boilers replace two older front smoke outlet type steel boilers.

The new boilers are stoker-fired and furnish 20,000 square feet of radiation distributed throughout the building by cast iron radiators.

During the 1950-51 winter, which turned out to be unusually severe in Western Pennsylvania, these boilers have operated efficiently and satisfactorily, delivering ample heat throughout the school, on a job where the heating system must be reliable day after day.

The school is planning to install another similar boiler in the near future when the proposed Junior High School addition is built—which will add 16 rooms, a domestic science room, machine and woodworking shop and enlarge the auditorium and gymnasium.

NATIONAL Commercial Steel Boilers are designed and engineered especially for large installations where extra heating capacity is a primary consideration. Their durable construction and economical performance meet or exceed all requirements of recognized authorities and codes, including A.S.M.E. and S.B.I. . . . and they carry the "Hartford Mark" of inspection.

OTHER PRODUCTS OF THE COMPLETE NATIONAL LINE



Cast iron National Heat Extractor boilers in sizes ranging in Net I-B-R Ratings from 170 to 10,300 sq. ft. of steam and from 270 to 16,480 sq. ft. of water.

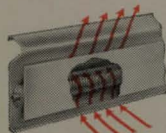


National Steel Boilers in sizes ranging in SBI Net Ratings from 275 to 35,000 sq. ft. of steam and from 440 to 56,000 sq. ft. of water.

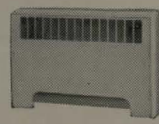


National Gas Boilers ranging in net ratings from 105 to 9,690 sq. ft. of steam and from 195 to 15,505 sq. ft. of water. A.G.A. approved for use with all gases.

The new, all-in-one automatic National Packet Heating Unit for small homes, motels, diners and stores.



National Art Baseboard



National Art & Aero Convectors



National Art Radiators



National Unit Heaters

For further information on NATIONAL Commercial Steel Boilers or other National Products and accessories write for Bulletin No. 507 A.I.A. No. 30-C-1.

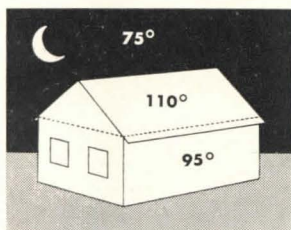


THE NATIONAL RADIATOR COMPANY
JOHNSTOWN, PENNSYLVANIA

Low-Cost Home Cooling

WITH HUNTER ATTIC FANS

HERE'S HOW ATTIC VENTILATION COOLS A HOME

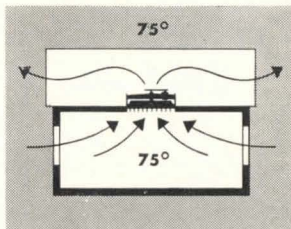


It's cooler outside at night.

All day long a home absorbs heat from the summer sun. At night when outside temperatures have fallen to 75°, for example, the dead hot air in your attic may remain as high as 110°. This keeps the rooms below at an unbearable temperature of up to 95° or more.

Attic fan pulls the cool air inside.

A Hunter Attic Fan pulls the cool fresh outside air into the house, driving out the oven-like heat. In a few minutes after the fan is started, room temperatures drop 10° to 20° lower. An automatic time switch can be used to shut off the fan while occupants sleep.



NEW HUNTER PACKAGE FAN IS INEXPENSIVE AND EASY TO INSTALL IN OLD OR NEW HOMES



A Hunter Package Fan is the most practical and least expensive method of keeping a home comfortable on hot summer nights. This compact unit is easily installed in any new or old home. Furnished complete with fan, motor, suction box and ceiling shutter—with a choice of four sizes, to fit any home.



Cool comfort for a few cents a night.

This efficient attic fan is quiet and powerful, requires little or no maintenance. It costs only a few cents a night to operate and will last for many, many years. Backed by Hunter, exclusive fan makers since 1886. Mail coupon below for complete information on comfort cooling with Hunter Fans.

Hunter PACKAGE Attic Fans

MAIL FOR LITERATURE ON LOW-COST HOME COOLING



Hunter Fan and Ventilating Company
396 South Front St., Memphis 2, Tenn.
Send complete information on Hunter Package Attic Fans to:
Name _____
Street _____
City and State _____

LITERATURE

(Continued from page 220)

Shielded Room Design

Notes on the Design, Construction and Evaluation of Shielded Rooms (PB 100 752). Report, prepared by Naval Research Laboratory, discusses performance standards in the design of shielded rooms for electronic research. Covers use of solid sheet metal for shielding power lines, openings for ventilating ducts and access doors. 20 pp., Illus. Price, 50 cents. Orders should be accompanied by check or money order payable to the Treasurer of the United States. Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.

Company Biography

Difficult Construction. Booklet commemorates 30th Anniversary of the Arthur A. Johnson Corp. Includes data on heavy construction jobs they have done, including: Toronto and Sixth Avenue subways; Van Wyck Expressway bridge; grading the site of the New York World's Fair; foundation and underpinning work for Stuyvesant and Peter Cooper apartment cities; defense projects; utility plants; dams; tunnels; sewers and highways. 36 pp., illus. Arthur A. Johnson Corp., 347 Madison Ave., New York 17, N. Y.

Basement Door

Bilco Opens the Way. Leaflet gives data on packaged, outside basement doors. Diagrams showing minimum and maximum stair runs for various sized doors are included. Tables give dimensions, weights. 4 pp., illus. The Bilco Co., 164 Hallock Ave., New Haven 6, Conn.*

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Newcomb T. Montgomery, Architect, 4114 Timber Lane, Philadelphia 44, Penna.

T. F. Vizgirda, Architectural Designer, 6 De Wolfe Street, Boston 25, Mass.

two sensational new products

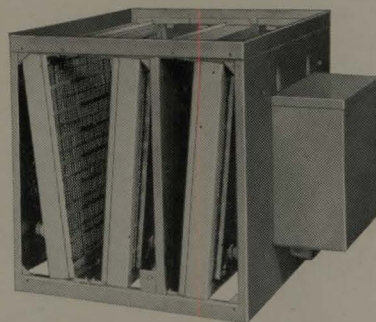
THE MAGNE-FILTER AIR CLEANER



THE MAYFAIR SUMMER AIR CONDITIONER

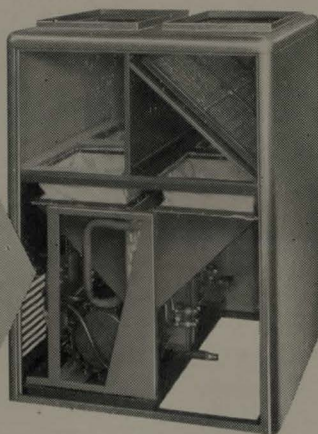
Designed for easy installation in *any* winter or summer air conditioning system, the new Magne-filter Air Cleaner is a dry type electronic air filter that

traps even the smallest dirt particles. Automatically cleaning the air by electrical attraction, the Magne-filter effectively removes pollen, air-borne bacteria, dust, and smoke. The Magne-filter is designed to be installed in the return duct of the air conditioning system, and can be installed on its side in limited space applications.



Here is the newest in summer air conditioning for small and medium homes. The new Mayfair Summer Air Conditioner connects to the duct work of existing forced warm air heating systems. Handily controlled by a switch,

it mechanically cools and dehumidifies the air. And because it has a hermetically sealed, factory-tested cooling system, the Mayfair is as simple in operation as a modern refrigerator! When installed with an American-Standard warm air heating unit, the Mayfair provides year 'round residential air conditioning at its best.



For free literature on these two new products, contact the American-Standard sales office serving you or write to **American Radiator & Standard Sanitary Corporation**, P. O. Box 1226, Pittsburgh 30, Pa.

AMERICAN-Standard

First in heating . . . first in plumbing

Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

POTENTIALITIES OF GLASS IN BUILDING

(Continued from page 166)

7. Pipe insulation of resin-bonded standard or fine-filament fibers formed into half-cylindrical shapes to fit standard pipe sizes.
8. Duct insulation of (a) resin-bonded standard fibers made into slabs finished on both sides to facilitate cutting and to permit finishing with casein or varnish-based paints; and (b) resin-bonded fine-filament fibers made into flexible blankets.

In evaluating any insulation, the heat

capacity of the insulating material must be taken into account because this will affect the rapidity of its response to fluctuating temperature conditions. The greater the mass, the greater the "fly-wheel" effect and the more sluggish the response.

Glass has a specific heat of approximately 0.20 Btu per lb per deg F, which means that a rise of one degree will cause a storage of 0.20 Btu per lb of material. Fibrous glass insulation hav-

ing a density of 6 lb per cu ft will, therefore, store 0.10 Btu per sq ft per in. of thickness per deg temperature rise. It will, conversely, liberate this amount of heat when the temperature drops 1 deg.

Glass fibers are not moisture absorbent beyond the amount of moisture that can be retained by surface wetting, and the wools have low resistance to the passage of vapor. If the dewpoint is reached within the mass of fibers, condensation can occur and it is therefore necessary to interpose a vapor barrier on the warm side of the insulation. The insulation, however, has a high rate of vapor diffusion, and if wetted will rapidly dry out when vented, with no ill effects.

The standard unbonded forms may be used at temperatures ranging from subzero to approximately 1000 F. Bonded types generally cannot be used at temperatures above 600 F because the organic binders deteriorate.

Another glass fiber is fabricated of much finer filaments than the standard forms, providing lighter weight and greater resilience in the insulating blanket than standard types. Because of the organic resin binder, the materials are generally unsuitable at temperatures above 600 F.

Sound Absorption. Sound absorption characteristics are influenced strongly by the frequency of the sound, the method of installation, surface treatment, and many other factors, so sound absorption characteristics can be given only approximately. Table 3 presents figures obtained at Riverbank Laboratories for a resin-bonded slab type of insulation, when tested according to methods prescribed by the Acoustical Materials Association.

Air Filtration. Glass fibers, coated with an adhesive, are random-oriented into packs of sufficient porosity to allow air to pass without undue difficulty, but to provide a sufficiently tortuous path which is said to cause 98 per cent of the allergy-producing pollens and all but the finest dust to be entrapped in the adhesive.

Reinforcing for Plastics

Glass in fibrous forms is being employed in rapidly increasing quantities as reinforcing for various plastics in diverse applications of direct or potential interest in building.

In the building field, the most extensive use so far made of these materials has been as corrugated sheet

(Continued on page 228)

Free to Architects and Engineers



for CIVILIAN and DEFENSE CONSTRUCTION

"Typical Designs of Timber Structures" proved so helpful to architects and engineers during World War II that we have published a special printing as your guide in designing for present Civilian and Defense needs.

This edition features 88 new typical lumber designs based on the National Design Specification published by the National Lumber Manufacturers Association. Designs for light and heavy frame buildings of all types are featured.

While the supply lasts, this 116-page book will be sent FREE to architects and engineers who write us or mail the coupon below.

Timber fabricators in all sections of the country are ready to serve you — and there is plenty of lumber for all needs.

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1319 - 18th St., N. W., Washington 6, D. C.

Please send me FREE copy of "Typical Designs of Timber Structures."

We plan to build a _____

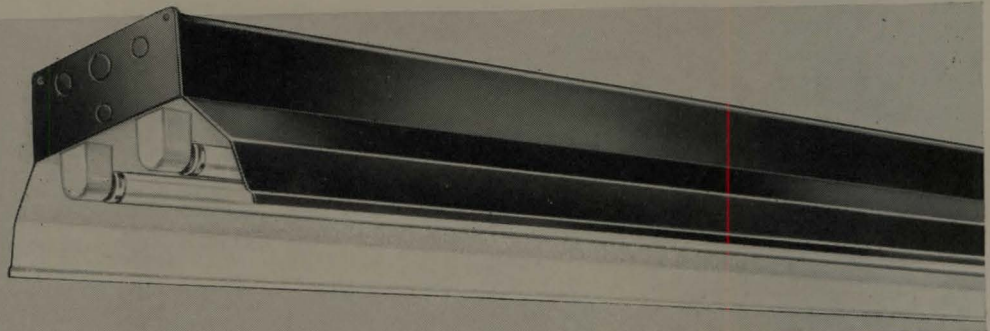
NAME _____

COMPANY _____

STREET _____ CITY _____ STATE _____

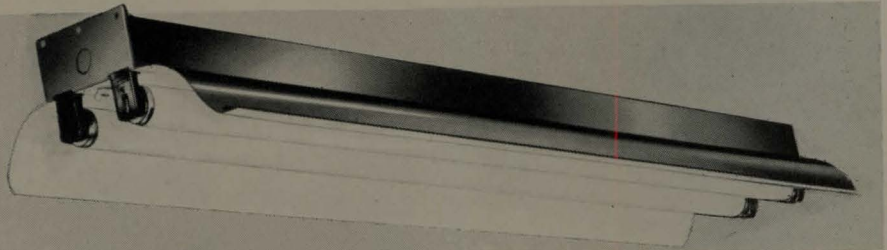
more and more

new! top value! Model No. 2198—latest MITCHELL 8-foot 2-lamp Slimline industrial unit—the low-cost, high-efficiency fixture of a thousand uses. Features: Stroboscopically corrected, Instant-Start, 1-piece 8-foot channel, 2-piece reflector, push-type lampholders . . . U/L approved, union-made and guaranteed.



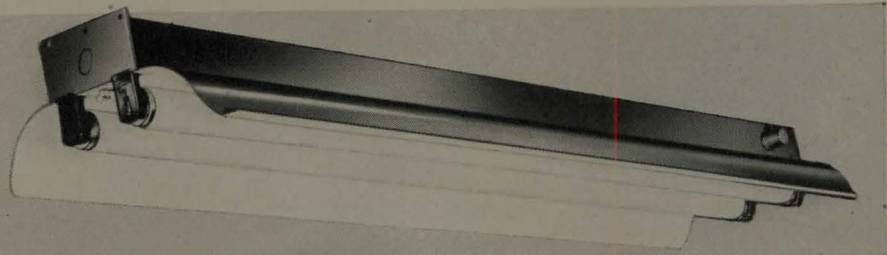
the dollars are in industrial lighting

full size! low cost! Model No. 2099—top value in super-efficient industrial lighting. Uses 2-T-12 40-watt lamps. Features: 13" wide reflector, 5" Hi-Efficiency lamp spacing, heavy all-steel construction . . . U/L approved, union-made. Ideal for low-cost lighting over assembly lines.



more and more

unbeatable buy! Model No. 2098—rugged, dependable 2-40 watt industrial unit designed for smooth, high-intensity lighting in plants and shops. Heavy all-steel construction, easy versatile mounting, advanced-design reflector. Lowest cost quality industrial on the market.



the dollars are in MITCHELL!

You don't have to be an expert to know where the lighting dollars are going today. And the men who know industrial lighting can tell you *from long experience* that the way to make those dollars is to sell the MITCHELL Line. Here's why: 1. You have a *full line* of models to fill *all* industrial needs—and *each* model is a volume seller. 2. You have *quality*—the top lighting efficiency and exclusive operating and maintenance features that have made MITCHELL the preferred name in industrial lighting. 3. You sell a prestige product—E.T.L. and R.L.M. certified—U/L approved—union-made—guaranteed for one full year. 4. You have a selling edge—because MITCHELL quality, geared to big volume production, costs less and sells for less.

Insure your position in the industrial lighting market now—write today for full information on the dollar-making complete MITCHELL Industrial Lighting Line.

Mitchell Manufacturing Company

2525 N. Clybourn Ave., Chicago 14, Illinois
(In Canada: Mitchell Mfg. Co., Ltd., 11-25 Davies Ave., Toronto)

Send full specifications on MITCHELL Industrial Lighting Units.



Name _____

Firm _____

Address _____

City _____ Zone _____ State _____

POTENTIALITIES OF GLASS IN BUILDING

(Continued from page 226)

stock for daylighting and for decorative purposes. Its high impact strength and the ease with which the corrugated material can be incorporated into standard corrugated construction have recommended it for such purposes in a growing number of installations.

An examination of the properties of this plastic should bring to mind many other possibilities.

The plastics employed fall into two principal classes: the thermosetting plas-

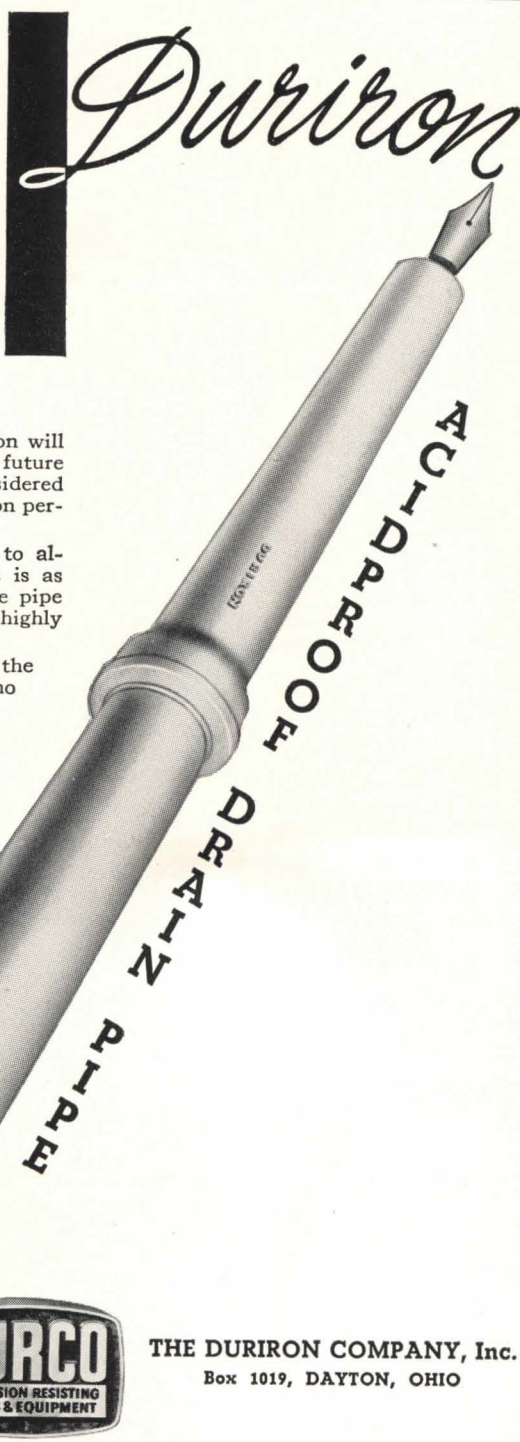
tics which must be molded or laminated at elevated pressures and temperatures; and the polyesters, which require little or no pressure and can be formulated to cure at room temperature. (See ARCHITECTURAL RECORD, March 1950, pp. 132-137.) The polyesters are favored for most applications because they are liquids to begin with and can easily have the glass fibers incorporated into them when formed by relatively simple techniques.

Because of the high strength of the glass fibers and the good mechanical properties including toughness of the polyester resins, the strength properties of the plastic-glass combinations are good. Impact resistance is outstanding. The low specific gravity (approx. 1.5, compared with 2.70 for aluminum and 7.85 for steel) often gives a considerable advantage in strength and rigidity if equal weights of materials must be considered.

Approximate strength values for high-glass content materials are shown in Table 4. Strength properties remain good at sub-zero temperatures but drop off somewhat at elevated temperatures (above atmospheric conditions).

Specific Gravity	1.50
Strength Properties	
Tensile	24,000 psi
Compressive	25,000 psi
Flexural	32,000 psi
Modulus of elasticity (flexure)	1,750,000 psi
Impact (Izod)	25 ft lb per in.
Coefficient of thermal expansion	16 x 10 ⁻⁶ per deg F
Coefficient of thermal transmission	1.5 Btu/hr x sq ft x in. x F

why you're right when you write



When your piping installation will carry corrosives, there is a future replacement item to be considered . . . unless you specify Duriron permanent drain pipe.

With Duriron, resistance to almost all corrosive materials is as great as the thickness of the pipe itself. Further, Duriron is highly resistant to abrasion.

When you consider that the installation cost of Duriron is no greater than that of non-permanent drain line, it just makes sense to specify Duriron, a product of The Duriron Company's 39 years of experience fighting industry's toughest corrosion battles.



THE DURIRON COMPANY, Inc.
Box 1019, DAYTON, OHIO

The material will withstand continuous temperatures at 250 F and intermittent heating to 300 F without serious effect. Resistance to moisture is excellent, and resistance to most acids, to most of the commonly found solvents and to weak and medium strength alkalis is good, depending on the type of polyester resin employed.

There are no longtime records of exposure to atmosphere (the first polyester resins appeared about 1942) but such exposure tests and accelerated weathering tests as are available indicate good resistance of the basic resin and glass fiber although some light discoloration may be expected upon long-continued exposure to sunlight.

Light transmission depends upon the thickness of the material, the proportions of fibrous glass, resin and dyes or pigments employed. Reported values for a sheet approximately 1½ to 2 ounces per sq ft are 79 per cent solar

(Continued on page 232)

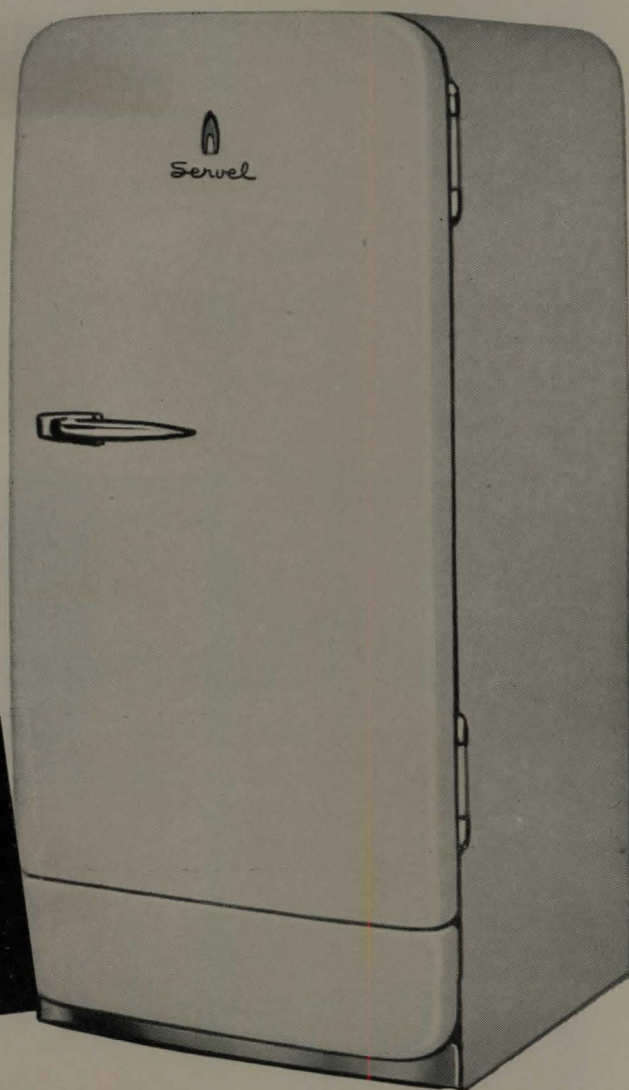
cost important reason for 4000 unit order

NEW JERSEY'S TWO LARGEST, MODERN PROJECTS TO USE SERVELS EXCLUSIVELY

When builder Joseph J. Brunetti ordered 2000 Servels for each of his new Brookchester and Richfield Village developments, it was the largest single refrigerator order ever placed in New Jersey.

Servel was chosen for many reasons. Its year-in, year-out dependability . . . handsome design . . . famous silence—and particularly because of its remarkably low maintenance cost. This rock-bottom cost of upkeep has been proved time and time again in multiple-housing projects all over the country. It is the result of Servel's *basically different* principle of operation . . . its motorless freezing system. Just a tiny gas flame does all the work. There are no moving parts to wear, grow noisy, require replacement. That's why *only Servel stays silent, lasts longer* . . . provides year after year of matchless efficiency and worry-free service.

For full details consult Sweet's catalogue or write to Servel, Inc., Dept. B-13, Evansville 20, Ind.



Servel
The GAS Refrigerator

**POTENTIALITIES
OF GLASS
IN BUILDING**

(Continued from page 228)

transmission for uncolored sheet, 60 to 63 per cent for yellow, 53 to 56 per cent for blue, and values as low as 30 per cent for some greens.

Reports of fire tests on the same sheet stock indicate that discoloration by flame may be expected at about 600 F, blistering at about 800 F and ignition of the plastic at about 850 F. The fibrous glass itself should withstand temperatures of 1000 F.

Forming technique employed depends upon the size and shape of the part, and upon the number of pieces to be produced. The various methods may be grouped into three principal types.

In the first, a simple mold of wood, sheet metal, concrete or other convenient material is built to the outside or inside contour of the object. After treatment to prevent sticking, successive coats of plastic resin, usually applied by brush or sprayer, and tailored glass mat or glass fabric are laid upon the mold to the desired thickness, after which the resin is allowed to cure either at room or elevated temperatures.

The principal advantages of the foregoing method are the simplicity of the mold and the flexibility of the process, permitting large and fairly complex shapes to be made with a minimum of equipment.

The second forming method is illustrated in the sketch on page 164. This method avoids the stickiness of the first method, time is said to be shorter and both surfaces of the part are smoothly finished against the mold, requiring little subsequent finishing.

If parts are small enough and if enough are to be made, matching metal molds in a molding press plus preformed glass mats are employed to provide faster molding cycles and to require less labor than either of the foregoing methods.

It would be possible for the architect to experiment with these plastics in making decorative objects, skylights and the like, but in general, the molding requires experienced labor because of the stickiness of the material and the tendency for the resin to run down sloping surfaces.

A *nnouncement!!*

**Guth is coming out with
a new line of fixtures
for Industrial applications:**

LIGHTING FOR PRODUCTION

something really new and different!



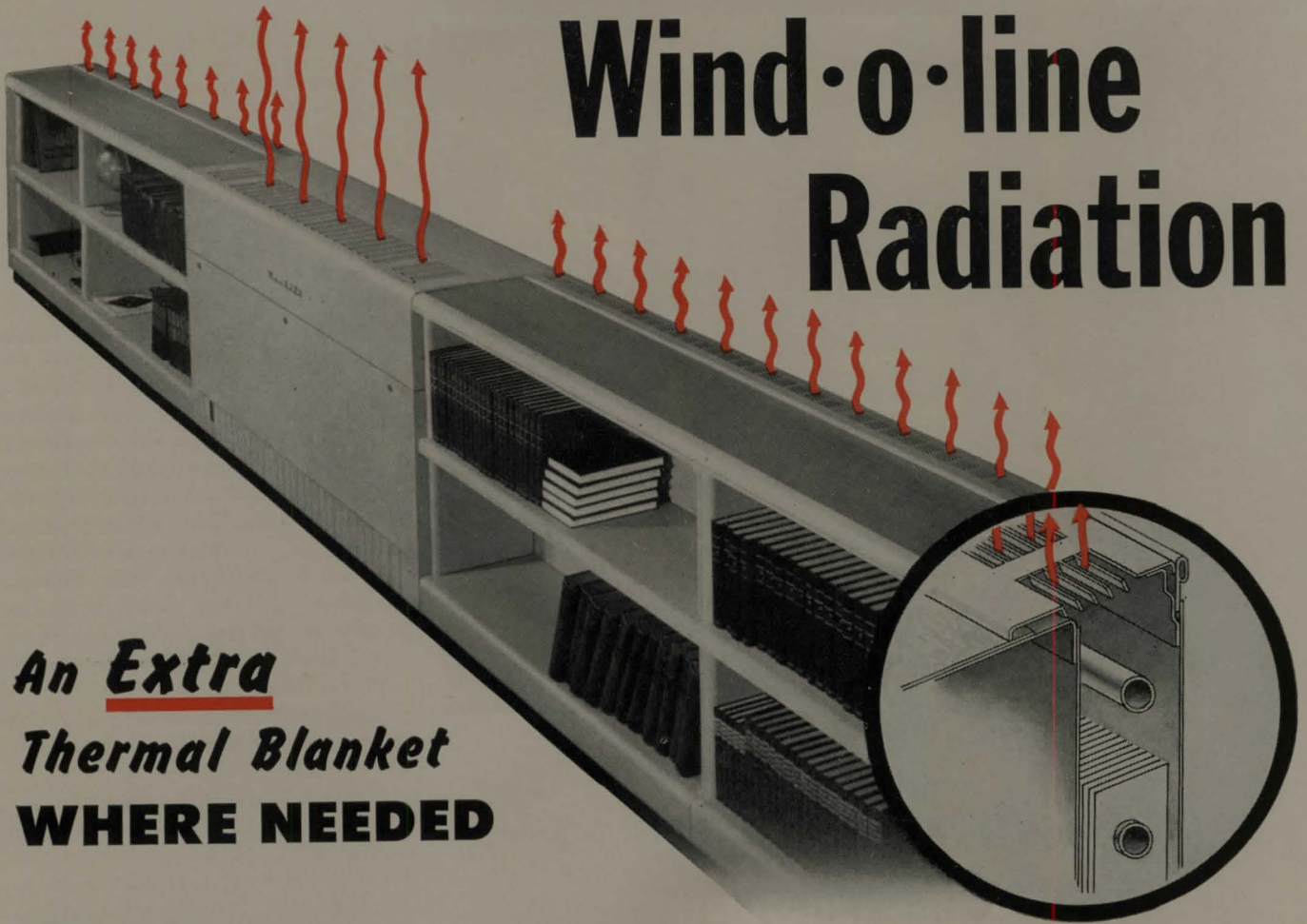
Guth
LIGHTING

**WAIT FOR DETAILS NEXT MONTH
HOLD YOUR ORDERS**

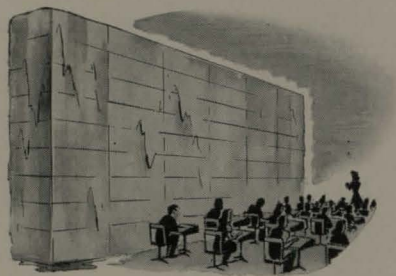
THE EDWIN F. GUTH COMPANY • ST. LOUIS 3, MISSOURI

Leaders in Lighting Since 1902

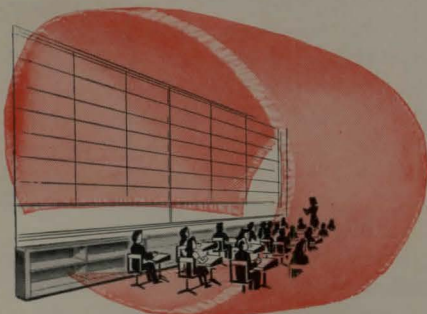
Wind·o·line Radiation



**An Extra
Thermal Blanket
WHERE NEEDED**



In sub-freezing weather, window areas become like a "wall-of-ice".



The Nesbitt Thermal Blanket protects occupants from cold windows.

Answers the WALL-OF-ICE Problem

THE TREND toward larger areas of fenestration in the modern schoolroom makes greater demands of the heating and ventilating unit. The "thermal blanket" provided by the Nesbitt Syncretizer adequately shields occupants against the window "wall-of-ice" in normal situations; but under conditions of extremely long glass exposure and very low outdoor temperatures, an "extra blanket" is called for. Nesbitt WIND·O·LINE meets such needs.

When specified as an auxiliary of the free-standing Nesbitt Syncretizer, WIND·O·LINE consists of finned-tube radiation in an attractive grilled casing. It is located just below the windows and extends from both ends of the Syncretizer unit ventilator, for the full length of the sill. It is controlled in cycle with the Syncretizer to give heat—when required—where heat is needed.

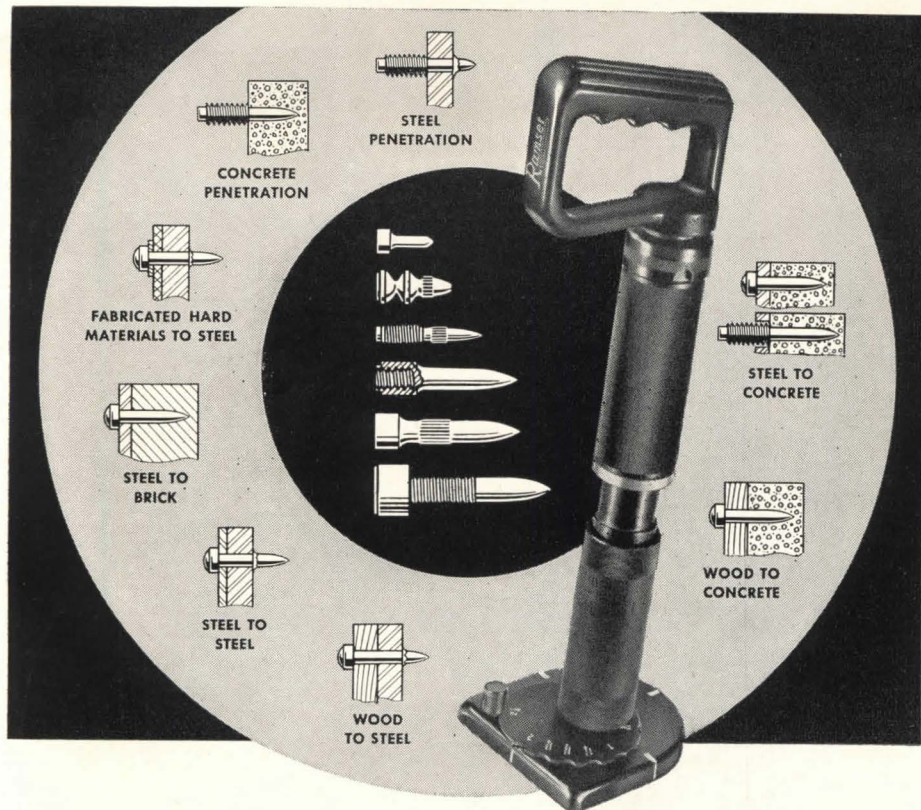
WIND·O·LINE is also available (pictured above) as a component of The Nesbitt Package, recessed in a channel at the rear of the storage units. WIND·O·LINE is yet another Nesbitt innovation which permits more of America's schools to enjoy the *new standard of classroom comfort*.

The Nesbitt Syncretizer Unit Ventilator

MADE AND SOLD BY JOHN J. NESBITT, INC., PHILADELPHIA 36, PA. • SOLD ALSO BY AMERICAN BLOWER CORPORATION

WASHINGTON

(Continued from page 24)



Ramset proves wide versatility in hospital construction

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struction of their projects under the new liberalized financing terms.

In the case of sales housing for which relaxed credit terms are permitted, no applications will be required of builders. Instead, eligible defense workers will be given certificates of approval by the AEC, and any certificate holder will be authorized to purchase his home under the liberalized financial terms. Builders may enter into sales contracts with certificate holders prior to construction or, if they wish, build the homes first and then seek as buyers, at the relaxed credit terms, holders of AEC certificates.

These moves, then, set the pattern for future building operations throughout the country.

The Aiken and Paducah areas actually were designated as defense areas for the purpose of stimulating housing construction through relaxation of the credit control. They were the first regions of the country to be so pinpointed. Future determinations were to be made, under the new defense housing measure, by the President, on the basis of mobilization information.

Meanwhile, home builders complained that failure to act sooner was drying up land development activities. Frank Cortright, executive vice-president of the National Association of Home Builders, put it this way:

"An elaborate formula has been suggested, including a study of the housing supply, percentages of vacancies, the availability of manpower, etc., etc. In the meantime, builders are not acquiring and developing land as generally as they should, and invaluable time and building facilities are being dissipated. Unless the Administration moves promptly, the pre-Regulation X momentum will slow down in a few months and urgently required housing will not be available where and when needed."

Housing Bills Opposed

Progress of the housing bills through Congressional committees was nudged along by a letter from Chief Mobilizer Charles E. Wilson to chairmen of the Banking committees. At the same time

(Continued on page 236)



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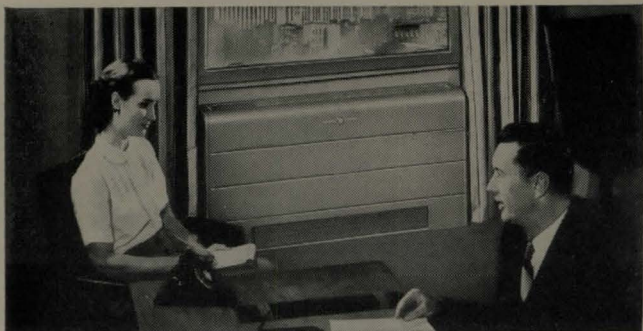
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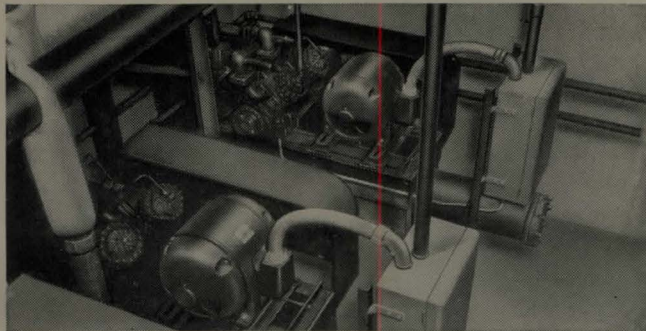
proved G-E Systems feature unparalleled flexibility.

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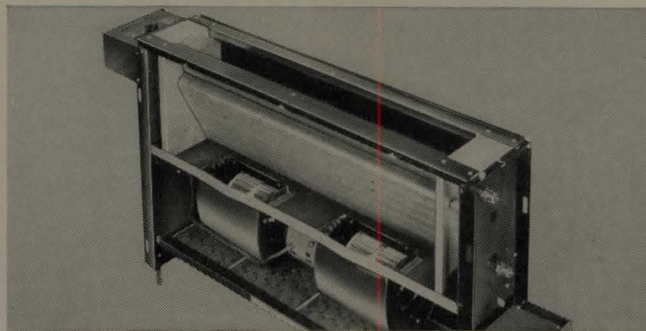
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some industry and business interests were pulling the other way, trying to stop the bill altogether.

This latter pressure was exemplified in the U. S. Chamber of Commerce statement asking Congress to lay aside the plan for what it called government stimulation of defense housing, including government construction. Federal controls already are reducing the output of private construction approximately

50 per cent, the Chamber said, and industry is ready and willing to build all the defense housing needed as fast as it is needed. "It should be given the opportunity to do so before the setting up of an elaborate set of federal subsidies and planning agencies," the Chamber asserted.

But Mr. Wilson's letter inevitably carried more weight with the committee groups. In it he stressed the need for

quick action to avoid embarrassment to the mobilization effort; and to avoid forced decisions and hasty actions at a later date. At any rate, the House Banking Committee reported out its chairman's clean bill early in March, and the Rules Committee took it up the day after.

One part of the Wilson letter was particularly significant and undoubtedly conveyed a strong impression of the emergency nature of the proposed legislation to the committees. It said:

"The seriousness of the situation with which we are presently confronted, and which has made necessary the undertaking of a mobilization program of the character now contemplated, cannot be overemphasized. It is our purpose to carry out this program to the maximum extent practicable through the use of existing facilities, but acute shortages of housing and community facilities for the men required to man the production lines are already developing in some areas.

"Where new facilities are being built or existing facilities are being expanded the shortage of housing accommodations and community facilities for the manpower flowing into these areas raises a problem of magnitude and importance the solution of which should not, in my opinion, be postponed. Our previous experience is evidence of the fact that if the required housing and community facilities are not available in the places and at the times they are needed, our production program can suffer serious and crippling delays."

Rental Housing Emphasized

As summarized for the Congressional Record, H. R. 2988, the new Spence measure reported out by the committee provides that housing and community facilities are to be made available as needed through planning and programming concurrent with defense activity planning. Primary emphasis is on rental housing for defense workers. Private enterprise is to be encouraged through relaxing credit restrictions (Regulation X) to provide as much of the defense housing as possible. Government-constructed housing is to be provided only if local agencies cannot, or will not, do so with the financial assistance made available under the bill. Federal agencies will cooperate with state and local agencies to integrate programs and operations.

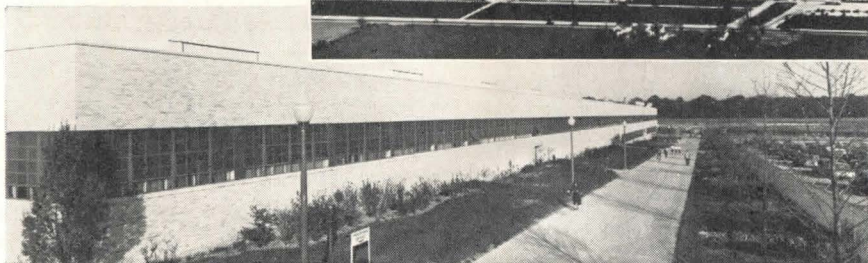
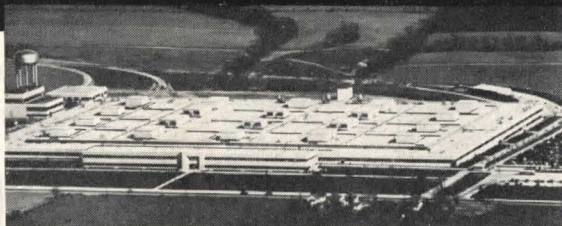
One of the most important features of the new legislation for architects and

(Continued on page 240)

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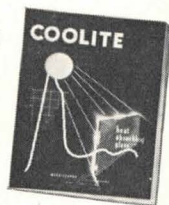
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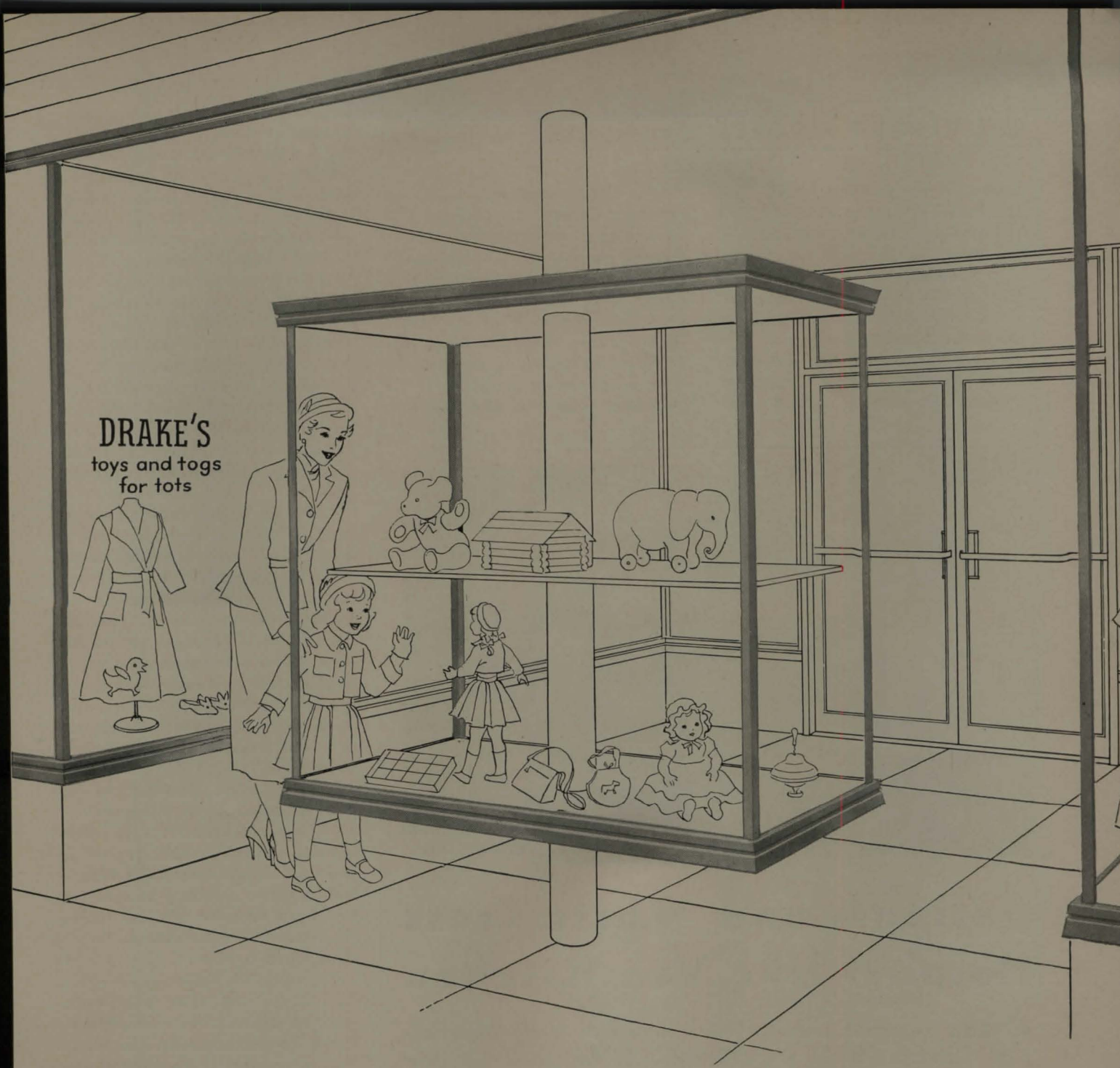
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builders is the provision for an additional \$3 billion authorization for Federal Housing Administration mortgage insurance.

In working out the final draft of its bill just a month ago, the Committee attempted to compromise sharp agency differences on administration of programs by leaving final determination up to the President. During the lengthy hearings that preceded approval of the

defense housing measure, a sizable tiff developed between the Housing and Home Finance Agency and the Federal Security Agency over administrative designations in the proposed legislation. HHFA spokesmen pointed out to Congress that they already had the Bureau of Community Facilities, which was familiar with details of community facility construction. The FSA, on the other hand, argued that with its present

hospital construction program under the U. S. Public Health Service, and with its Office of Education supervision of schools, it should be handed responsibility for community facilities planning and construction in connection with the suggested loan and grant program.

If Congress eventually approves the recent House committee action, the President's office will have to make the final decisions on who gets what in the way of planning and construction.

The only committee concession to a request by the American Institute of Architects that planning provisions of the measure be strengthened apparently was this provision in the statement of policy:

"... Any department or agency performing functions hereunder shall, in carrying out such functions, consult with the appropriate state and local agencies having responsibilities in connection with the planning, provision, construction, or operation of community facilities or services so that, insofar as practicable, community facilities and services assisted or provided pursuant to this Act may be integrated with state and local programs for such facilities and services."

Ralph Walker, president of the A. I. A., had called for definite requirements to be written into the bill providing that all work should carry definite plans for all the community facilities and amenities necessary to encourage low labor turnover. Federal moneys should not be used to encourage slovenly shack towns, he asserted.

The sum of \$10 million as a revolving fund for the community facilities construction program was retained in the House committee version. Mr. Walker had advised that this amount "would seem far from adequate" for the purpose it was intended to fulfill.

Civil Defense Funds Sought

Of the several recent developments on the civil defense front perhaps the most important is President Truman's request for \$403 million in appropriations to get the program moving. Since last November 1 there has been a semblance of civil defense planning. But the \$1,210,000 from an emergency national defense fund with which this has been carried on has allowed only for some preliminary studies, not for a concerted attack on the immediate problems of preparation for home defense.

(Continued on page 242)



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THE RECORD REPORTS

WASHINGTON (Cont. from p. 240)

So, early in March, Congress had before it the White House request for \$250 million (part of the \$403 million appropriation asking) to be used specifically in the civil defense program for protective facilities.

Significantly, the statement from the White House, issued at the time the President's request for new funds went to Congress, made no mention of bomb shelter construction specifically. It said

the quarter of a billion dollars was sought in supplementary fiscal 1951 appropriations as a protective facilities fund which would enable the Federal Civil Defense Administration to begin its broad program of helping the states to help themselves in preparing against bomb attack.

As the White House stated it, the new provision of funds would "enable the Administration to get started on a

program of matching state funds for the modification of existing structures for the protection of the civilian population in critical target areas."

These additional funds, said the President, are urgently needed in the fiscal year 1951 (ending June 30) so that the Administration can get organized to fulfill its obligations and so that the policy and intent of the federal government can be indicated to the states and they in turn can get a program underway as soon as possible.

Building May Get \$500 Million

The amounts recommended are to be made available until June 30, 1952, however, because of the short time remaining in the current fiscal year. It is recognized that some states will not have matching funds available until after mid-year. Also taken into account was the probability of delays that might occur in obtaining procurement priorities for some critical items. Part of the \$403 million asked — \$25 million — is for the FCDA procurement fund. The procurement fund is a loan fund from which the states' share of organizational equipment and supplies would be financed pending approval of state plans and the availability of state moneys from which reimbursement will be made to this fund.

Should Congress provide the full \$250 million now requested for the protective facilities program, and all of it is allocated on a matching basis, it would account for roughly \$500 million worth of construction activity, mainly of the alteration type.

This protective facilities approach is conceived by authorities as the quickest way of providing protection to the largest number of people. Existing structures can be "proofed" to provide a good measure of safety against enemy attack in a much shorter time than entire new shelters — particularly extensive underground areas — could be constructed. This, however, does not rule out the bomb shelter building, which definitely remains the larger share of the over-all defense plan, constructionwise.

The alteration and remodeling of existing buildings to make them suitable locations of refuge in time of bomb attack could take several forms. Communities might decide to strengthen the roof on a school building, or on the city hall. Much of the effort probably would go into the remodeling of basements to

(Continued on page 244)



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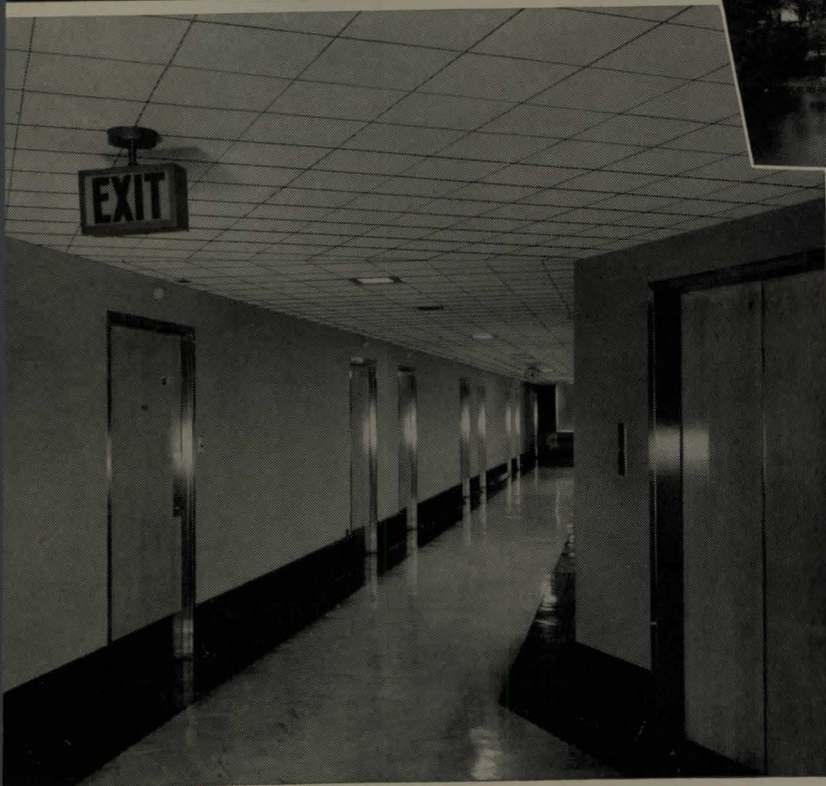
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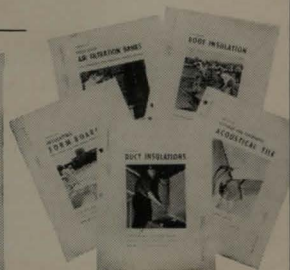
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make them better protective areas. The reinforcement of building walls should develop as an important part of the protective facilities program.

The \$250 million request can be considered as only the start of a more comprehensive protection program to be carried out by the FCDA. Congress has authorized total outlays of \$3.1 billion in a federal civil defense bill. Eventually, better than half this amount is ex-

pected to go toward matching state funds for the bomb shelter construction program.

Precast Concrete vs. A-Blast

Meanwhile, speaking in San Francisco, Arsham Amirikian, head design engineer, Bureau of Yards and Docks, Department of the Navy, recommended precast concrete as a good type of construction for protection against atomic

bomb blast. Precasting could serve well for the building of emergency shelters; and in the protection of existing buildings this type of construction could provide a valuable outer shell defense. Readily-assembled framing elements, Mr. Amirikian said, could be prefabricated at regional plants and stockpiled at strategic points for immediate use in emergency.

Mr. Amirikian offered the thin-shell precast concrete technique as one solution to the shelter problem. Such shelters could be used either as an initial shield against atomic blast and radiation, or as emergency shelters after the attack.

"Standardized designs of framing and methods and procedures of fabrication will unquestionably simplify the task of construction," he observed. Precast structures can be designed to assure a reasonable degree of safety to occupants against effects of a bomb exploded 2000 feet overhead. These circumstances are similar to those at Hiroshima and Nagasaki. The Navy engineer proposes different types of protective structures for areas in a 3/4-mile radius surrounding the target; an area of 3/4-mile to one mile; and an area located outside the one-mile radius limit.

The increased attention to civil defense and the more important role for architects and contractors focuses attention on many new problems developing as the federal government moves ahead with its several programs in this field. Some home building shows are displaying model backyard shelter types.

At Boston the thirty-second annual convention of the Associated General Contractors of America recommended that general contractors throughout the nation offer their services to civil defense authorities in planning most effective use of construction organizations in the civil defense program. It also recommended that authorities make use of construction organizations and their personnel and equipment so that no unnecessary public expenditures are made for purchases of machinery or the establishment of unnecessary organizations for civil defense purposes.

Shorts

- Veterans Administration announced that any eligible veteran who, before October 12, 1950, had acquired a building lot with the intention of building his

(Continued on page 248)



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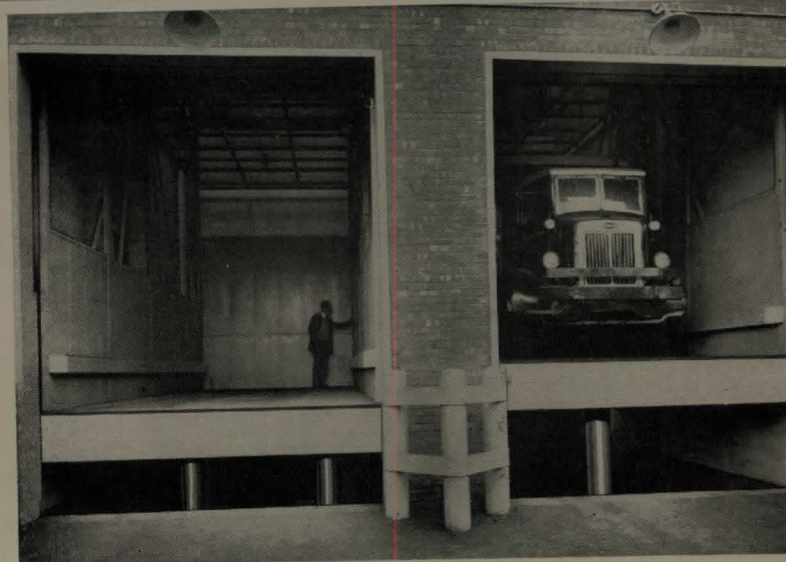
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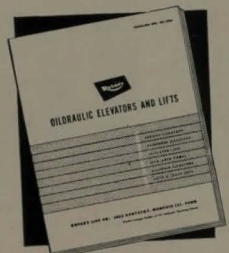
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THE RECORD REPORTS

own home, would be exempted from the credit restrictions (Regulation X) imposed on that date for GI loan purposes. He must meet three requirements, however: (1) The lot must have been acquired, or a purchase contract executed, prior to October 12, 1950. (2) There must be evidence that, as of the above date, he actually intended to build the home. Hiring of an architect to draft plans, negotiations with a contractor to

WASHINGTON (Cont. from p. 244)

build, and similar evidence is acceptable. (3) He must certify that imposition of the restrictions would work a hardship upon him.

• The House Small Business Committee continued to criticize contract award policies of the military and other government agencies. A staff report also was critical of the Army Engineers for no

longer making available summaries of major construction projects. The committee itself said it favored withholding of information where real security is involved, but added "there is little justification for refusal of information on most unclassified contracts."

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TALBOT HAMLIN SEEKING DATA FOR LATROBE WORK

Material on Benjamin Henry Latrobe (1764-1820), architect and engineer who lived in the United States from 1796 till his death, is sought by Talbot Hamlin for a biography he is preparing.

The extensive material in the Library of Congress, the Maryland Historical Society, the Pennsylvania Historical Society and the archives of the Diocese of Baltimore are known to Mr. Hamlin; but he would be grateful to hear from anyone who may have other material by or about Latrobe.

Mr. Hamlin promises acknowledgement of all correspondence and return of any material sent him.

ON THE CALENDAR

Current throughout 1951: 1951 Good Design, second in the series of well-designed home furnishings exhibitions, sponsored by the Museum of Modern Art and The Merchandise Mart — The Merchandise Mart, Chicago.

Current through June 3: Exhibition of prizewinning designs from Lamp Competition — Museum of Modern Art, 11 W. 53rd St., New York City.

Apr. 2-30: Architectural Exhibition — The Art Alliance, 251 S. 18th St., Philadelphia.

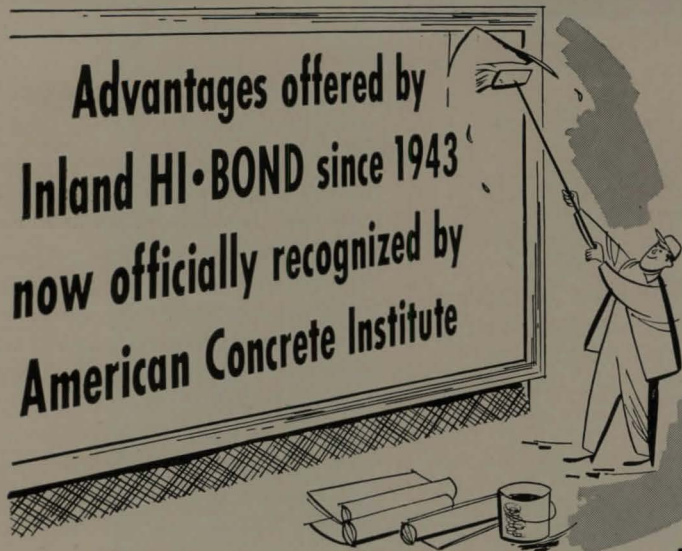
Apr. 9-27: Gold Medal Landscape Architecture Exhibition; *Apr. 30-May 25:* Gold Medal Mural Painting Exhibition — The Architectural League, 115 E. 40th St., New York 16, N. Y.

Apr. 11-13: Southern District meeting, American Institute of Electrical Engineers — Miami Beach, Fla.

Apr. 11-15: Annual meeting, American Planning and Civic Association — McAllister Hotel, Miami, Fla.

(Continued on page 250)

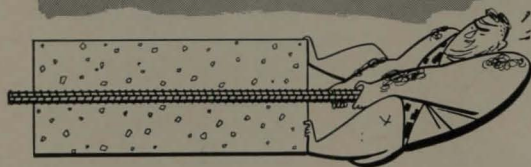
Advantages offered by
Inland HI-BOND since 1943
now officially recognized by
American Concrete Institute



At the annual convention of the American Concrete Institute in 1949, Committee 208 on Bond Stress proposed changes in design stresses for concrete reinforcing bars. These proposals were made after Bureau of Standards tests proved that certain "improved" reinforcing bars could live up to higher standards.

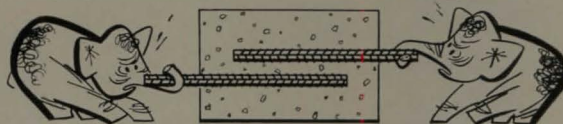
At the 1950 convention, the ACI Building Codes Committee adopted the proposals of Committee 208. And in February 1951, the Institute officially accepted the new building code change.

It is interesting to note that Inland HI-BOND has, for eight years, offered all advantages of higher bonding properties now officially recognized by ACI.



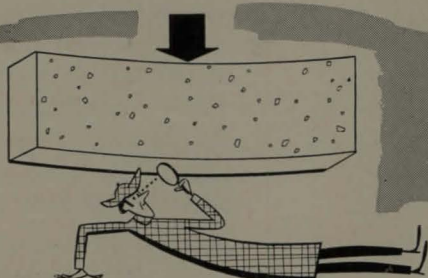
1 Increased bond stresses and greater resistance to slip

See reports on National Bureau of Standards research by Arthur Clark . . . ACI Proceedings, Vol. 43, p. 381; Vol. 44, p. 437; Vol. 46, p. 161; by C. C. Fishburn . . . ACI Proceedings, Vol. 44, p. 289.



2 Increased efficiency at splices

See reports on National Bureau of Standards research by Ralph W. Kulge and E. C. Tuma . . . ACI Proceedings, Vol. 42, p. 13.



3 Reduced width of tensile cracks

See reports on National Bureau of Standards research by David Watstein and Norman Seese, Jr. . . . ACI Proceedings, Vol. 41, p. 293.



4 Hook anchorages unnecessary in most applications

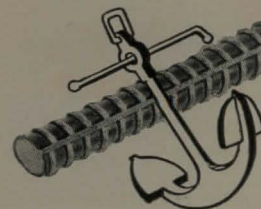
See reports on National Bureau of Standards research by C. C. Fishburn . . . ACI Proceedings, Vol. 44, p. 289; by F. E. Richart . . . ACI Proceedings, Vol. 45, pp. 97 and 237.

See new ACI Building Code



HI-BOND[®]

The reinforcing bar with
the built-in anchorage



INLAND STEEL COMPANY 38 S. Dearborn St., Chicago 3, Illinois

(Continued from page 248)

Apr. 15-19: Sixth Annual Conference, Association of State Planning and Development Agencies — Sherry-Frontenac Hotel, Miami Beach, Fla.

Apr. 17-18: Illinois Structural Engineering Conference, sponsored by Department of Civil Engineering and Division of Extension Services — University of Illinois, Urbana, Ill.

Apr. 24-26: Annual Meeting, Ameri-

can Wood-Preservers' Association — Stevens Hotel, Chicago.

Apr. 30-May 2: 20th Anniversary Conference, American Institute of Decorators — Hotel Pantlind, Grand Rapids, Mich.

Apr. 30-May 4: National Materials Handling Exposition and Conference, American Materials Handling Society — International Amphitheater, Chicago.

May 1-4: American Institute of Decorators Trade Exhibition, in conjunction with 20th anniversary conference — Grand Rapids Civic Auditorium, Grand Rapids, Mich.

May 2-4: Northeastern District Meeting, American Institute of Electrical Engineers — Syracuse, N. Y.

May 3-Sept. 30: Festival of Britain, including architectural exposition on main exposition grounds, south bank of Thames, London — London and throughout British Isles.

May 7-11: Annual Meeting and International Industry Show, Forest Products Research Society — Convention Hall, Philadelphia.

May 8-11: 83rd Annual Convention, the American Institute of Architects — Edgewater Beach Hotel, Chicago.

May 11: Symposium on architectural acoustics at meeting of Acoustical Society of America; sponsored jointly by Society and the American Institute of Architects — Washington, D. C.

May 17-19: Great Lakes District meeting, American Institute of Electrical Engineers — Madison, Wis.

May 20-24: Annual Convention, National Association of Building Owners and Managers — Rice Hotel, Houston, Tex.

May 28-June 4: 1951 Canadian International Trade Fair — Exhibition Grounds, Toronto.

May 30-June 2: British Architects Conference — Belfast, Ireland.

May 30-Sept. 9: World Transportation Fair — Santa Anita Park, Calif.

June 18-22: Annual Meeting, American Society for Testing Materials — Chalfonte-Haddon Hall, Atlantic City.

June 21-23: Second Annual Convention, New Jersey Chapter, American Institute of Architects, and New Jersey Society of Architects — Berkeley-Carteret Hotel, Asbury Park, N. J.

June 25-29: Summer General Meeting, American Institute of Electrical Engineers — Royal York Hotel, Toronto.

July 1-Sept. 1: Fountainebleau Schools of Fine Arts and Music. Details available from: Fountainebleau Association, 122 E. 58th St., New York, N. Y.

July 21-Aug. 4: Oxford Summer School on Architectural History and Measured Drawing, held in connection with the Festival of Britain. Details available from J. Brosgall, Shire Hall, Reading, England.

(Continued on page 252)

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Tough Surfaced

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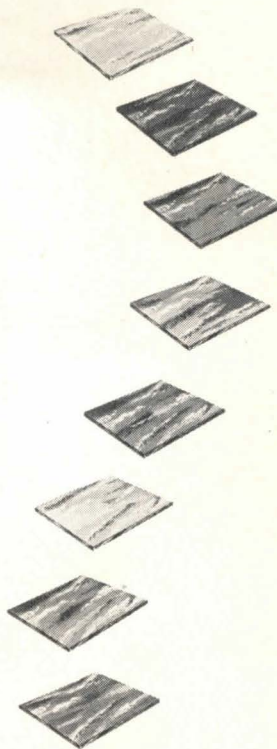
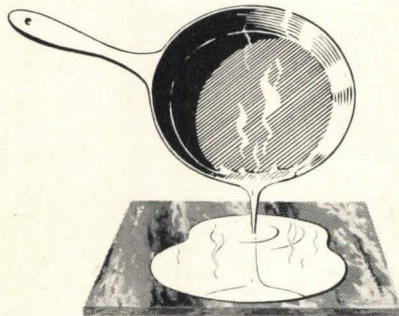
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OFFICE NOTES

Offices Opened

• Ben H. Dyer, A.I.A., has opened a new office for architectural specifications at 8605 Garfield St., Bethesda, Md. The new office will prepare specifications for architects on a professional basis and will consult with manufacturers and trade associations concerning prepara-

tion of published specifications and technical data for products they manufacture. Mr. Dyer was formerly an associate member of the firm of Faulkner, Kingsbury and Stenhouse, Architects, and is author of specification work sheets published by the American Institute of Architects.

• J. M. Huddleston has announced the opening of his office for the practice of

architecture at 1550 Elizabeth St., Shreveport, La.

New Firms, Firm Changes

• Harrison, Ballard & Allen have announced the retirement of Allan L. Harrison from active participation in the firm, which will continue under the same name at its present location, 123 E. 77th St., New York 21, N. Y. The firm has also announced that James H. Hansen has joined the firm as construction engineer. Mr. Hansen was formerly assistant director, Conservation Division, War Production Board, and managing engineer, Brick Manufacturers' Association, New York.

• Walter Scott Roberts and Clifton J. Marshall have announced the formation of an association for the general practice of architecture to be known as Roberts and Marshall, Associated Architects. The new firm will have offices at 115 E. Fourth St., Owensboro, Ky.

ELECTIONS APPOINTMENTS

• John Leon Rex of Los Angeles has been elected president of the California Council of Architects, the central organization of the nine chapters of the American Institute of Architects in the state. Other new officers are: William Koblik, Sacramento — vice president; Maurice Metz, Fresno — secretary-treasurer. Mr. Rex succeeds Frank V. Mayo of Stockton.

• John Alfred Wahl, A.I.A., has joined Starrett and Van Vleck and Reginald E. Marsh, associate architects on the Triborough Houses, a 1900-unit low rent housing project for the New York City Housing Authority, as project manager. Mr. Wahl was formerly office manager for Kelly & Gruzen, architects and engineers, of New York.

• George M. Hunt, director of the U. S. Forest Products Laboratory at Madison, Wis., since March 1, 1946, has been succeeded by Dr. J. Alfred Hall, whose appointment was effective April 1. Mr. Hunt retired March 31 after 40 years in federal service. Doctor Hall has been director of the Pacific Northwest Forest and Range Experiment Station of the Forest Service in Portland, Ore.

(Continued on page 256)

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DARKEN CLASSROOMS WITH
CONVENIENT, ECONOMICAL...

Pella
LITE-PROOF SHADES

Part of the 36 Pella LITE-PROOF SHADES installed in Willamette High School, Eugene, Oregon

These newly designed Pella LITE-PROOF SHADES provide quick, efficient darkening of windows with a minimum of effort. Side guides hold shade material in place and seal out light. Black shade material is fire-resistant treated and Vinyl-resin coated. When not in use, Pella LITE-PROOF SHADES roll up onto a spring actuated, ball-bearing roller enclosed in a neat metal housing.

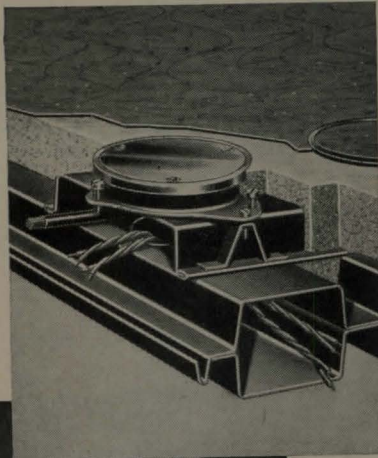
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Electrical Systems



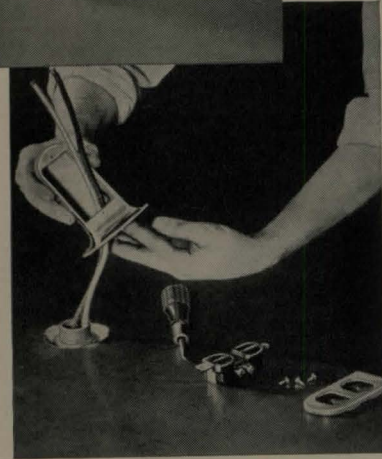
SPEED WIRING

and rewiring with a G-E Q-Floor wiring system. Header ducts, laid at right angles across all cells, provide ample distribution from load centers. Handholes, finished with the floor covering, are located over the particular cells they feed. Here's the system that gives building operators the opportunity for full and flexible use of electrical equipment.



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You can put your confidence in—
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THE RECORD REPORTS

(Continued from page 252)

• Sir Gerald Kelly, president of the Royal Academy of London, and Sir Giles Gilbert Scott, a past president of the Royal Institute of British Architects, have been made honorary corresponding members of the National Academy of Design.

• Erik Nitsche has been appointed by the Museum of Modern Art, New York

City, as a consultant for a study of design as applied to its own institutional needs. Mr. Nitsche will make a survey of the Museum's bulletin boards, announcements, posters, etc., in its public places, with a view to bringing these displays fully in line with the architecture of the building. He will also correlate the Museum's letterheads, circulars and other printed material in layout and typography.

Mr. Nitsche, who won the Art Director's Gold Medal in 1949, has done covers and illustrations for many magazines and is also known for his posters, book illustrations and package displays. He did the designs and posters for the 20th Century Fox films "All About Eve," "No Way Out" and "Of Men and Music."

• Carl N. Lohrey has been named general manager of the Dayton branch of the Lieb-Jackson Company, mechanical engineers, of Dayton and Columbus, Ohio. The Dayton office is at 743 Valley St., Dayton 4, Ohio.

• The appointment of Malcolm T. McEachern, M.D., as director of professional relations of the American Hospital Association was announced at the Association's midyear conference. Doctor McEachern, who recently retired as director of the American College of Surgeons, assumed his new post March 1. He guided the hospital standardization program of the American College of Surgeons for more than 25 years.

• Paul W. Beck has been appointed librarian in the division of public and technical information of the Idaho Operations Office, U. S. Atomic Energy Commission.

• Fred J. Driscoll has been elected president of the Building Trades Employers' Association of New York City. He succeeds Hugh M. Hughes, who served for two years. Other officers named at the Association's annual meeting are: Harry J. Stellmann, first vice president; Eugene Duklauer, second vice president; Perry S. Dewey, third vice president; and J. George Costello, treasurer.

AT THE COLLEGES

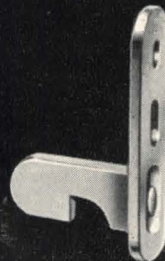
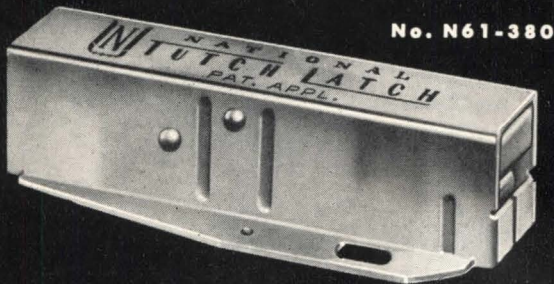
Awards

• Richard E. Baringer of Elkhart, Ind., a student in the Harvard University Graduate School of Design, has been awarded a fellowship in architecture by the American Academy in Rome. The total value of the award is approximately \$3000, including stipend, travel allowances and free residence at the Academy.

The award to Mr. Baringer was one of ten Rome Prize Fellowships which were announced last month by James

(Continued on page 258)

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AUTOMATICALLY...
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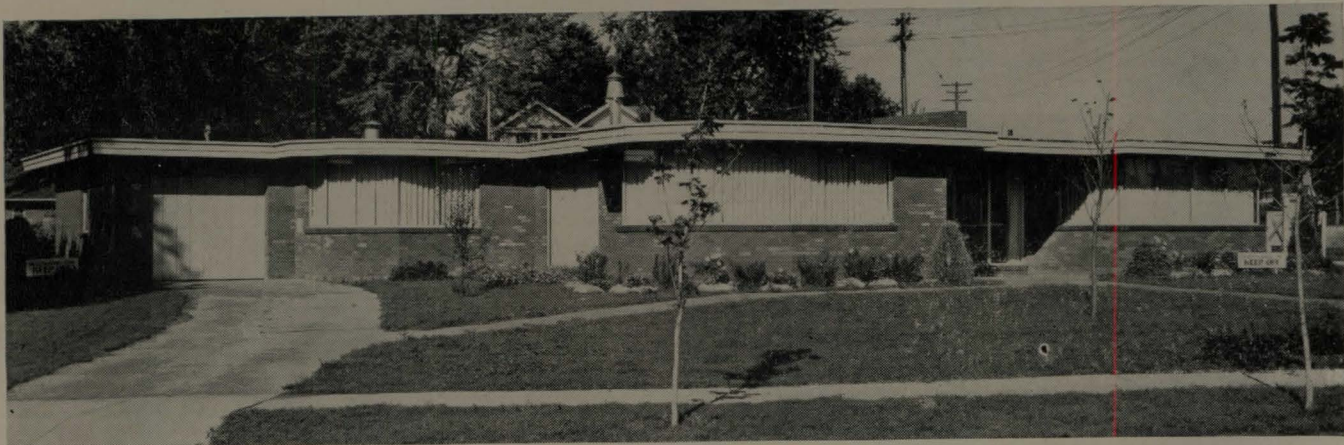
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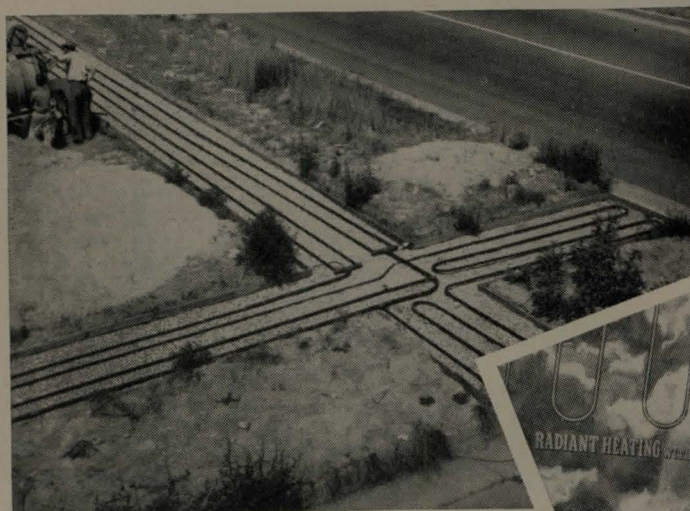
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UNITED STATES STEEL

Kellum Smith, President of the American Academy in Rome. The Academy was founded in 1894 to further the fine arts and classical studies in the United States, principally through granting fellowships to outstanding young American artists and scholars for independent work.

Applications for fellowships for 1952-53 are due at the Academy's New York office, 101 Park Ave., Jan. 1, 1952.

• Alan M. McHenry, 20, of Wichita, Kas., a student at the University of Illinois, won first prize in a national competition in swimming pool design sponsored by the Tile Council of America in cooperation with the Beaux-Arts Institute of Design.

Don B. Wines, Oklahoma A. & M. student, won second place in the competition, which drew 86 entries from architectural students over the U. S.

Scholarships, Fellowships

• The College of Architecture and Design, University of Michigan, has announced that the George G. Booth Traveling Fellowship in Architecture will be offered again this year. There will be no formal competition in design, but application forms will be issued on request. They must be returned not later than May 15. Candidates must be graduates of the College of Architecture and Design of the University of Michigan who have not reached their 30th birthday on May 15. Prospective candidates should write at once to the office of the College of Architecture and Design, 207 Architecture Building, Ann Arbor, Mich.

• Applications must be made by May 15 for the research fellowship in civic design which is offered for 1951-52 in the Department of Architecture at Yale University.

The fellowship, in the amount of \$1500 (including tuition fees), is offered to graduates of the Department of Architecture at Yale or to graduates of other institutions of similar educational standing to encourage research in the Department's new program in civic design.

The projects undertaken by the recipient may form part of the requirements for the degree of Master of City Planning, a program normally of two years' duration. The holder of the fellowship will be expected to undertake research in three-dimensional or other aspects of civic design and to assist in guiding projects by other graduate students in the Department. In addition to a high academic standing, applicants will be required to show proficiency in design and possess an aptitude for city planning studies.

Requests for information and necessary application blanks should be sent to: Christopher Tunnard, Associate Professor of City Planning, Department of Architecture, Yale University, New Haven, Conn.

• April 15th is the deadline for applications for both the F. W. Chandler Fellowship in City Planning and other scholarships covering all or part tuition in the graduate course in city planning at the Massachusetts Institute of Technology.

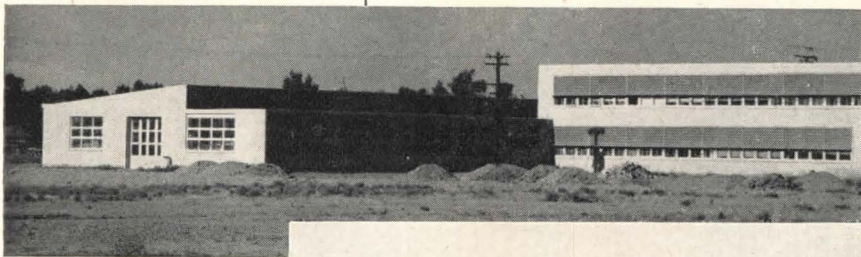
The Chandler Fellowship, amounting
(Continued on page 260)

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better control of LIGHT

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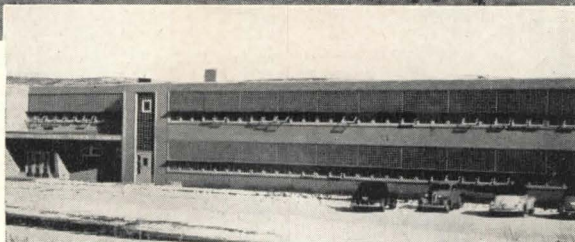
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Obstetrical Clinic, Little Rock, Arkansas
Architect Yandell Johnson, A.I.A.

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to \$1200 for the academic year 1951-52, will be awarded to an applicant for admission to either the undergraduate or the graduate course in the Department of City and Regional Planning whose background is such that he may expect to receive either the B.C.P. or the M.C.P. degree within two years. Con-

sideration will be given to type of previous training and experience as well as to academic rating. The Fellowship will be presented as an outright grant, but the recipient will be expected to pay full tuition.

In addition to the Chandler Fellowship, a limited number of scholarships

are available to students in the graduate course in city planning who have attained a high standard in their scholastic work at the Institute or other accredited college.

Fellowship applications from new students must be accompanied by applications for admission to the graduate school. Both applications must be made on forms which may be obtained from the Director of Admissions. They should be completed and returned to him before April 15.

Further information may be obtained from Prof. Frederick J. Adams, Department of City and Regional Planning, Room 7-333, Massachusetts Institute of Technology, Cambridge, Mass.

- The American Institute of Steel Construction will award 10 scholarships of \$1000 each in American colleges and technical schools during 1951. The program is planned to encourage future engineers to enter the fabricated structural steel industry.

To be eligible for a scholarship, a candidate must be proposed by the executive head of a member company of the Institute. A candidate need not be an employee, or the dependent of an employee, of the sponsoring company.

Scholarships are available only to students who pursue the full course in civil engineering offered at any one of 125 colleges throughout the country.

AWARDS

- Three architects were named by the San Francisco Art Commission when it announced four Awards of Honor and five Awards of Merit to individuals and groups in the city for their accomplishments in several artistic and professional fields.

The Awards of Honor were given to Architects William W. Wurster and Gardner A. Dailey and (posthumously) to Architect Timothy Pflueger for "long and distinguished service to the community."

The Awards of Merit were earned for "distinguished accomplishment" at the recent city-sponsored Art Festival in the Palace of Fine Arts.

(Continued on page 262)

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And now it can be told! Everything we hoped for is an actuality. I am happy to announce that Auto-Lok windows in Wood retain every single Auto-Lok feature...even the vinyl plastic weatherstripping.

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PATENTED
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WOOD OR ALUMINUM
AWNING WINDOWS

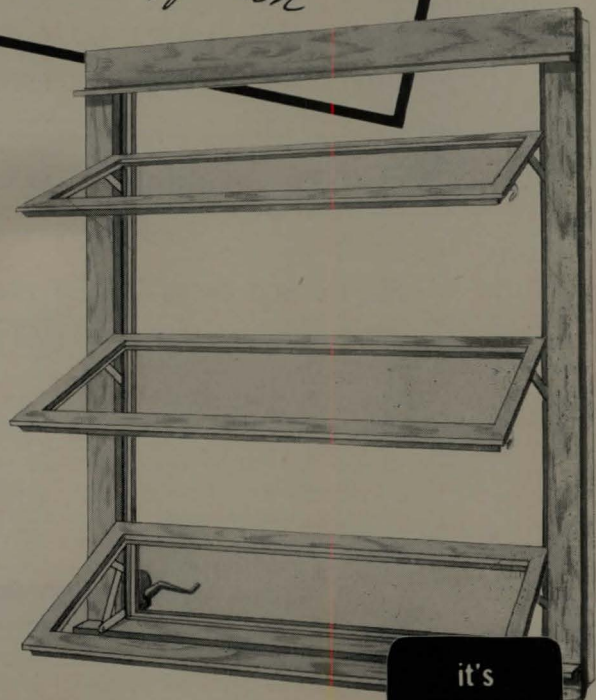
Now, Ludman Corporation offers you patented Auto-Lok operation in an incomparable wood window. Produced from the finest, most carefully selected and treated wood available. Restrictions need not deprive your job of Auto-Lok performance. Auto-Lok Awning Windows in Wood are *now* ready to serve the builders of America at a time when window problems are most acute.

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THE TIGHTEST CLOSING WINDOW EVER MADE

• Henry Dreyfuss, industrial designer, has received the Architectural League of New York's annual Gold Medal for "excellence in design of industrial products for architecture."

The award, made at a dinner in the League building, was given to Mr. Dreyfuss for his design of the Criterion Lavatory (ARCHITECTURAL RECORD,

Dec. 1950, page 176) for the Crane Company of Chicago. Philip Johnson, chairman of the awards jury and director of the department of architecture and design for the Museum of Modern Art, presented the award. Mr. Johnson said the new lavatory represents "the first radical change in bathroom fixture design in almost 50 years."

The jury for this award, in addition to Mr. Johnson, included Edgar Kaufman Jr., director of Good Design for the Museum of Modern Art; Mary Roche, writer; John Peter, editorial consultant in the field of architecture; and Harold Sleeper, president of the Architectural League, as an ex-officio member. Mr. Sleeper remarked that this year's award marked the first time the top prize has been given for a built-in item.

This award, instituted in 1921, is selected annually from the League's Gold Medal Exhibition, at which are shown outstanding accomplishments in architecture, industrial products for architecture, landscape architecture, mural painting and sculpture.

• Several awards were announced by the American Concrete Institute at its 47th annual convention in San Francisco.

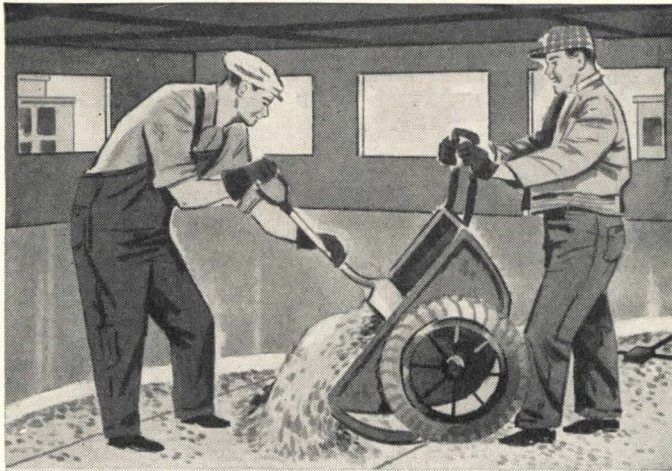
Charles S. Whitney of Ammann and Whitney, consulting engineers of Milwaukee and New York, received the Alfred E. Lindau Award "in recognition of his many contributions to reinforced concrete design practice." The award is given only for outstanding contributions to reinforced concrete design practice and is not mandatory each year.

W. S. Colby, structural engineer, of Stone and Webster Engineering Corp., Boston, Mass., received the American Concrete Institute Construction Practice Award for his paper "Design and Construction of a Circulating Water Intake," published in the A.C.I. Journal, March 1950.

J. R. Leslie and W. J. Cheesman, research engineer and assistant research engineer respectively, Hydro-Electric Power Commission of Ontario, Toronto, Ont., received the Wason Medal for "noteworthy research" reported in "An Ultrasonic Method of Studying Deterioration and Cracking in Concrete Structures" in the September 1949 A.C.I. Journal.

"Specifications Should Be Realistic," a paper which appeared in the September 1949 A.C.I. Journal, won the Wason Medal for "the most meritorious paper" of the volume year for Harry F. Thomson, manager, Redi-Mix Concrete Division, Material Service Corp., Chicago. This award is chosen from material published in the latest volume of Proceedings of the A.C.I.

(Continued on page 264)



for lightweight concrete... use

WAYLITE AGGREGATE

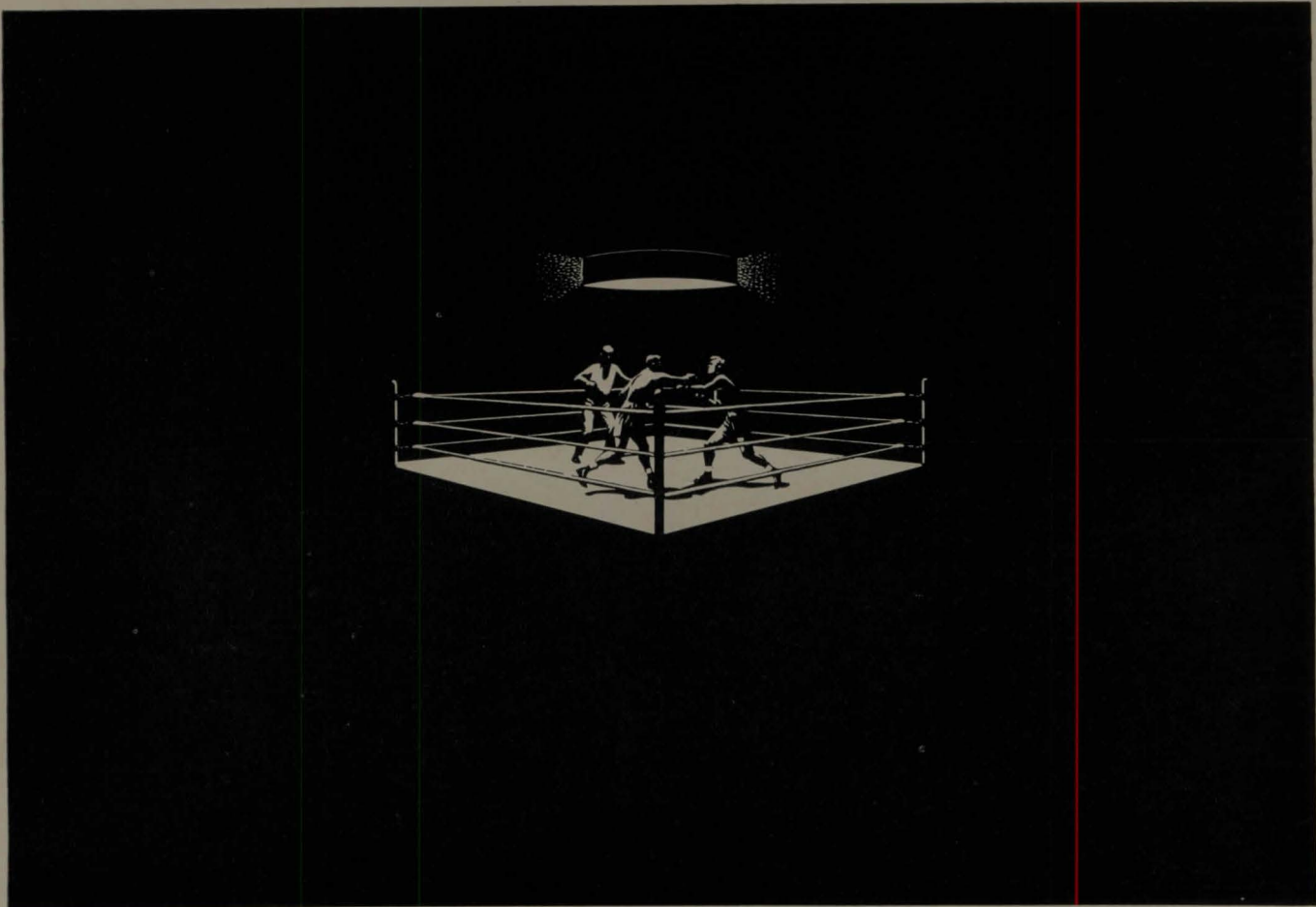
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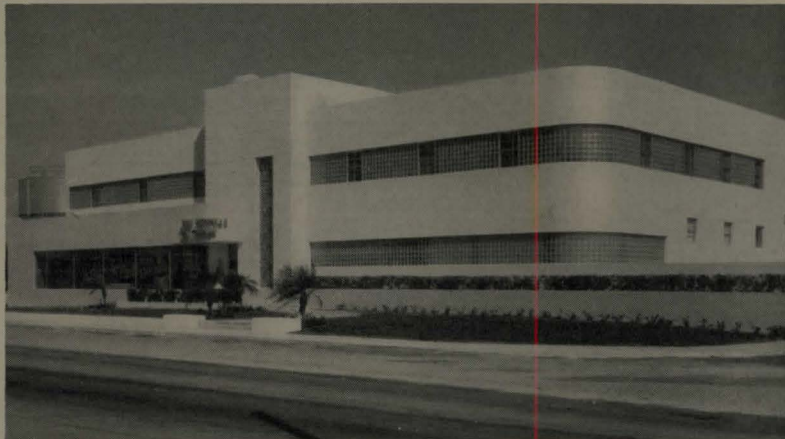
WHAT we're trying to say is that top talent of any kind never is concentrated in any one place. Not all good architects come from the same schools or the same area. Nor is all the finest air conditioning equipment built in any one city by any one firm. As a matter of fact, we of usAIRco believe we're producing some of the best right here in the Midwest. Take, for example, usAIRco's Refrigerated

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(Continued from page 262)

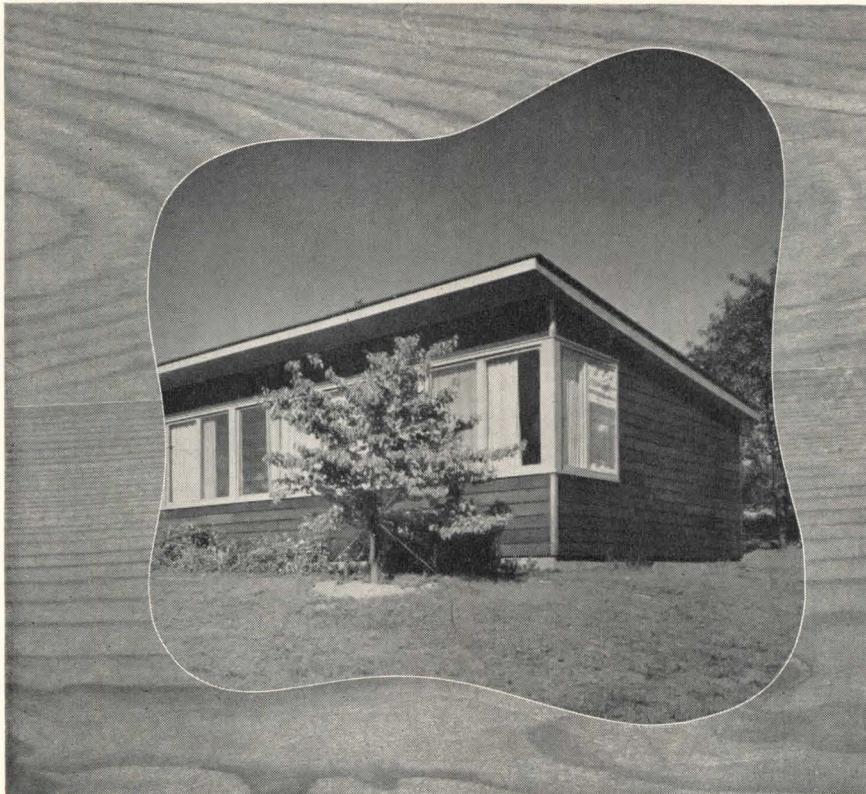
• C. P. Hayes and H. R. Gould of the General Electric Company have won first prize in a competition sponsored by the American Institute of Electrical Engineers. Their winning paper, "Noise Evaluation of Fluorescent Lamp Ballasts," will be published in digest form in the Institute's magazine, *Electrical Engineering*.

• Winners in the first annual national carpet design competition sponsored by the Arthur Fleischman Company of Detroit and the Detroit Institute of Arts were selected from more than 1200 entries representing all of the 48 states. Students walked off with top honors: first place and \$1000 award — LeRoy Wolfe, Chicago Art Institute; second

place and \$500 award — Nancy Carlson, Moore Institute of Art and Design, Philadelphia; third place and \$300 award — Sister Mary Remy, S.S.N.D., Chicago Art Institute.

The jury included Dr. Edgar P. Richardson, director of the Detroit Institute of Arts; Wayne L. Claxton, Wayne University art chairman; Peter Belawick, Bigelow Sanford Carpet Company; Edith B. Crumb, home furnishings writer, *Detroit News*; Talmage C. Hughes, executive secretary of Michigan Society of Architects; James W. Underwood, Alexander Smith & Sons Carpet Company; Adele Coulin Weibel, curator emeritus of textiles, Detroit Institute of Arts; and William E. Woolfenden, director of education department, Detroit Institute of Arts.

An exhibition of 100 winning and outstanding designs has begun a tour of museums across the country.



Architect: William Lescaze, New York

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Cabot's Stains are *beautiful* — they bring out all the loveliness of grain and texture — come in a wide range of colors from clear brilliant hues to weathering browns and grays, many available from no other source.

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Cabot's creosote stains

WEST VIRGINIA ARCHITECTS HONOR BUILDING CRAFTS

West Virginia Chapter of the American Institute of Architects presented awards at its annual dinner to craftsmen of the building trades in recognition of exceptional ability and excellence in their particular fields during 1950.

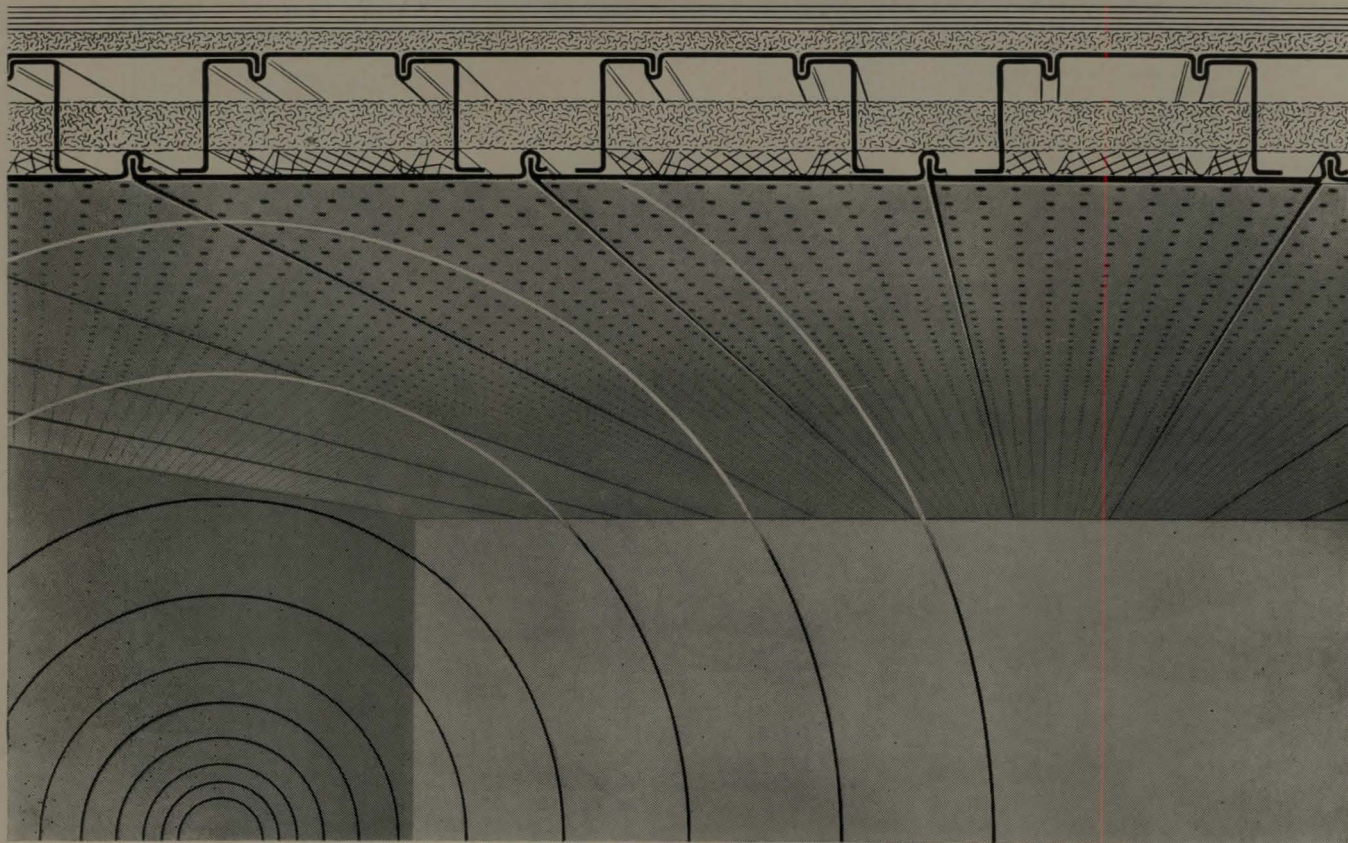
Formal presentation was made at a chapter dinner followed by a dance. Officials and members of the Associated General Contractors participated.

These awards reflect the feeling of the architects that some recognition should be given to those men of the building trades who have done an exceptional job as an encouragement of better craftsmanship in all the trades of the construction industry. The awards are given annually.

President L. D. Schmidt of the chapter made the presentation after a speech in which he emphasized the importance of teamwork in the erection of a building.

"The architect sometimes forgets that he is a dependent creator," he said. "He is not like the artist who paints the landscape and who is an independent creator. The finished building reflects the architect's imagination and conception, but it takes a great deal more than dreams and plans to produce a building. It takes a team. On practically all projects, it takes good assistants for the

(Continued on page 266)



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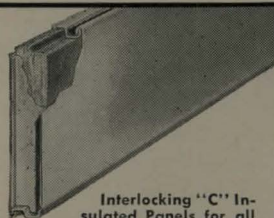
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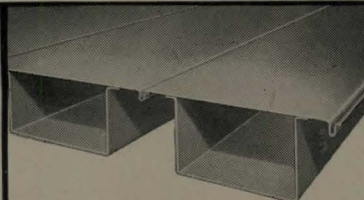
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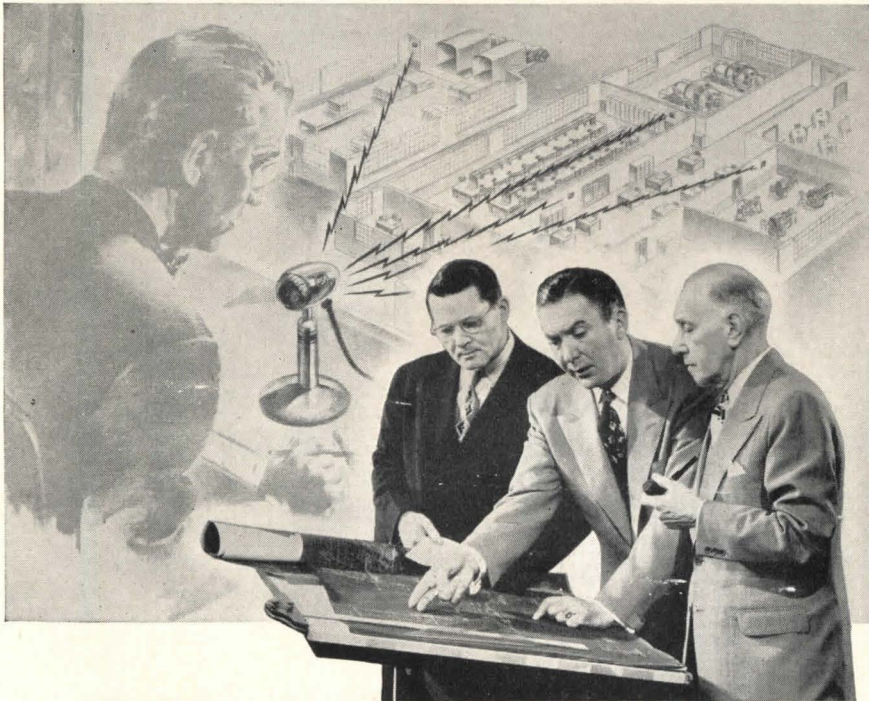
Address

THE RECORD REPORTS

(Continued from page 264)

production of good working drawings and specifications; it takes a good contractor; it takes fine craftsmen."

Chapter Vice President Charles A. Haviland, Master Painter Milton E. Norris, Stone Mason Pete M. Mayers, Charleston; Electrician Albert W. Ertzman, Huntington; Chapter President L. D. Schmidt, Fairmont



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JOHN C. STAHL, 74; ONCE HEADED MICHIGAN SOCIETY

John C. Stahl, for nearly half a century a practicing architect in Detroit, died January 29 in Detroit of injuries received a few days earlier when he was struck by an automobile.

Mr. Stahl, a charter member of the Michigan Society of Architects and its president in 1926 and 1927, had belonged to the American Institute of Architects and its Detroit Chapter since 1916.

Mr. Stahl was born in Detroit July 14, 1876 and received his education in the public schools, under Louis Kampner and Zach Rice and through extension courses in architecture and engineering. He became registered to practice in Michigan in 1915.

ALBERT CODDINGTON DIES; ENGINEER FOR 40 YEARS

Albert A. Coddington, consulting engineer, died February 7 of a heart attack in his home at Ross, Calif. He was 62 years old.

Mr. Coddington will be remembered by innumerable young architects for the series of seminars in heating and plumbing and electrical engineering which he conducted at his own expense. The seminars had been scheduled twice yearly for the past 21 years, in the weeks preceding state architectural examinations. Attendance ranged from 20 to as high as 40.

Mr. Coddington began his engineering career as a draftsman in San Francisco in 1911 after graduating from Stanford University. He established the Coddington Company in 1916. Its jobs include many landmarks in the Bay City, among them the Southern Pacific office building, the Matson building and the main offices of the Bank of America.



Bethlehem Longspan Joists installed in Katzenbach & Warren, Inc., warehouse, New Canaan, Conn.; Architect and Engineer: William A. Grey, Redding, Conn. Contractor: John Zandonella, Bridgeport, Conn.

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Two exits are required. If the basement stairs lead up to the service entrance, that's one. The other can be a basement window (with an outside cover to prevent shattering of the glass) or a tunnel composed of large sections of concrete pipe buried three or four ft underground, with a vertical section for escape not closer than 10 ft from the house. A hood should be provided to

prevent debris from fouling the mouth of the pipe.

As an alternative to the "below stairs" type, a shelter can be constructed with eight-in. concrete or masonry walls and a six-in. reinforced concrete slab top. It should stand free of the basement walls and provide two exits: a hatch in the top and a tunnel to outdoors. The entrance, of air-lock design (in other

words, screened by a short spur wall) should be about three ft above the floor.

Cost of shelter construction is estimated to be anywhere from \$50 to \$150. Whichever type of structure is used, it should be located as far as possible from the fuel oil tank. A curb is recommended around the latter to keep oil from flooding the floor. Dry sand under the tank will absorb leakage.

Other points, some of them surprising from an air raid precaution standpoint, were made by Mr. Fancott. For instance, it is obvious that basements of poured concrete are more substantial than those of concrete block. But it is far less apparent that wood frame walls are to be preferred to masonry walls, providing they contain fire stops (usually included as part of the framing) and are securely anchored to the foundation. Likewise that oil firing presents less difficulty than coal firing.

It should be possible to cut off essential services at a moment's notice, and basements must be well drained. During World War II, many people were drowned in the very shelters in which they considered themselves safest.

Loan Suspension Hit

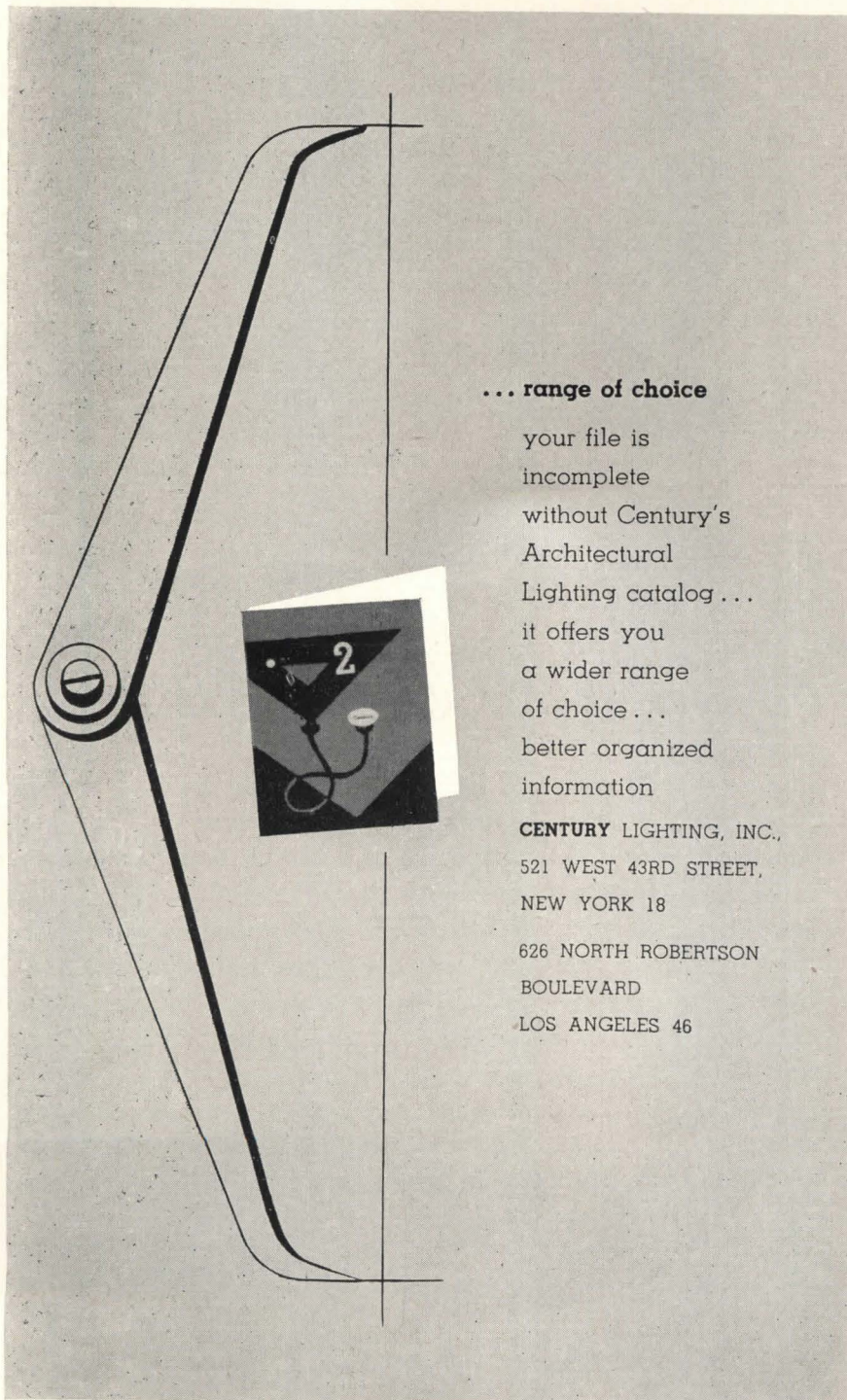
Suspension of the one-sixth extra loan, formerly available under the National Housing Act in addition to a first mortgage, has the effect of raising down payments about \$1000 on five-room houses, and \$1500 on six-room ones.

Canada's home builders agree that some curtailment of mortgage credit is necessary because of inflationary pressures and tightening supply lines. But, they claim, the order suspending second mortgage loans should not have been a blanket one. Certain key defense areas should have been exempted.

Explanation of their point of view is found in the annual address of F. A. Mager, Winnipeg, N.H.B.A. president. He declares that we need, and will continue to need, a great many more houses. "All we did during the postwar period was build at the same rate that new families were being formed. The backlog created during the years of depression and war wasn't touched.

"Now we are faced with a continuing high level of marriages, an accelerated immigration program and population shifts as a result of national defense preparations. Experience tells us that the greatest congregation of people will be in our urban centers, many of which

(Continued on page 270)



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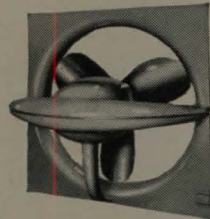
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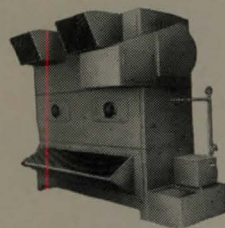
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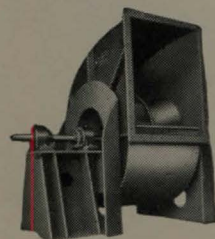
Unit Heaters



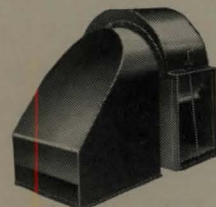
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Utility Sets

are already coping with a serious lack of shelter.

"In the factories and plants now building, emphasis is being laid on permanent construction in the interest of long-term economy. The same should be true in housing. If we accept the family as the basic social unit, the house as the most suitable type of accommodation for the family, and home ownership as the hallmark of good citi-

zenship, then we should not act to prevent the defense family with modest means from owning the house it occupies.

"The fact to be faced is that workers must be accommodated. If it's made impossible for them to buy houses, then the government will have to provide other shelter for them. How can this check inflation or improve the supply situation? And how can a public agency,

with its heavy administrative overhead, produce new housing as economically as private home builders whose lives have been spent acquiring the necessary know-how?"

January 1951 Building Is Triple First Month of '50

Building contracts worth \$159.1 million were awarded in January of this year — nearly tripling the \$56.7 million recorded for the same month in 1950. Industrial building showed a 2000 per cent rise over January 1950. The only decrease was recorded in the residential classification.

Figures on contracts awarded, as reported by MacLean Building Reports Ltd., follow: residential — \$16 million; commercial and institutional — \$38.1 million (up 50 per cent); industrial — \$66.8 (up 2000 per cent); engineering — \$38.2 (up 180 per cent).

(Continued on page 272)

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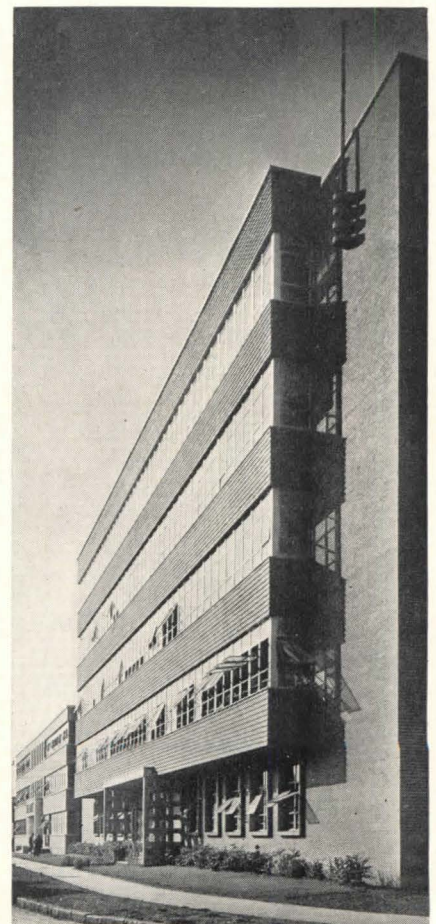
Zonolite prevents heat loss to the ground, gives a warm, dry floor with radiant heating. In addition, its low heat capacity does away with "heat lag" and "override," gives instant response to thermostatic controls.

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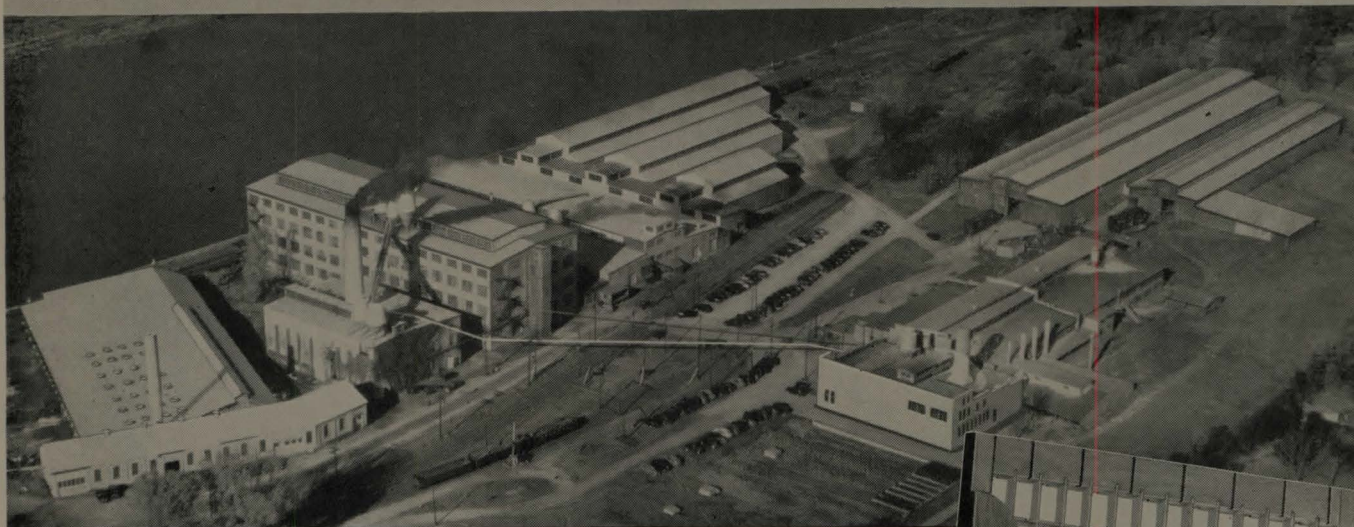
Factory for Park Holdings Ltd., Montreal. Architects were Mayerovitch & Bernstein

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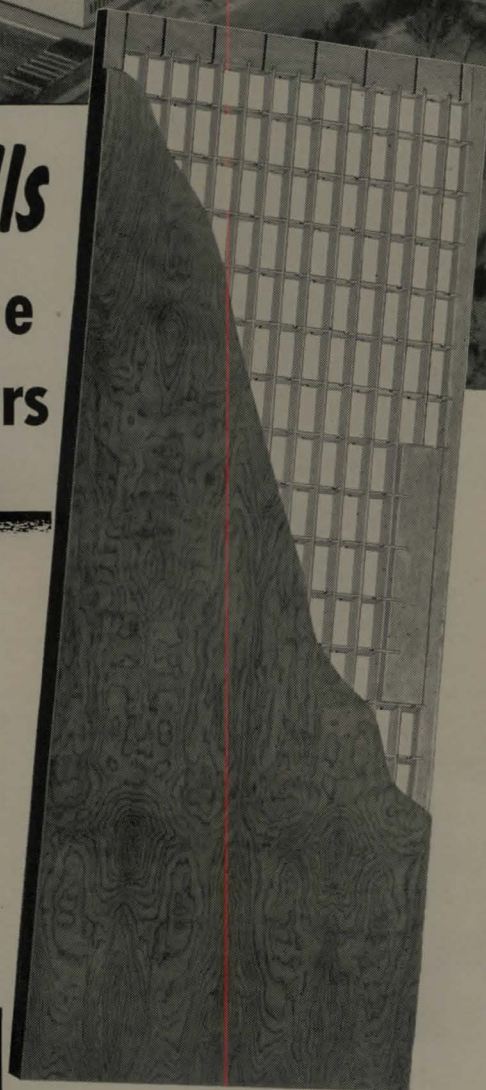
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ESTABLISHED 1853



**Quebec Architects Hear
Talk by Harry M. Prince**

Highlight of the 60th annual meeting of the Province of Quebec Association of Architects, recently held in Montreal, was an address by Harry M. Prince, president of the New York Chapter of the American Institute of Architects and chairman of the subcommittee on

civilian defence of the National Defense Committee of the A.I.A.

Speaking on the subject of housing, Mr. Prince blamed private enterprise for "a complete absence of soundly planned and integrated communities." However, there was an opportunity for it to redeem itself in view of the growing realization that public housing alone cannot possibly reaccommodate all peo-

ple now living in dilapidated dwellings without modern conveniences.

Large-scale housing must be integrated into a studied site plan that will serve overall community facilities, trends and needs, he said. "I am against developments planned solely on the basis of speculative intense land coverage, 'shoddy-gerry' construction, poor workmanship and a total disregard of amenities of community living."

Public agencies and private capital realize, Mr. Prince declared, that slums cost the taxpayers millions of dollars for police, fire and health protection. Discussing wartime housing, and the experiences of England in World War II, the speaker said that following makeshift procedures to take care of the situation, the government permitted a new policy allowing new housing in industrial areas. Housing standards were adopted to meet the needs of various classes of labor.

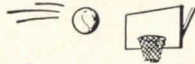
"The experiences of England," said Mr. Prince, who was on a commission visiting that country during the blitz, "should teach us that a war or threat of war presents many problems in housing. Curtailment of standard materials is a challenge to architects in the planning and designing of housing projects. A fascinating aspect of wartime housing is in its design for wartime needs, including the use of materials at hand, and provision for special protective precautions so that the ultimate purpose will be for peacetime living and reduction of housing shortage that always follows war.

"If we are to build the type of housing to prepare for war, to take care of rapid plant expansion, and as a protection against air attacks, particularly in cities which have a slum problem, let us keep before us as architects, that properly planned now, this emergency housing will blossom into a community consistent with our present-day standards of living."

The Association's gold medal of merit, awarded to members who have rendered valuable service to the profession, was presented to two former P.Q.A.A. presidents: A. J. C. Paine, Montreal, and Louis N. Audet, Sherbrooke.

H. Ross Wiggs of Montreal is the new president of the Association. Other officers are: Emile Venne, first vice president; John Bland, second vice president; Maurice Payette, honorary-treasurer; Henri Mercier, honorary-secretary; P. C. Amos, retiring president.

(Continued on page 274)



Long spans for long shots



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Here is an efficient and economical arch to specify where a long, clear span is desired. It is uniform in curvature. Center rise is about equal to one-fourth of the span length. This provides ample head room at the center for gymnasiums . . . armories . . . arenas . . . and various other community buildings.

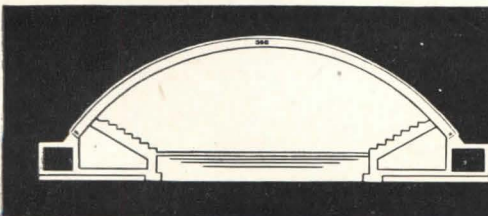
In most cases, decking can be applied directly to arches—eliminating cutting, bracing and bridging of joists or purlins. This means big savings in construction time and costs. Arches are machine-surfaced, ready to erect without cutting or fitting. All hardware and connectors are furnished. For full details, write for information now.

RILCO

**WORKS WONDERS
WITH WOOD**

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2518 First National Bank Building, St. Paul, Minn.



Sketch shows how type 74 arch permits maximum seating capacity in gymnasium, skating rink or other arena. Various length spans are available ranging from 40 to 120 feet. Rilco engineering department furnishes arch reactions required to prepare buttress design.

The Greeks had a word for it... **ΕΥΤΡΑΘΕΙΑ!**
(comfort)



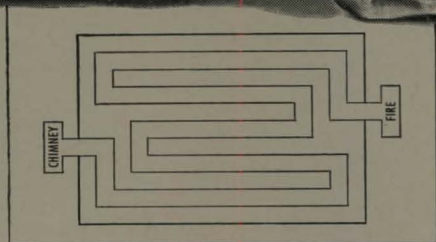
For the "comfort" of radiant heat today
steel pipe is first choice—

Self preservation is the first law of nature and man's urge to seek comfort is part of it. Civilizations long extinct knew that, too. The ancient Greeks had a word for it which means the same but doesn't look nor sound as warm and friendly as our own word "comfort."

But in whatever language you say it, one of the ways of attaining comfort is by keeping warm, and the Ancients knew about radiant heating centuries ago. By passing smoke and hot gases from their fires through ditches and ducts, they warmed the floors and radiated heat throughout their homes.

Today radiant heating brings sun-like warmth to every room, in a completely scientific and effective way, by circulating hot water through embedded steel pipe coils. Proved through more than 60 years of service in conventional hot water heating systems, steel pipe has every quality required by modern radiant installations . . . low cost, strength, weldability, formability, and complete suitability.

Yes, if the Greeks had known about it they would have had words to say "steel pipe is first choice," too.



The ancients utilized channels beneath their floors to draw hot gases through from firebox to chimney, as shown above, thus warming floors.

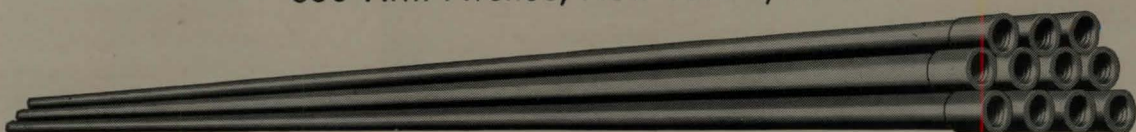


Today steel pipe coils are embedded in floors or ceilings during initial construction to provide advantages of radiant heating.

COMMITTEE ON STEEL PIPE RESEARCH

AMERICAN IRON AND STEEL INSTITUTE

350 Fifth Avenue, New York 1, N. Y.

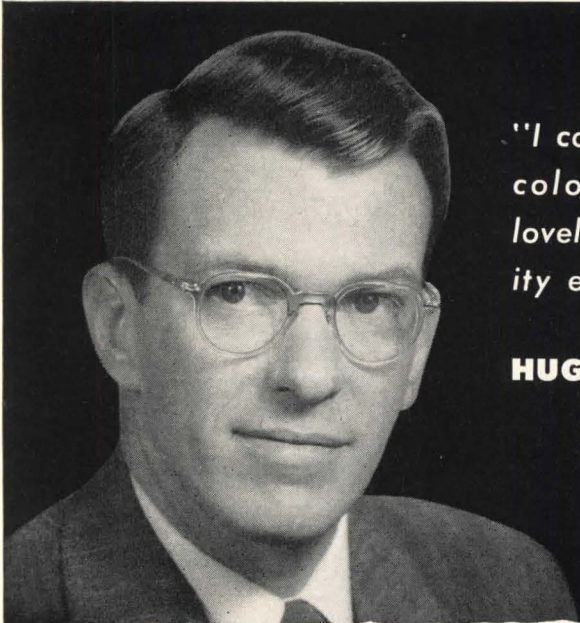
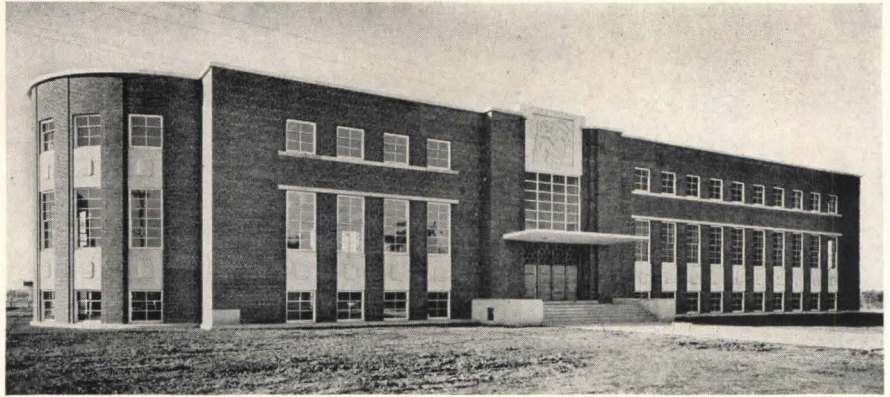


THE RECORD REPORTS

CANADA

(Continued from page 272)

Administrative and social services are centered in first completed unit of Students' Union Building, University of Alberta. Cost: \$500,000. Natatorium and gymnasium are next; theater last. Rule, Wynn & Rule, architects; Mathers & Haldenby, consultants

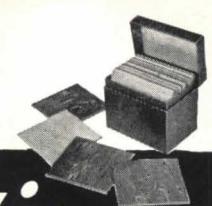


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SAYS
HUGH STUBBINS
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Canadian Housing Production Equals U. S. Per Capita Rate

How does Canada's house production compare with that of other countries? This question was answered by Hon. R. H. Winters, Minister of Resources and Development, when he addressed delegates to the National House Builders Association convention in Montreal.

"Since 1945," he said, "you and your associates have erected nearly 400,000 units. In 1946, the number of housing units completed totaled 67,194. In 1947, the number rose to 79,231 and climbed again in 1948 to a record 81,243. Even this achievement was surpassed in 1949 when a high of 90,955 was reached. Never before has the volume of building been so great as during the last five years."

Per capita-wise, Canada has been building at the rate of 32 units per 1000 population. This about equals the rate prevailing in the U. S. last year and exceeds that of Australia and the United Kingdom, whose rates of building are 31 and 24 units per 1000 population respectively.

The Minister pointed out that the U. S. experienced a marked expansion of housebuilding activity in 1950. Non-farm starts increased by 54 per cent in the first seven months of the year; but such a large program appeared inconsistent with expanded defense efforts, and in October, under the authority of the Defense Production Act, the amount of real estate credit was reduced and terms were stiffened. The resulting cutback in the housing program has been estimated by various authorities between one third and one half.

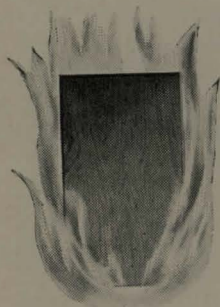
"Early in 1950," Mr. Winters commented, "the annual target for new housing in Great Britain was restored

(Continued on page 276)

Roddiscraft Solid Core Flush Veneered Doors

An Institution with Institutions

For nearly two generations Roddiscraft Doors have been standard equipment in hospitals, schools, hotels, churches and other institutions. Roddiscraft standard construction incorporates all the features demanded by institutional installations — fire protection, sound resistance, ability to take rough treatment. Roddiscraft standard 5-ply construction — core, crossbandings and faces welded into a single unit — builds in all the strength and stability of plywood construction.



SAFE — Standard 1-3/4" construction withstands independently conducted fire tests in excess of 40 minutes.



SILENT — Standard 1-3/4" construction develops a sound transmission loss of 30.9 decibels.



STURDY — Solid core and strong 1/10" crossbandings give complete support to the faces — absorb shock.



WATERPROOF — Two complete waterproof glue lines deny entrance to moisture.

Standard Thickness Face Veneers* Out-Look and Out-Last Thick Veneers

The thinner the face veneer, the less wood exposed outside the waterproof glue line. That's a self-evident fact — and that's why Roddiscraft Standard Thickness Face Veneers — *1/28" for most woods — are best. Exposure tests show checking patterns become coarser and more conspicuous as the face thickness increases. Thin veneers also

permit better matching, are more resistant to abuse because of the tough hardwood crossbandings to which they are inseparably bonded.

Roddiscraft construction utilizes 1/10" thick hardwood crossbandings . . . sure protection against core pattern showing through face veneers after finishing.

FOR SPECIAL INSTALLATIONS

FLUSH VENEERED FIRE DOORS FOR INTERIOR USE...

Advanced safety features that guard life and property are built into Roddiscraft Protex Doors. That's why these doors are so often specified in plans for hospitals, hotels, schools and apartment buildings. They are built to withstand the 60-minute fire test, including the hose stream test. Independent laboratories show they have a safety margin well above the prescribed minimum. Identical in appearance to other Roddiscraft Flush Doors.

FLUSH VENEERED DOORS FOR X-RAY PROTECTION...

The Roddiscraft X-Ray Door matches regular Roddiscraft Flush Doors in appearance. It is equipped with a continuous sheet of lead set midway between a divided wood core. Otherwise, it is identical in all respects to the Roddiscraft Solid Core Door. Roddiscraft X-Ray Doors are manufactured only on special order. Any thickness of lead may be specified, according to the amount of protection required.

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to a rate of 200,000 dwellings from the previous program of 185,000, which had been stipulated in the capital cuts of late 1949. It will be remembered that the population of Great Britain is more than three times greater than Canada's. In Australia, a heavy program of industrial construction and strong domestic demand augmented by large immigration have produced an inflationary situation which is aggravated by short-

ages of key materials, notably steel and coal. In New Zealand, dwellings started in the first half of 1950 were slightly down from the corresponding period of 1949.

"It can be safely said that, with the possible exception of Sweden and New Zealand, Canada's performance in the field of housing has been at least the equal of that of any country of the world on a per capita basis."

Buffalo Architect Addresses Meeting of Toronto Builders

How can individuality be obtained for mass-produced housing?

One way is to get architects and builders to work in closer cooperation, said John N. Highland Jr., Buffalo architect, addressing a recent meeting of the Toronto Metropolitan Home Builders' Association. Members of the Society of Residential Appraisers and the Ontario Association of Architects were at the meeting.

Mr. Highland is acting chairman of the American Institute of Architects Committee for Collaboration with the National Association of Home Builders.

He pointed out that today the man who calls the tune in building is the man with the down payment. Therefore, the importance of good design, to please the customer as well as make the most economical use of available materials, is more apparent than it has been at any previous time.

Mr. Highland said that the best service an architect can offer a builder is that in which he participates in the entire development of a project. This includes not merely the design of houses, but market analysis, land planning, structural engineering, color styling, sales psychology and mortgage financing. Builders with a sufficiently large volume of production could, working with their architects, help promote construction code revision, adoption of modular standards, and better design of such stock house parts as doors, windows, and millwork.

Climbing U. S. Demand Spurs Increases in Lumber Prices

Increased U. S. demand was largely responsible for the 20 per cent rise in the lumber index during the first 10 months of 1950, according to *Housing in Canada*, a quarterly publication of Central Mortgage & Housing Corporation. At the same time, shortage of lumber caused fewer houses to be completed.

Wood, of course, was not the only residential building material to go up in price. Increases ranged from 11 per cent in the case of bricks, six per cent for plumbing and heating equipment, four per cent for cement, two per cent for paint and lath, plaster and insulating products. Overall boost in material prices was 15 per cent, while wage rates mounted four per cent.

(Continued on page 278)

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SLABS

SIZES 6x6 3/4" 4x4 3/4"
9x9x1" 6x9x1"

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sparkle to simple cleaning. Vertical base tile are available for corners and trim. For years Ludowici tiles have been the choice of architects in thousands of installations including the recently laid promenade atop the famous U.N. Secretariat Building. Write for samples. See our catalog in Sweets.

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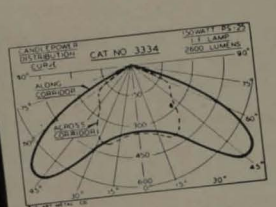
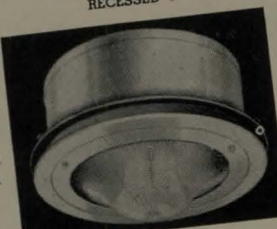
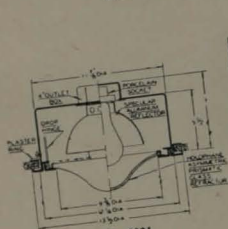
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CORRIDOR HOLOPHANE ASYMMETRIC PRISMATIC GLASS REFRACTOR RECESSED TYPE



Cat. No.	Distribution Characteristic	Refractor Size	Max. Watts	Face Plate	Insert Box Size
3334	Asymmetric	9 1/2" Dia.	150	13 1/4" Dia.	11 1/2" Dia. x 7"

FINISH: Drop Hinged Door Baked Satin Aluminum—Trim Baked White Enamel. Reflector: Specular Aluminum. Furnished Complete with adjustable Plaster Ring and 4" Outlet Box Attached.

SPECIFICATIONS
 Insert Box and Trim are one integral assembly, made of .037 gauge steel, and processed to resist rust. Furnished complete with Adjustable Plaster Ring and a 4" Outlet Box. Approved by Underwriters' Laboratories, Inc. Finish is Baked White Enamel inside and outside—the Drop Hinged Door is Baked Satin Aluminum.

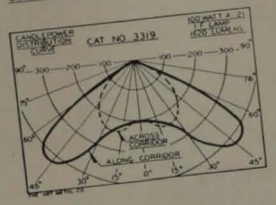
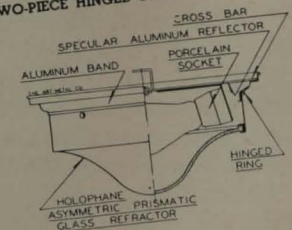
Holophane Prismatic Glass Refractor provides an Asymmetric (corridor-type) light distribution. Lamp position—vertical (1-150W). Spherical Reflector is made of 20-gauge aluminum, finished specular, and cooperates with the refractor for maximum efficiency. Refractor holder door is drop hinged.

VENTILATED SURFACE TYPE—TWO-PIECE HINGED BAND

Holophane Prismatic Glass Refractor provides an Asymmetric (corridor-type) light distribution.



No. 3319 12" Dia. 5 1/2" O.A. Glass 10"x3" 100W
 FINISH: Brushed Aluminum.
 Complete with Reflector Plate and Cross Bar.
 Made of Aluminum.



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THE ART METAL COMPANY

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- 51 Cross Section Details
- 47 Light Distribution Curves
- 24 Coefficient of Utilization Tables
- .. Detailed Product Specifications
- .. Applications
- .. Data
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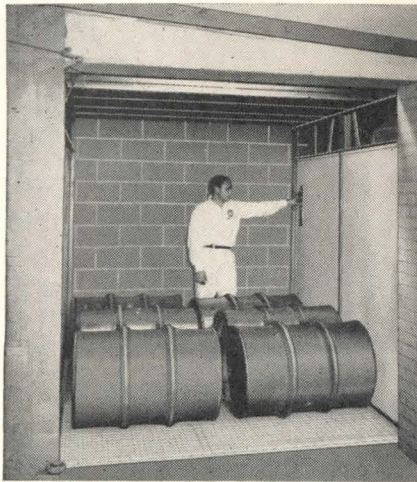
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THE RECORD REPORTS

CANADA

(Continued from page 276)

Defense Program Can Bolster Better Housing, Says Faludi

Canada's defense program presents a unique chance to produce a better residential environment—a chance that may not occur again in this generation.

So says Dr. E. G. Faludi, one of the country's top-flight community planners. He hails as "logical and far-sighted" a recent statement by Hon. R. H. Winters that any defense housing projects undertaken at this time will consist of permanent-type dwellings.

The Minister of Resources and Development made it clear that the last thing the government wants is to resume its World War II role as landlord. But, he added, it may have to do so if sufficient housing is not forthcoming from private sources. Both federal and provincial authorities have been giving attention to the shelter problem created by the nation's mushrooming preparedness program. The Minister referred particularly to Malton, Ont., where the staff of A. V. Roe Canada Ltd. will be doubled following addition of 100,000 sq ft of space for the manufacture of jet engines. Another area of activity is Atikokan, where accommodation must be provided for workers on the development of Steep Rock.

Queried with regard to the Minister's statement, Toronto officials of Central Mortgage & Housing Corporation declined to comment. However, builders, architects and planners are actively speculating on the implications of the Minister's remarks.

As manager of Town Planning Consultants Ltd., Doctor Faludi played an active part in solving many of the growth problems of the Greater Toronto area. He points out that industrial and residential planning should proceed on a regional rather than local basis.

Gen. A. G. L. McNaughton Gets Engineers' Gold Medal Award

Third recipient of the gold medal of the Association of Professional Engineers of Ontario is Gen. A. G. L. McNaughton, wartime commander of the Cana-

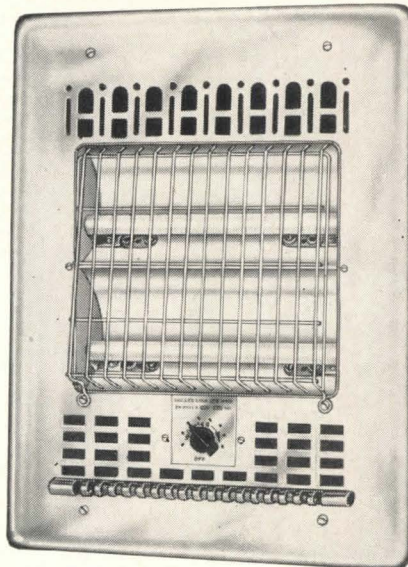
(Continued on page 280)

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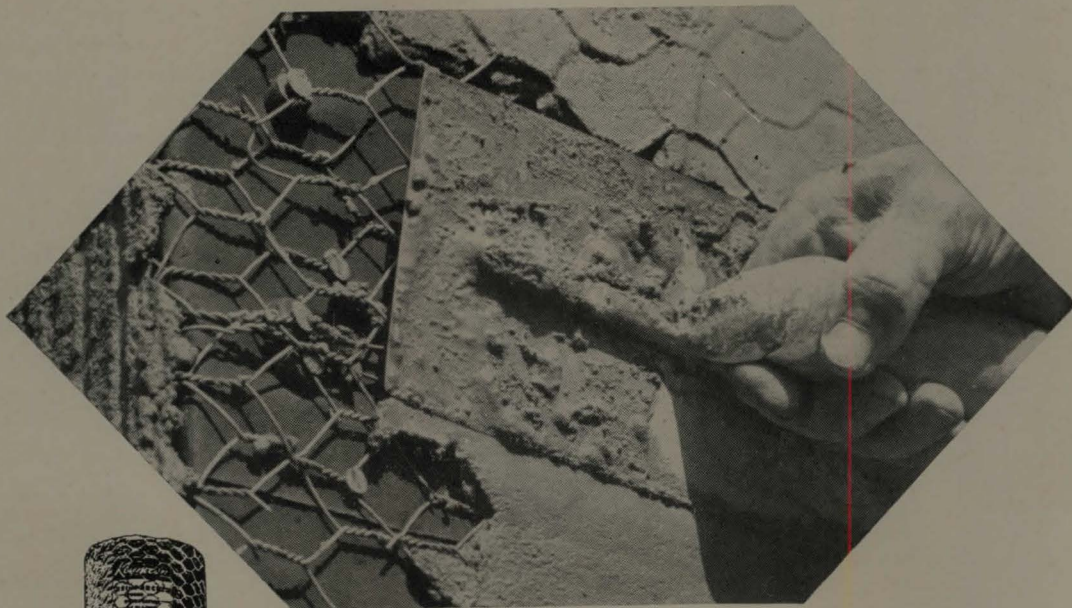
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THE RECORD REPORTS

CANADA

(Continued from page 278)

dian Army overseas and member of the International Joint Commission.

The award, "for outstanding accomplishment to the nation," was made at the association's recent annual meeting in Toronto.

Previous recipients have been Rt. Hon. C. D. Howe, Minister of Trade and Commerce, and Dr. C. R. Young, retired director of the Faculty of Applied Science and Engineering, University of Toronto.

Test Hut Program Rolling, Research Officials Reveal

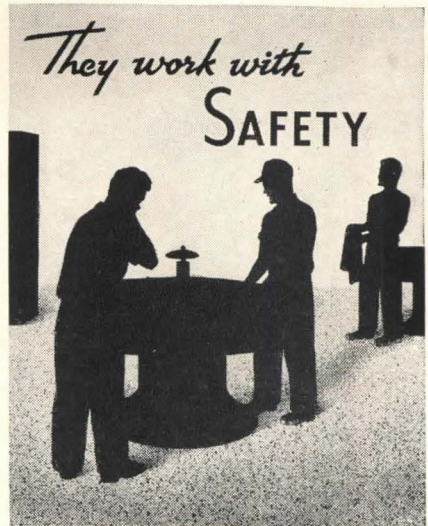
Progress can be reported on the test hut program undertaken by the Division of Building Research of the National Research Council. Idea is to discover what happens to walls when moisture and heat flow take place.

Special laboratory facilities at the Division's regional station at Saskatoon have been provided for the testing of large complete wall sections. "But," says Director Robert F. Legget, "while such laboratory studies are of great use in building research, outside test facilities must also be developed in order to give new materials and methods of construction a trial under actual atmospheric conditions."

Accordingly, a number of test huts — real, scaled-down buildings — have been constructed at Ottawa and Saskatoon. One has also been erected at Churchill. It is the same as an identical hut built at each of the other two centers. This repetition is for control purposes, to permit correlation of the results.

The huts are four ft sq and about eight ft high. They have flat roofs, and walls of varied construction. Those at Ottawa include the control hut, of standard frame construction, and two huts of foamed slag concrete, one especially insulated at the corners. The remainder are of brick, both solid and cavity wall. Two of the solid brick huts are insulated with two in. of mineral wool, but differ in that one has its inside face back-plastered and covered with asphalted felt. The other has not received this treatment.

(Continued on page 282)



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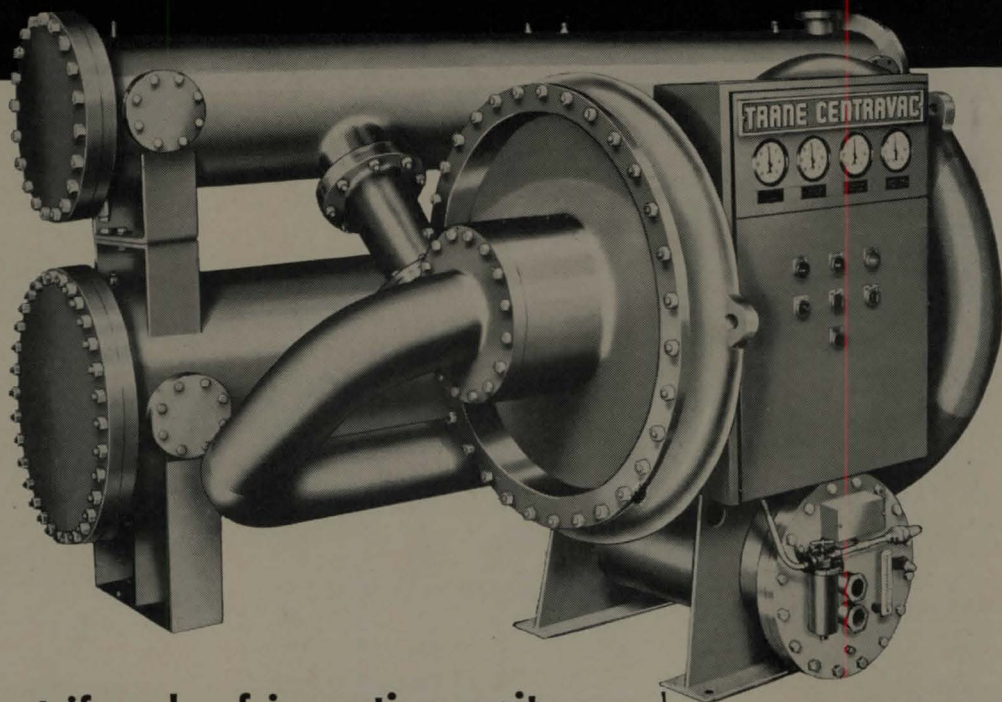


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Here's the new **TRANE CenTraVac** ... it's more than a compressor!

Now . . . for the first time . . . Trane makes centrifugal refrigeration available for the all-important 45- to 190-ton range.



Complete centrifugal refrigeration unit cuts costs four ways

The CenTraVac is a new kind of centrifugal . . . hermetically sealed direct drive . . . with stable operation from 100% down to 10% of rated capacity . . . with efficient operation on reduced loads.

Power Saved on Reduced Loads!

CenTraVac has *built-in* capacity control. Horsepower saving runs parallel to capacity reduction over wide operating range. Owner pays only for chilled water actually used.

Simplified Installation Slashes Costs!

Compact, lightweight, vibration-free CenTraVac can be mounted anywhere from basement to penthouse without special foundation. One hermetically sealed unit is a complete chilled water refrigeration system. One wiring job—one set of connections—one system of controls.

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CenTraVacs are designed to deliver over a ton of refrigeration per horsepower. Efficient on small as well as large jobs. Five models—45 through 190 tons.

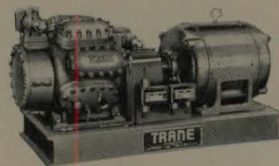
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Ask the Trane representative in your area — or write The Trane Company, La Crosse, Wis., for CenTraVac Bulletin S-399.

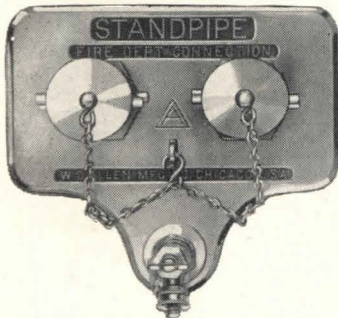


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THE RECORD REPORTS

CANADA

(Continued from page 280)

Thermo-couples, recording instruments and other scientific devices are placed in each hut. A false floor supports the heating and humidifying equipment, with access provided by an underground tunnel connecting all huts.

Mr. Legget points out that complete meteorological records are being taken in conjunction with each test hut installation, since outside research work and investigations in actual buildings must be interpreted in terms of local climatic conditions.

Results will be announced sometime this summer.

Radioactivity Used to Find Moisture Content of Earth

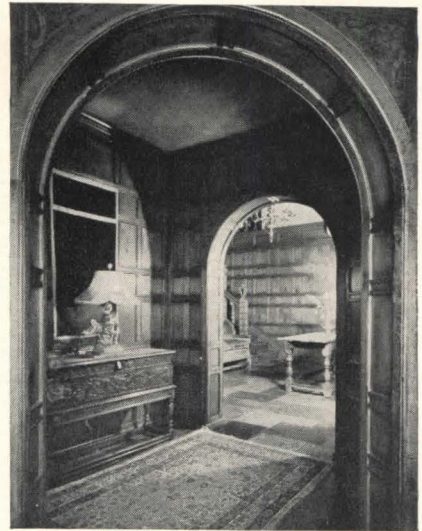
Use of radioactivity to find the earth's moisture content without disturbing it was described at the fourth annual Canadian Soil Mechanics Conference held recently at Ottawa under the auspices of the Associate Committee of Soil & Snow Mechanics, National Research Council.

A source of neutron radiation, shielded so that radiation can only pass through surrounding soil to reach a nearby element sensitive to the rays, is lowered into a bore hole. After exposure, this element is brought to the surface and the amount of radiation to which it was subjected is read with a Geiger counter. From this, the moisture content of the soil at the level of the radiation source can be found.

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Latest addition to the list of national shrines is Lower Fort Garry, 120-year-old Hudson's Bay Company fort on the west bank of the Red River 18 miles north of Winnipeg.

Construction of Lower Fort Garry was begun in 1831 on the recommendation of Sir George Simpson, then governor of the company in North America. The building became the headquarters of the Red River settlement and also the point of departure for men and goods from the east heading west, by water across the prairies to the Pacific Coast on the far North.



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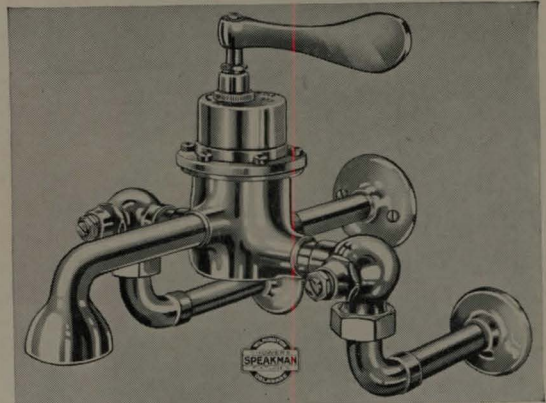
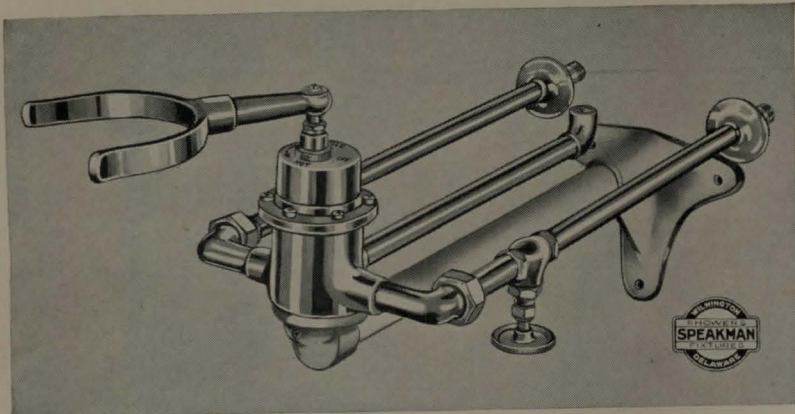
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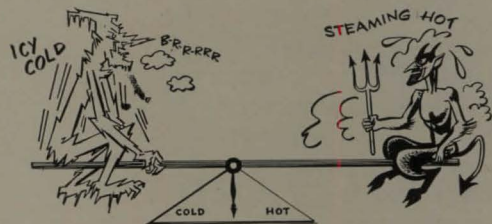
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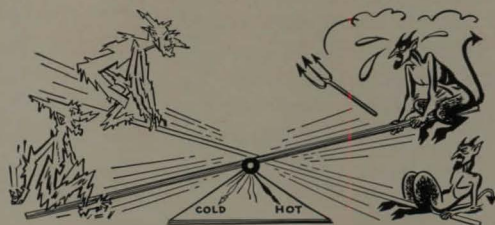
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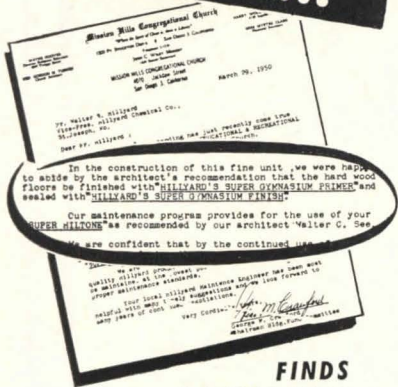
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OUTLOOK BRIGHTENS

(Continued from page 9)

ously required to bring the military establishment up to full postwar normal strength is expected to cost 50 to 55 billions of dollars annually. It has been estimated that in 1952 this program will mean diverting 18 per cent of the economy to military needs; but the expansion of production facilities so urgently encouraged by defense officials and the anticipated leveling off of military expenditures could mean, Mr. Holden believes, that by 1955 the military requirement will be satisfied with 10 per cent of the gross national product.

Working from the assumption that all-out war is not likely at an early date, Mr. Holden offers some conclusions about the effect of the present defense program on the construction industry. They are:

1. That construction will likely continue at relatively high levels during the period of defense mobilization.

2. That any cutbacks in overall construction volume that may take place during the transition period are apt to be moderate, perhaps approximating the amount of cutbacks that might have come as a normal market reaction from the 1950 boom.

3. That defense requirements will be largely met by increased production of basic materials.

4. That any cutbacks in civilian production or civilian construction during the transition period will have as a principal purpose shaping of the country's expansion in such a way as to provide adequately for the normal postwar defense program.

5. That once the transition to normal postwar defense has been accomplished, limitation orders and controls can be greatly relaxed, if not eliminated.

6. That expansion of the American economy will of necessity require construction in great volume and in wide variety of structural types.

Mr. Holden rests this appraisal on two basic facts:

1. Production requirements of the present mobilization are obviously much less than those which were successfully met in World War II.

2. The country has, to meet these smaller requirements, a considerably larger productive capacity than it had during World War II and its productive

(Continued on page 286)

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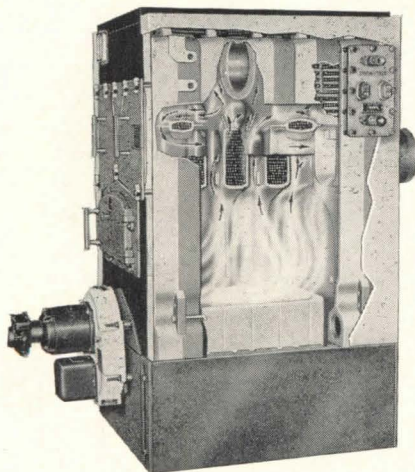
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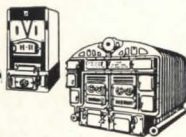
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OUTLOOK BRIGHTENS

(Continued from page 284)

capacity can and will be further expanded.

The increase in total productive capacity between 1940 and 1950 is estimated at 50 per cent, and actual production in the durable goods industries (source of construction materials and equipment and of the bulk of munitions output) increased by 80 per cent. As for the future, Mr. Holden points out:

"The present policy of military and defense mobilization leaders strongly favors increasing productive facilities over stockpiling unnecessarily large quantities of military end-products which could become obsolete before they could be fully used. There is recognition that all-out war production in absence of certain need or in advance of such need could be extremely wasteful, could unduly burden the civilian economy and could actually work to the great advantage of a potential enemy."

Achievement by 1955 of a gross national product of \$350 billions (in terms of 1950 prices), the goal estimated as desirable by the President's Council of Economic Advisers, is regarded by Mr. Holden as "an attainable goal, which could even be exceeded," though he makes no absolute prediction.

Mr. Holden expresses confidence that expansion will proceed as fast as availability and fair allocation of indispensable raw materials will permit.

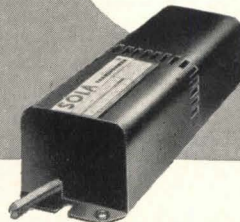
On the subject of materials supply, Mr. Holden summarizes in a series of appendices to his analysis some pertinent factors affecting the supply of steel, copper, zinc, aluminum and cement, a list selected as indicating a typical range of raw materials indispensable to any large and varied construction program.

Plans for substantial increases in output of steel and aluminum are cited as encouraging factors for the civilian supply outlook, and Mr. Holden notes the February 23 statement of Defense Mobilization Chief Charles E. Wilson that in 1953 there will be more steel and more aluminum available for civilian use than before Korea.

"Quite hopeful factors" in the copper situation are seen by Mr. Holden, although he points out that there has not yet been any announcement of so clearly defined an expansion program as the steel industry has developed. Working out satisfactory business arrangements

(Continued on page 288)

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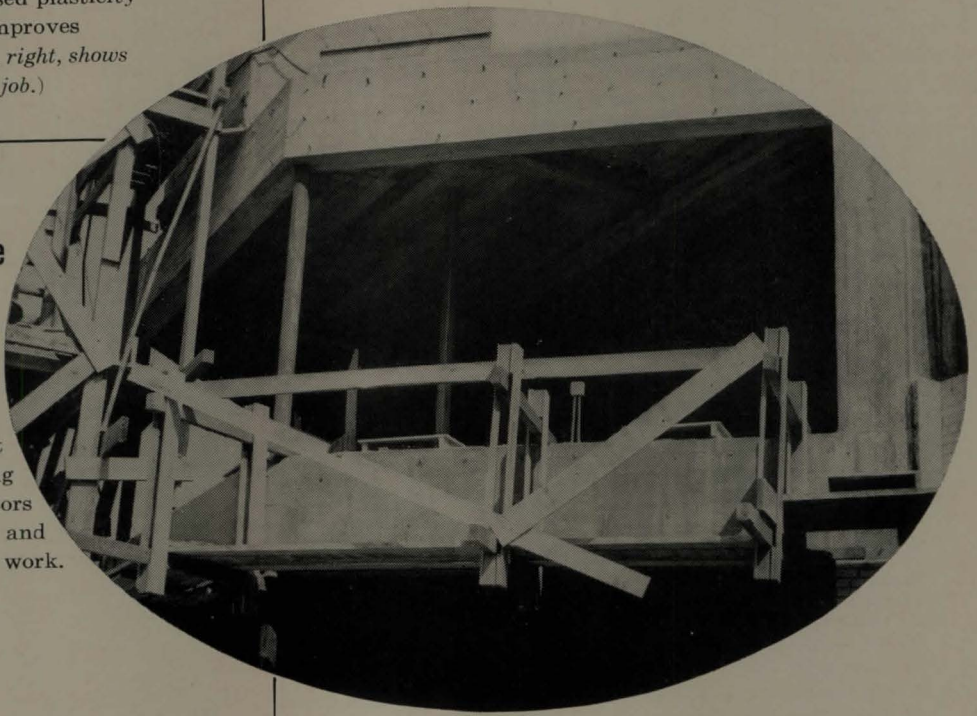


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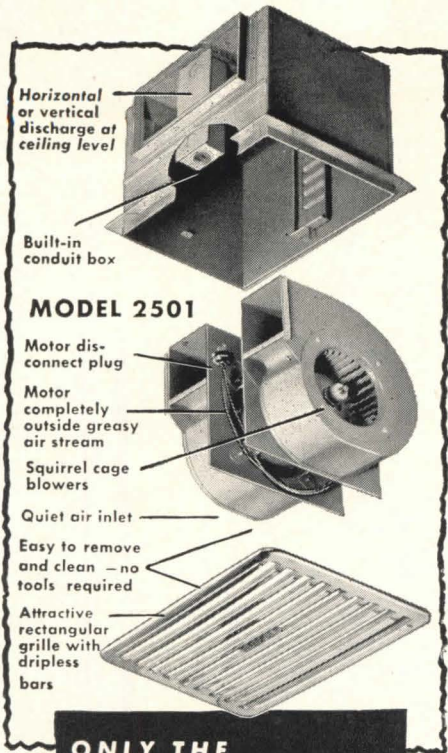
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OUTLOOK BRIGHTENS

(Continued from page 286)

with foreign producers might be an even more important factor in increasing supplies than expanding domestic production, he says.

Zinc production in 1950 amounted to 370,000 tons compared with 945,000 tons in 1942 and over 990,000 in 1943. "Presumably zinc production could again be increased over the 1950 total," Mr. Holden observes.

A look at one of the important non-metallic materials may be reassuring to construction industry people, Mr. Holden suggests, even though few if any of them ever become scarce for reasons other than unusual construction demand. He quotes from *Pit and Quarry* to report that estimated capacity of the Portland cement industry increased from 254,272,376 barrels in 1948 to 272,000,000 at the end of 1950, with 288,000,000 expected by the end of 1951.

Of the material supply situation in general Mr. Holden says:

"The evidence seems to be quite convincing to the effect that it will be entirely possible to meet with reasonable speed the combined requirements of the nation's defense program and the continuation of its trend of steady improvement in living standards."

Although he recognizes that construction business in all its aspects will be complicated by government controls of various kinds during the period of adjustment to the postwar normal defense program, Mr. Holden concludes:

"If the defense program maintains its present character of insurance policy for peace, the expected squeeze on civilian construction and civilian production will prove to have been but a means of adjusting the pattern of future expansion of the American economy in a particular way. This expanding economy is being adjusted so that it can maintain a satisfactory rate of improvement in consumption standards and at the same time carry a military establishment adequate to the country's present defense requirements and world responsibilities.

"Expansion of the economy will, as always, require much new construction. The nation cannot achieve by 1955 a gross national product of \$350 billions or take adequate care of a population which will have increased to 160 million persons without constructing new facilities of every important kind and variety and in very large quantities."



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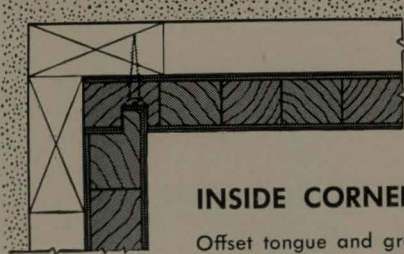
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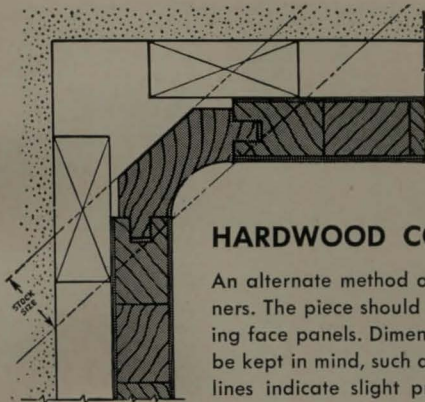
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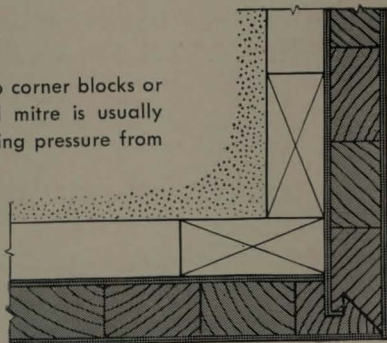


HARDWOOD CORNER

An alternate method of treating inside corners. The piece should be hardwood matching face panels. Dimensions of piece should be kept in mind, such as 7/8" or 1 1/8". Dotted lines indicate slight projection often used.

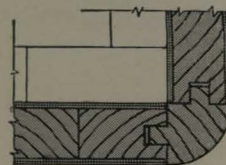
OUTSIDE CORNER

For a clean corner with no corner blocks or molding, this tongue and mitre is usually used. It needs glue-clamping pressure from one direction only.



HARDWOOD CORNER

Outside corner handled in same manner as inside corner (above).



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