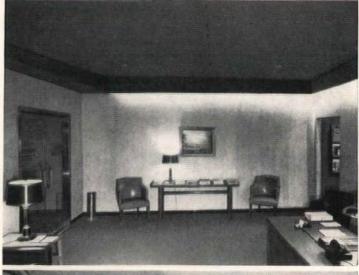


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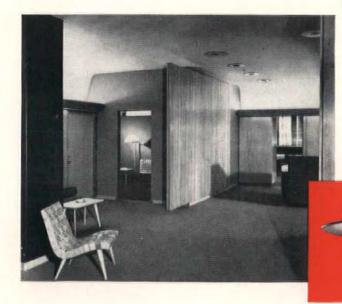
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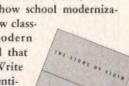
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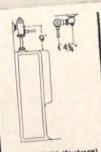
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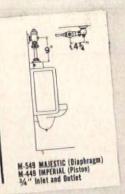
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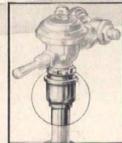


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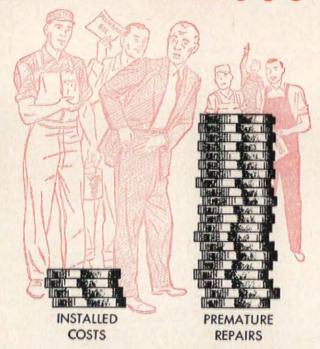


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a little more NOW-or a lot more LATER?

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ARCHITECTURAL RECORD

June 1954 Vol. 115 No. 6

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Multi-family housing, in its broadest sense, has not been well done in this country, for the total environment of our cities does not reflect our national prosperity or our standards of pleasant and healthful living. If it is a large order to improve our urban environment, it is one that cannot in justice be ignored. One, also, that challenges architects as nobody else, for who, if not architects, deals in matters of environment? Our study this month poses the challenge, and shows some steps architects have been able to take.

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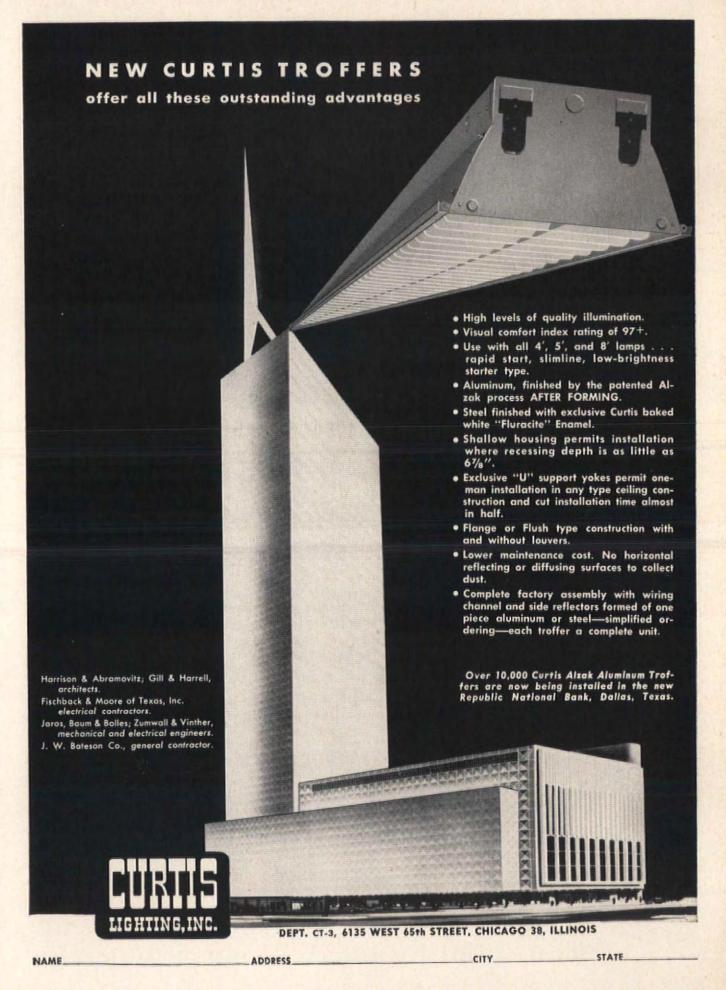
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OFFICES - SCHOOLS - LABORATORIES - HOSPITALS - INDUSTRIAL PLANTS

THE RECORD REPORTS

PERSPECTIVES

THE ARCHITECTURE OF NEW ENGLAND will get a lot of attention this month as architects from every part of the nation converge on Boston for the 86th annual convention of the American Institute of Architects June 15-19. Well-known monuments of the past and present will have to share the spotlight with a brand new one: a Bucky Fuller dome erected in the Boston Gardens as an exhibition pavilion for the architectural section of the Boston Art Festival. The exhibits have been selected from submissions by architects throughout New England to represent the area's contemporary architecture.

A BOSTON ARCHITECT visiting New Orleans not so long ago was inspired to a combination of admiration and lament: "Why don't the architects of Boston and New Orleans use, creatively, the great traditions they are nearly unique (in this country) in enjoying?" Writing in the New Orleans A.I.A. Bulletin, Tourist Robert Woods Kennedy noted that in these two cities where "the contemporary architect must compete with a great tradition," the competitive approach has taken two forms: "Traditionalism, or slavish imitation, is the most widely used and perhaps the most successful. But it is really more suited to those cities without an old, vital and true tradition — to the pathetic situation where ancestors must be created out of whole cloth because none already exist. Modernism, on the other hand, entirely rejects tradition in favor of a 'scientific' or 'rational' approach. It outrages us because it seems to declare that ancestors are unnecessary and worthless emotional baggage. Both approaches have failed to offer their proponents a tenable competitive position." Mr. Kennedy acknowledges that creative contemporary use of tradition is not an easy program to propose: "But the truth is that Traditionalism and Modernism have so completely usurped the architectural scene that no one to speak of, either in practice or in school, has made an attempt to work creatively and traditionally."

WHAT MIGHT A NEW ENGLAND RE-GIONALISM be like, if we ever got to it? "One can only give intuitions and guesses," says architectural historian Hugh Morrison. Some of the things "more as qualities than as specifics" - that he senses as specifically New England: closeness to the ground; compact perimeter; wood (clapboards, shingles) - not brick or stucco: colors in browns, russets, whites, barn reds, maybe even yellow - but not pastels or any of the other strong colors; smallness of scale ("New England has always been a place of small land parcels and an intimate landscape"); a certain fineness and delicacy of detail: "Moderated sunshine and light permit this; desert sunshine does not. Think of the fine shadow-lines of clapboards, the delicacy of Adam detail. There is a certain prim Puritan tightness here, contrasted to the careless grandeur of the South, that can be made into an esthetic virtue rather than liability (that's all regionalism is, isn't it?)." Professor Morrison notes that some "perhaps most" - of these things are part of New England's historical tradition and "somehow creative architects would have to give modern expression to them.'

THE VIRGINIA TRADITION in architecture is sadly misused in presentday Virginia, said Marshall W. Fishwick, associate professor of American studies at Washington and Lee University, in a recent address before the Virginia Chapter of the A.I.A. "An obsession with the past," Dr. Fishwick declared, "continues, in our time, to hamper the development of new and meaningful traditions, and of an adequate modern architecture." Bemoaning "the restoration fad which has enveloped Virginia" in the wake of the Williamsburg Restoration ("We used to have the boll weevil. Now it's the Williamsburg blight"), Dr. Fishwick also pointed out that the responsibility is not alone with architects: "The architects in this state are strangled by their tradition - and by Virginians who are bold enough to hire them, but not bold enough to build as though this were the twentieth century."

THE CITY faces seven major challenges in the field of urban redevelopment this year, the Urban Land Institute believes. The seven: the problem of raising enough public funds to provide the rapidly-growing suburban areas with sufficient schools and other essential services without taxing home owners excessively; revision of zoning regulations to preserve and give positive protection to vacant land suitable for industrial use: adoption of performance standards in zoning regulations so as to specify for each industrial zone maximum permissible limits on air pollution, noise, odors, fire hazards, traffic volume, etc.; overhauling and rejuvenating of central business districts to enable downtown sections of cities to retain their appeal to shoppers and their position as the hub around which the rest of the city revolves; stimulation of sounder thinking about the number, size, design, makeup and location of neighborhood and regional shopping centers; making the best and most productive use of land from which slums are removed; and placing greater emphasis on the conservation and rehabilitation of urban districts where potential slums are in the making.

THE BELGIAN MAGAZINE Ruimlé has a go at the same general problem in an article in a recent issue, and in the words of its English summary, at once awkward and precise, puts it like this: "The big town is a detestable phenomenon because it destructs the family, its equilibrium and its rhythm of life. Urbanism doesn't want systematic destruction but organization of the city, place of human contacts, out of which civilization is made up. Which faults are to be averted and which ways that led us astray are to be avoided, so that the city of the future should not be called monotonous but human."

FIVE AMERICANS ARE HONORED IN SÃO PAULO'S

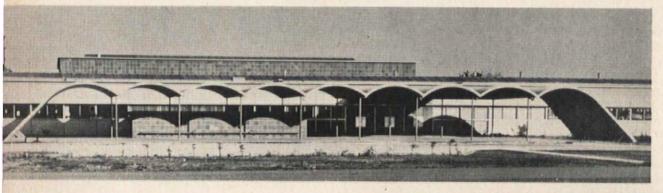


SÃO PAULO PRIZE established two years ago by São Paulo's Andrea and Virginia Matarazzo Foundation to give architecture its "Nobel Prize" went this year to Walter Gropius, U. S. A. Le Corbusier was the first winner in 1952

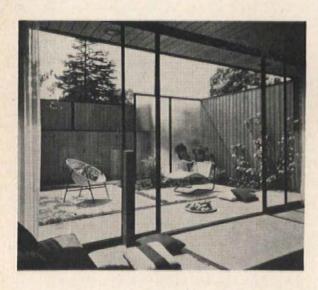
PRIZE FOR YOUNG ARCHITECTS (under 35) was given for the first time this year. The winner: Paul Rudolph, U. S. A. At right: Cabana Club (1953), Siesta Key, Fla. (ARCHITECTURAL RECORD, October 1953), one of three projects submitted



© Ezra Stoller



SCHOOLS category prize was won by Donald Bartheleme, U. S. A., for his Elementary School in West Columbia, Tex. (1952)



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INDIVIDUAL DWELLING HOUSES prize went to Philip C. Johnson, U. S. A., for Richard Hodgson Residence (1951), New Canaan, Conn. (Architectural Record, March 1953)

COLLECTIVE DWELLING HOUSES prize winner — Craig Ellwood, U. S. A., for "Courtyard Apartments" (left), Hollywood, Cal.

SECOND INTERNATIONAL ARCHITECTURE EXPOSITION

All photographs courtesy São Paulo Museum of Modern Art



PALACE OF THE NATIONS, one of two buildings designed by Brazil's Oscar Niemeyer and associates to house the art exhibition as part of exposition park for São Paulo's anniversary year



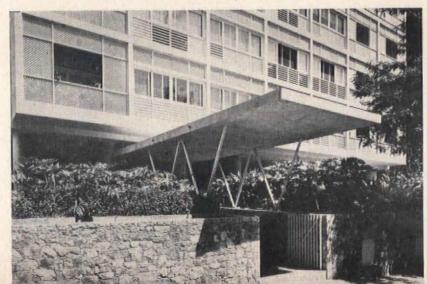
ARCHITECTURAL JURY included (left to right) Ernesto Rogers, Alvar Aalto, Gropius and (center, back to camera) José Luis Sert. Half hidden but facing camera at far right: Francisco Matarazzo Sobrinho, founder of the São Paulo Museum of Modern Art and "genie" of the Biennial

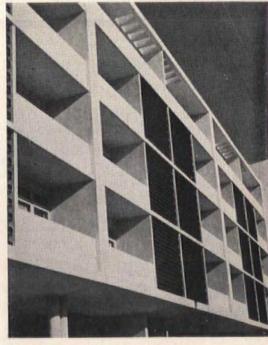
The second biennial international Exhibition of Modern Art of the Museum of Modern Art of São Paulo December 12–February 28 was the opening event of São Paulo's year-long celebration of its 400th birthday. All the world's architects were eligible to submit work to the screening committee for the architectural section; the works of 129 architects or architectural firms from 19 different countries were chosen for the exposition: they included works of 44 American offices — Wright, Mies, Sa-

arinen and Belluschi among them. Of seven prizes given in the 12 categories of the exhibition, American architects received three. In addition to the prizes there were four honorable mentions; but in four categories — buildings for religious purposes, "playhouses," public buildings, and city planning — neither prizes nor honorable mentions were given. All of the prize-winning buildings are shown on these pages. Americans also received the São Paulo Prize and the Prize for Young Architects.



YOUNG BRAZILIAN ARCHITECTS prize (jury supplement to Prize for Young Architects)—Sergio Vladimir Bernardes, for Mario Carlota Macedo Residence (1953), Rio de Janeiro





COLLECTIVE DWELLING HOUSES: honorable mentions to Jorge Machado Moreira, Brazil, for (left) Antonio Ceppas real estate project (1952), Rio, and to Ray d'Athouguia and Formosinho Sanchez, Portugal, for (above) Lisbon apartments (1952)

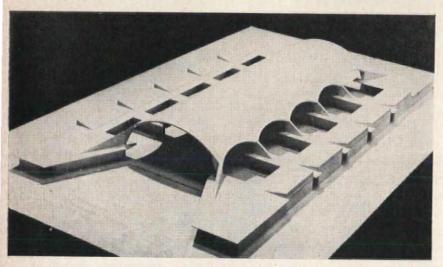
THE RECORD REPORTS

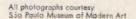
São Paulo Awards (continued)

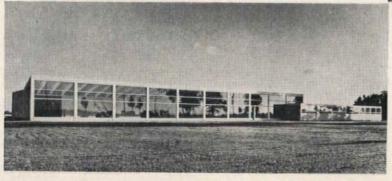
HOSPITALS prize went to Jorge Machado Moreira, Aldary Henrique Toledo and Olando Magdelena, Brazil, for Child Care Institute, University of Brazil (1953)

COMMERCIAL BUILDINGS prize to E. Gori, G. Gori, L. Ricci and L. Savioli, Italy, for (below) flower market, Pescia (1953)









ANOTHER MISCELLANEOUS prize was made available, assigned to exposition projects and given to Renzo Zavanella, Italy, for the Pensilina OM Project at Milan Fair (1952)

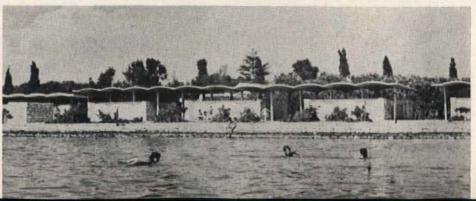


MISCELLANEOUS category prize was assigned by jury to landscape architecture and awarded to Roberto Burle Marx, Brazil, "for his entire work" (sample above)

INDUSTRIAL BUILDINGS prize to Arne Jacobsen, Denmark, for Massey-Harris Plant (1953), Copenhagen

BUILDINGS FOR SPORTING PURPOSES: honorable mention to Zvonimir Pozgay, Yugoslavia, for "sea bathing establishment," Zadar (1948)





WOOD WON'T ROT WHEN IT'S

Living fungi, which break down the substance of wood are microscopic and abundant. But they need WARMTH and DAMPNESS to develop. Dampness will also peel off paint, crumble plaster, cause iron and steel to rust.

Some insulations can promote and retain destructive condensation inside walls and other structural spaces. Warmth and vapor can flow through asphalt, paper, plaster and most building materials, including ordinary insulations. Vapor condenses when, upon striking a colder surface, the air reaches a dew-point.

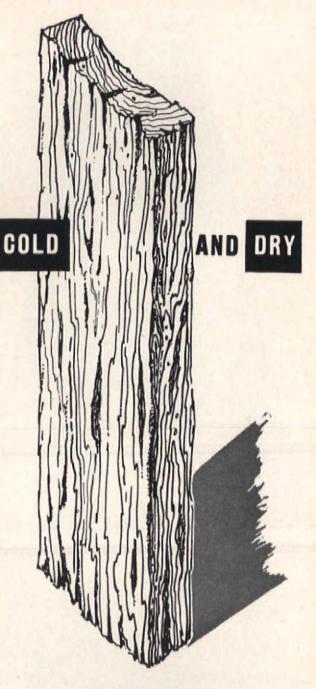
An empty space, the best insulator against heat flow by Conduction, does not prevent heat flow by Radiation and Convection. Of all heat transferred through structural spaces, about 50% to 80% is by Radiation; all but about 7% of the rest is Convection. The surfaces of multiple accordion aluminum sheets have a reflectivity for heat rays of 97%; absorptivity and emissivity of only 3%. The aluminum and fiber layers retard Convection. Conduction is slight through the preponderant low density air spaces.

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To obtain maximum uniform depth protection against heat loss and condensation formation, it is necessary to use edge-to-edge multiple aluminum, each sheet of which automatically stretches from joist to joist.

The U.S. NATIONAL BUREAU OF STANDARDS brochure: "Moisture Condensation in Building Walls," discusses vapor and heat flow, and the causes and prevention of condensation. Use the coupon. Get a copy at our expense.

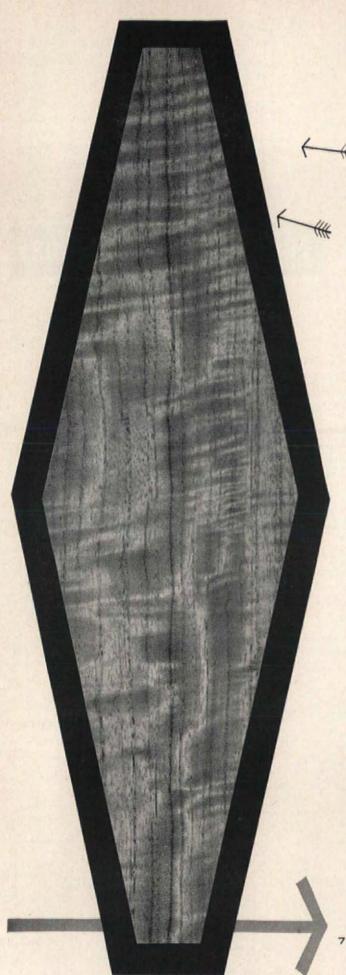


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CONTEST FOR A.I.A. PRESIDENCY DEVELOPS

THE 86TH ANNUAL CONVENTION of the American Institute of Architects at Boston June 15-19 will be enlivened by an unexpected contest for the presidency. John W. Root of Chicago has been nominated to oppose President Clair W. Ditchy of Detroit, who is completing his first one-year term. Recent precedent had made a second term almost automatic. Also in an interesting situation is Second Vice President Howard Eichenbaum of Little Rock, who has been nominated both to succeed himself in his present office without opposition - and for the office of first vice president, for which Earl T. Heidtschmidt of Los Angeles is also a candidate.

Pre-convention nominations, closed May 6, propose George Bain Cummings of Binghamton to succeed himself as secretary and, for treasurer, Leon Chatelain Jr. of Washington and Edward C. Wilson of Fort Worth. Candidates to replace the four regional directors whose terms expire are: Central States - Frank N. McNett, Grand Island, Neb.; Sierra Nevada - Donald Beach Kirby, San Francisco; South Atlantic - Herbert C. Millkey, Atlanta; and Texas - Albert S. Goleman, Houston. Election of officers and directors will take place at the convention. Additional nominations may be made from the floor.

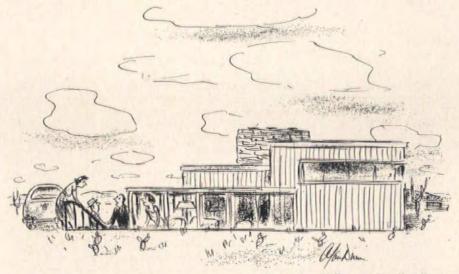
An attendance of nearly 2000 is expected at this year's convention, which will have its official headquarters in Boston's Hotel Statler. The program will include addresses by Edward Weeks, editor of *The Atlantie*, and Governor Christian A. Herter of Massachusetts;

and there will be sessions on architectural education, hospital design trends, school design trends, government impact on architecture, architectural philosophy and new developments in structure, materials, lighting and homebuilding (for participants, see Architectural Record, May 1954, page 15). One additional program note, not previously announced: Architect Percival Goodman of New York is arranging a short panel discussion on architecture and the allied arts for the convention's closing session.

Awards and honors to be conferred at the 86th convention include the Fine Arts Medal, to Sculptor Julian Hoke Harris, A.I.A., of Atlanta, and the Craftsmanship Medal to Maria Montoya Martinez, Pueblo Indian "potter of San Ildefonso." The A.I.A.'s highest award, the Gold Medal in architecture, and the Edward C. Kemper Award for service to the Institute are not being given this year. Honorary memberships will be conferred on Morton O. Withey of Madison, Wis., immediate past dean of the School of Engineering at the University of Wisconsin and for many years chairman of the Wisconsin State Board of Registration, and Dr. Richard Eugene Fuller, director of the Seattle Art Museum. Twenty-one members will be advanced to Fellowship in the Institute (ARCHITECTURAL RECORD, May 1954, page 15).

RESIGNATION ANNOUNCED

Joseph B. Mason has announced his resignation as Executive Editor of Architectural Record as of May 1.



— Drawn for the Record by Alan Dunn "Well, you see, Laura wanted a split-level house so we had to excavate—"

Construction Trends

It's still a record year. Fourmonth figures on valuation of construction contracts awarded as announced by F. W. Dodge Corporation show:

- •An eight per cent overall increase over the same period in 1953.
- A 13 per cent increase in residential construction.
- A nine per cent increase in nonresidential construction.

For details: page 338.

Effective as of the same time, Mr. Mason becomes Eastern Editor for American Builder and Home Planning Consultant for the magazine, Family Circle.

In his new capacities, Mr. Mason will continue to be identified heavily with every aspect of home planning and building, bringing to bear on his new assignments his rich previous experi-



ence with American Builder, Good Housekeeping and Architectural Record.

Joe, with the good will of his host of friends in building and in publishing, will make his new headquarters at 30 Church Street, New York 7, N. Y.

CORRECTIONS

- In the May issue of Architectural Record, Lathrop Douglass should have been credited as the architect of Wanamaker's Store-Shopping Center, Great Neck, N. Y.
- The architectural credit for the Socony-Vacuum Building project, Lexington Avenue and 42nd Street, New York City, should have read as follows: Harrison & Abramovitz, John B. Peterkin, Associated Architects.

BLIGHT PROBLEMS OF SMALLER CITIES GET MORE ATTENTION IN NEW PROGRAM

Renewal, Rehabilitation and Conservation Are the Keys to 1954 Approach to Slum Clearance and Urban Redevelopment

THE SLUM CLEARANCE and Urban Redevelopment Division of the Housing and Home Finance Agency has high hopes that new housing legislation this year will entice smaller cities into its Title I program.

This is one of the significant aspects of the 1954 housing measure, which suffered a time setback in the Senate after the FHA investigations began in mid-April. As the measure passed the House earlier, it would offer the smaller cities new opportunities for participation in Federally-aided slum clearance and urban renewal activity. James W. Follin, division director, explains that the great majority of cities under 100,000 population had been reluctant to use the previous law for developing their blighted areas because it was a bold program demanding the improvement of full block areas.

The smaller places display a natural reticence about sweeping away large areas within their boundaries. What they need, and may get under the new legislation, says Mr. Follin, is the opportunity for selective clearance of their wornout sections; the treatment of smaller areas with rehabilitation machinery available to handle other sections of these cities. He types it as a "combination program," an approach expected to bring the under-100,000 cities flocking in with their applications.

The table illustrates graphically the present limitations of the Title I spread. The number of incorporated places is taken from the 1950 census.

"Renewal" Is the Word

The new legislation firmly implants the word "renewal" in the urban planning lexicon. It turns attention to rehabilitation as well, as a preventive representing the only method of postponing the need for all-out clearance of deteriorating areas.

Mr. Follin describes rehabilitation as an attempt to minimize clearance needs. It applies largely to those areas immediately beyond the hard slum cores of American cities. Renewal, on the other hand, embraces all avenues of approach to the elimination and prevention of blight. It can encompass total clearance of projects as practiced under the Housing Act of 1949, and can include rehabilitation as well.

"Conservation" Is Another

New emphasis also is being given to a third method of preventing blighting influences from gaining a foothold. This is conservation. It applies to areas of cities still farther removed from the central slum core; the better areas farther out. It means simply the maintenance and repair of structurally sound housing units to keep them from decaying, from becoming slum potentials.

It is hoped that under terms of the new bill cities will decide to carry on rehabilitation work along with slum clearance. They have not been in a position to do this under the earlier statutes, Mr. Follin says. Under the new approach, rehabilitation is expected to be the rule where it has been the exception.

The 1954 measure would permit HHFA to advance planning money to be used in preparation for voluntary rehabilitation and code enforcement activity for the area under question. Here, again,

it is a change from the preceding law which forbade such use of planning advances. Actually, the planning process for rehabilitation is much more complicated than it is for out-and-out slum clearance, and more costly.

More Federal Aid

The key feature in the new legislation is that Federal participation in improvement of blighted areas is permitted to a greater degree. The base for Federal help in site improvements is broadened, for one thing. Municipalities presently are pretty much on their own as far as site improvements are concerned. And in most instances the advanced age of public works installations is a strong factor in holding back modernization of any given area. These projects were originally provided under lower standards than would prevail today and lack of local funds (often because of tax limitations) has forced cities to spend what funds they had farther out in newer residential sections, leaving older "inside" locations to deteriorate rapidly.

But under Title VII of the new bill, covering aid to community planning in cities of 25,000 or less, the Federal government could pay up to 50 per cent of the cost of such planning work where the aid is extended through state or regional planning agencies. These must be agencies fully authorized under state statute and cannot be simply voluntary bodies. This fits in with the additional

(Continued on page 266)

CITIES IN THE PROGRAM - POPULATION TALLY

Population Groups	All Cities (by Census)	Capital Grant Reservations	Reservation Only	Program Approval Outstanding
1,000,000 and over	5	5	0	5
500,000-999,999	13	12	0	12
250,000-499,999	23	14	2	12
100,000-249,999	65	38	4	34
50,000- 99,999	126	40	9	31
25,000- 49,999	249	32	5	27
10,000- 24,999	752	44	10	34
Under 10,000	15,885	22	10	12
TOTALS	17,118	207	40	167

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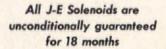


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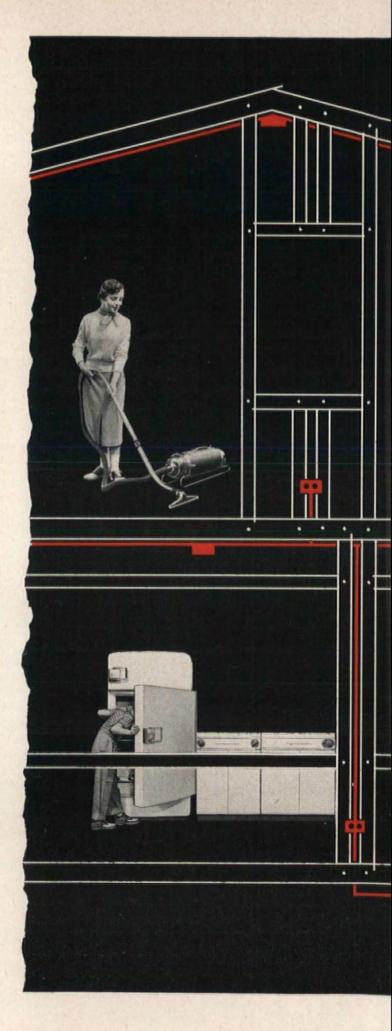
You'll want to look ahead and be ready for the big house wiring demands that are bound to be called for by color TV and room air conditioners.

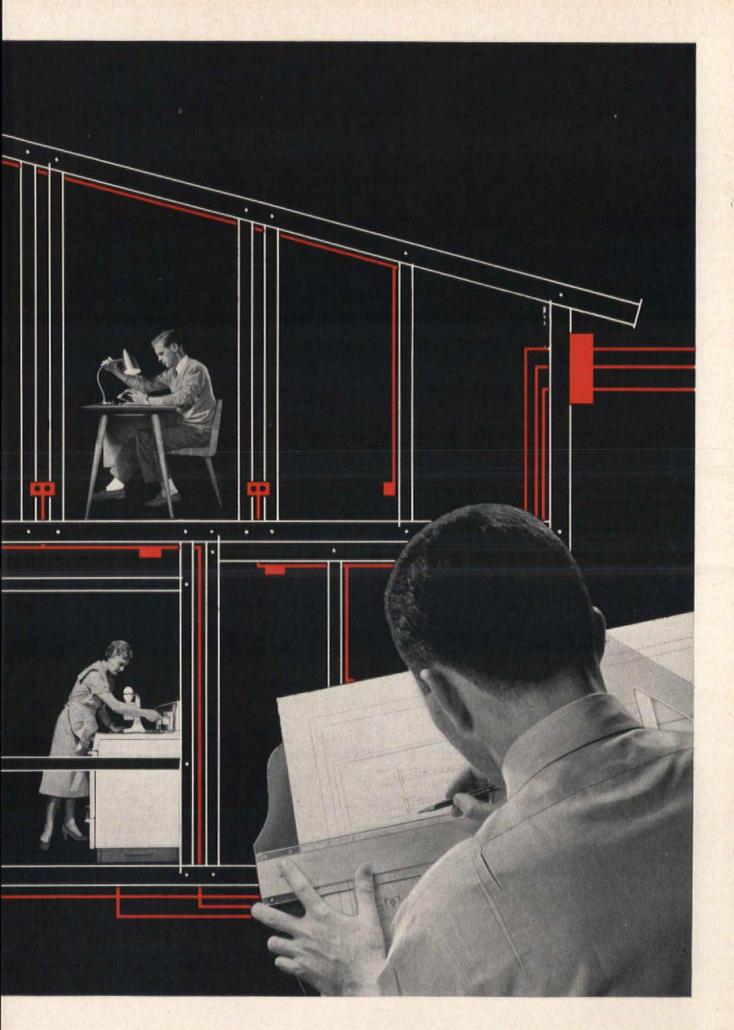
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"INTEGRATION" MAY SPUR SCHOOL CONSTRUCTION

More school construction in the South rather than less appeared to be the long-range outlook following last month's historic decision by the Supreme Court that "in the field of public education the doctrine of 'separate but equal' has no place" and "separate educational facilities are inherently unequal." Most educators seemed to agree that the process of "integration" in the District of Columbia and the 17 states which have had compulsory segregation and the four states which have had "local option" segregation would spur the replacement of outmoded and inadequate facilities - a process which has already been vastly accelerated over the past ten years.

The city school board of Charlotte, N. C., was among the first to direct its superintendent of schools to explore ways and means toward integration. This is what the superintendent, Elmer H. Garinger, has to say about the impact of the decision on school building:

"So far as we can see, the immediate effect may be to stimulate construction in the cities. In most of our urban communities the population is concentrated in community groups. Those centers of population have their own school units in most cases. Wherever they are missing, the tendency should be to supply schools for them.

"In the rural communities the problem of integrating the two races will be somewhat more difficult. Perhaps in those counties where consolidation has not taken place the change will be less difficult. Our opinion is that we shall see a tendency for the people in the rural sections to congregate in villages where they can provide a school according to their wishes. Perhaps we may see in the South a shift to the type of rural life which has been prevalent in Europe and in the Orient all through history.

"This shift of population into more or less homogeneous groups will involve more building rather than less. In a short time we should not be surprised to see an increase in school building construction."

K. P. Walker, Jackson, Miss., superintendent of schools, sees the possibility of an acceleration of the trend of recent years for Mississippi's colored population to move to urban centers and to other states. Mr. Walker suggests this trend might now be expected especially in areas of the state which are slow to provide desperately-needed new facilities.

In the short term, pending the presentation next fall by the affected states of briefs suggesting methods of implementation as invited by the Court's decision, some delays and difficulties in construction programs are probably inevitable. Gov. James Byrnes of South Carolina immediately ordered suspension of all school building programs where contracts had not been let; and there may be other moratoriums before the various states can work out their own approaches to the new era.

The consensus is pretty well expressed in a statement by N. L. Engelhardt Jr., of Engelhardt, Engelhardt and Leggett, New York educational consultants:

"Of course we cannot look for any overnight solution of the problems posed by this decision. Our main caution at the moment should be to continue the building of school facilities meeting immediate and impending enrollment increases to assure that there is no curtailment of educational opportunities for any American child and no disservice to any well-trained American teacher while the issues are being resolved."

"PEACEFUL ATOM" HAILED AS TRANE DEDICATES LAB

Nonmilitary uses of atomic energy will be among the fields explored in the new Research and Testing Laboratory of the Trane Company, dedicated last month at LaCrosse, Wis. The "House of Weather Magic" was designed for research and product development in air conditioning, heating, ventilating and heat transfer; it has facilities for reproduction of climatic conditions from the Arctic to the Equator. Magney, Tusler and Setter were the architects.

The main speaker at the dedication press preview was Robert LeBaron, assistant to the Secretary of Defense on atomic energy matters and chairman of the Military Liaison Committee to the Atomic Energy Commission, who took the occasion to float what appeared to be an Administration trial balloon; a proposal for a peacetime "Manhattan Project" which Mr. LeBaron said could cut in half the time required to learn enough about atomic power plants to build them on a commercial basis. "If we could only recreate the Manhattan



Engineer District philosophy and the unique devotion for the military atom in a campaign for the peaceful atom," said Mr. LeBaron, "we could move into this great new era in five years instead of ten." The initial cost of such a project, Mr. LeBaron estimated later in answer to a question, would be twice the present Atomic Energy Commission reactor appropriation — something around \$180 millions.

Decentralization of industry and, indeed, of society in general is one major effect that can be expected from "the peaceful atom," Mr. LeBaron believes. "The advent of commercial atomic power will be a great force for decentralization of industry," he said. "It has within itself the direct antidote for the destructive forces of the military atom. . . .

"Decentralized power of the peaceful atom provides a new opportunity to decentralize our social pattern of living. . . . If the evil genie of the military atom can be made to give a big push toward decentralization and suburban living, perhaps the impact on our minds of the horrors of atomic weapons will have served a useful purpose. . . ."

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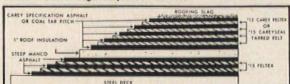
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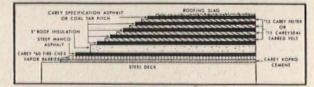


At the Carey Research Laboratories, this fire test of a conventionalvapor seal, with insulation and built-up roofing over steel deck, showed the dripping of asphalt from the vapor seal igniting as 1800° of heat builds up under the roof construction and melted bitumen flows through the joints in the deck.



Cross-section view of conventional-type 2-ply asphalt vapor barrier, insulation and roof.

Fire test of conventional-type built-up roof with new Fire-Chex 1-ply Vapor Barrier over the steel deck (see diagram). Here you'll note a complete absence of any dripping material and only slight burning of gases. Practically no fuel is contributed to the fire by vapor barrier.



Cross-section view of Fire-Chex type 1-ply asbestos-plastic vapor barrier, insulation and roof.

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In Carey Fire-Chex, you have a vapor barrier that does not contribute to fire or cause it to spread. Even when installed over a standard steel deck that's heated red hot, Fire-Chex remains intact. Does not release melting asphalt and excessive

And here's more good news. Fire-Chex costs only a few cents more per square applied than hazardous, conventional-type vapor barriers. You can specify its priceless protection within your client's budget.

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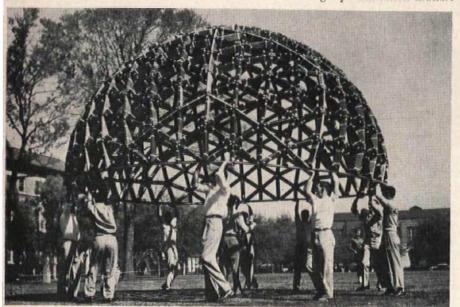
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THE RECORD REPORTS

Tulane students assembling 18-ft model dome Students raise completed model; a plastic "bathing cap" will enclose structure







Col. Henry C. Lane, of the Marines, and R. Buckminster Fuller

NEW "SITUATION" FOR THE MARINES: FULLER'S DOMES MAY SHELTER THEM

Bucky fuller's geodesic domes may some day be going to war. This month, at Quantico, Va., the U. S. Marine Corps will hold a series of demonstration tests of a number of the lightweight structures — for men and matériel — developed in special projects conducted at three U. S. architectural schools under Mr. Fuller's close personal supervision.

To meet a pressing need for shelters quick and easy to transport, assemble and dismount, Col. Henry C. Lane, Marines head of aviation logistics, has been directing the Marines' study of a plan to airlift dome shelters, pre-assembled on aircraft carriers or in a rear supply area, to the battlefields. Mr. Fuller's geodesic structure, adaptable with few variations for use as hanger, barracks, motor transport shelter or office, is being considered as possible replacement for the present three-phase housing procedure of erecting tents, improving tents and, finally, building the more permanent Quonsets.

In creating these lightweight structures for the Marines, Mr. Fuller has found a new context for his long effort

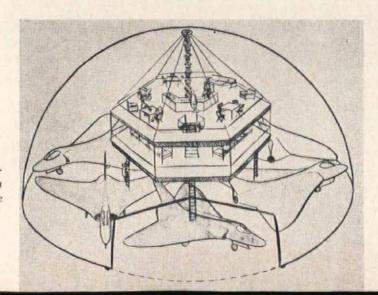
Sketch by North Carolina students shows possible use of dome as hangar which turns on wheels to let planes out. Living quarters above

to update the ancient principle of the dome by taking advantage of the most recent advances in the increase of tensile strength and by applying an entirely new structural geometry. A sphere (or hemisphere) encloses the most space with the least surface and is most resistant to external pressures. Since the triangle is non-distortable and the most indestructible geometric element, Mr. Fuller uses it as the integral part of the geometric frame.

Students Are Research Staff

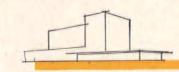
Architectural students the country over have worked on Fuller projects in the last several years; and it was to architectural students that Mr. Fuller turned to "staff" his research for the Marines. Tulane University, Massachusetts Institute of Technology and North Carolina State College all participated; the photographs on these pages show the progress of the Tulane project.

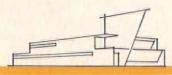
At Tulane, 23 fifth-year architecture students under Dean John E. Dinwiddie followed a tightly-scheduled four-week program similar to programs followed by Fuller students at other universities across the nation. The first week consisted of "marathon" lectures by Mr. Fuller. Then came a week of "tooling" (Continued on page 316)



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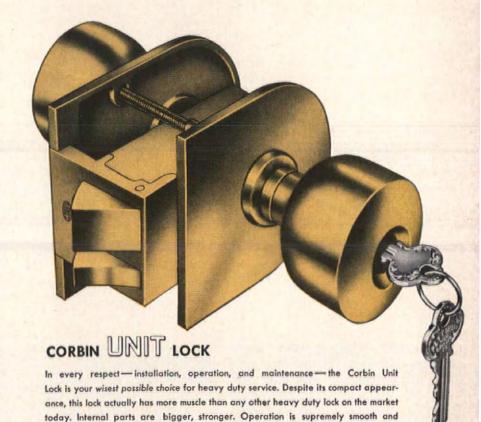


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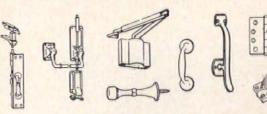
quiet; and it can be installed faster and easier than any other type of lock. Take a long, searching look at the Corbin Unit Lock come next specification time. You'll be



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TEN ARCHITECTS ACROSS COUNTRY DESIGN TREND HOUSES

WITH THE DECLARED AIM of winning friends and influencing people for good house design, three British Columbia lumber associations called in ten architects from various parts of the country to design "Trend Houses." The associations, which include the B. C. Lumber Manufacturers Association, the Plywood Manufacturers Association of B. C. and the Consolidated Red Cedar Shingle Association of B.C., hope to set a standard of design for custom built houses which will eventually affect the design of houses built speculatively. They hope also to increase the domestic consumption of Western lumber, now trailing the consumption of Eastern woods.

After appointing the architects, the associations found buyers for each house before planning was started. Subsidies, varying from \$1000 to \$3000, were awarded to the owners. Instructions to the architects were to design a house appropriate to the owner and to the locale, and to develop design ideas slightly in advance of existing home building techniques in the area.

Ideas coming out of the Trend Houses, as observed by the associations, were: multi-sided house for "spacious feeling"; open-wall areas and sloping ceilings; built-in furniture and storage cabinets; random-width, tongue-and-groove siding; and open-beam ceiling construction.

(Continued on page 30)



REGINA Stock, Ramsay & Associates, architects



EDMONTON

Dewar, Stevenson & Stanley, architects



MONTREAL
Philip F. Goodfellow, architect



CALGARY
Rule, Wynn and Rule, architects



VICTORIA

John A. DiCastri, architect



TORONTO
Fleury, Arthur & Calvert, architects



HALIFAX
Davison, Duffus, Romans & Davis, architects

WINNIPEG Smith, Carter & Katelnikoff, architects

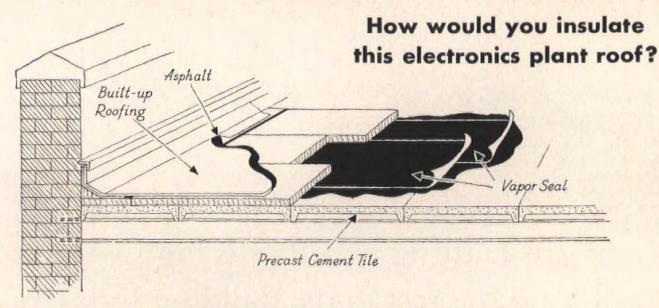


LONDON
Philip Carter Johnson, architect



VANCOUVER
Davison and Porter, architects





PROBLEM: An electronic equipment manufacturer's new plant is being designed for a -10° F. outside temperature. The building will be air conditioned and a 75° temperature and 50% relative humidity maintained. The roof deck will be 15%" precast cement tile. What type and how much roof insulation would you specify?

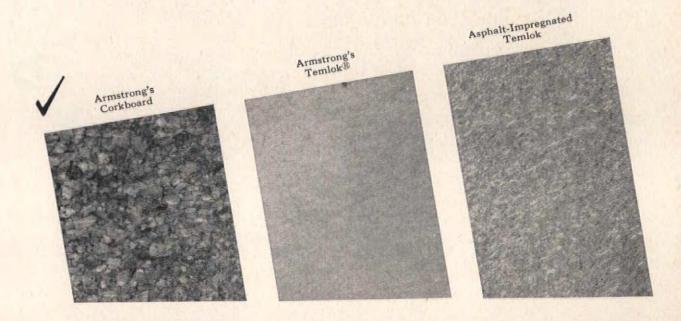
SOLUTION: Considering the harmful effect moisture condensation might have on delicate electrical parts, proper roof insulation is extra important here. An efficient, dependable material is required, and Armstrong's Corkboard is a natural selection.

Although 1" of corkboard is enough to prevent condensation, many architects would specify 1½". This extra thickness would give the entire roof construction a U-factor of 0.14 and would promote more economical operation of the air-conditioning system.

Corkboard's unique cellular structure effectively seals out moisture, as well as provides an excellent barrier to the passage of heat. Long life and rugged durability under severe conditions are other advantages of this material. Many corkboard installations are still operating efficiently after 40 years of service.

Where cost is primary, or service conditions are less demanding, you may want to specify Armstrong's Temlok. This efficient, low-cost fiberboard is available either regular or asphalt-impregnated. For full information on any of these roof insulations, contact your Armstrong office or write Armstrong Cork Company, 3806 Rock Street, Lancaster, Pa.

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THE RECORD REPORTS

CANADA

(Continued from page 26)

R.A.I.C. ELECTS TWELVE TO COLLEGE OF FELLOWS

In advance of its 47th Annual Assembly, held May 7-11 in Montreal, the Royal Architectural Institute of Canada announced the election of 12



Unique Beauty



Architect: A. Quincy Jones, Los Angeles, California

Cabot's Stain Wax

For traditional or contemporary design, the unique finish achieved with Cabot's Stain Wax is not only beautiful, but amazingly economical. A rich penetrating stain with a soft, lustrous wax finish, Cabot's Stain Wax is simple to apply, easy to maintain.



Architects: Lemmon and Freeth, Honolulu

variety of contemporary colors

Cabot's Stain Wax brings out the natural beauty of wood grain and texture . . . gives interesting variety to interiors. Available in modern blond shades . . . Glacier Blue, Seashore Gray, Ivory, White, or Natural. Also traditional shades . . . Maple, Mahogany, Walnut, Redwood. Can be tinted with colors in oil.

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cabot's stain wax

An \$8 million apartment project. to be started in Toronto this year. will contain 800 suites in the three 14-story buildings, and will provide underground parking for about 500 cars. Architect is Peter Caspari

members as Fellows of the Institute. The new Fellows are: Gordon Sinclair Adamson, Toronto; W. Wallace Alward, St. John, N. B.; Henry Kenneth Black, Regina; John Bland, Montreal; Arthur Hunter Eadie, Toronto; George E. de Varennes, Montreal; Maxwell C. Dewar, Edmonton; John Stormont Porter, Vancouver; Earle L. Sheppard, Toronto; Jean Baptiste Soucy, Sillery, Quebec; Stan E. Storey, Regina; and Peter Muschamp Thornton, Vancouver.

Award to Landscape Architect

The 1954 Allied Arts Medal, announced the R.A.I.C., has been awarded to Howard Dunnington Grubb, a landscape architect. Mr. Grubb has practiced in Toronto for 30 years, and has been a lecturer in landscape architecture at the University of Toronto.

Fellows Scholarship Awarded

C. Ross Anderson, of Toronto, has received the institute's College of Fellows Scholarship for 1954. The scholarship is awarded every other year to a graduate of a Canadian architectural school. Mr. Anderson, who graduated in 1951 from the University of Toronto's School of Architecture, will apply the scholarship to a study of the architectural development of the St. Lawrence and Great Lakes region.

PLANNING SCHOLARSHIPS TO BE AWARDED BY CMHC

Twelve fellowships and three bursaries will be awarded to students of community planning, housing and urban de-(Continued on page 32)



Built-in copper gutters: how to design and install them

Architects frequently prefer a gutter of built-in design so that the attractive architectural eave line of the house will not be hidden. Furthermore, a built-in gutter will handle more water and is not so easily damaged by sliding snow, ladders, etc.

A copper gutter of this type presents no problem to the experienced sheet metal craftsman when accepted standards of design and installation methods are followed. Copper should be of a gage corresponding to the scale of the work. Examples: a gutter like that shown on the drawing with a bottom 8" wide—a size common on houses—may be of 16 oz. copper. A bottom 12" wide calls for 20 oz. copper. . . . 18", 24 oz.

copper . . . and anything above, 32 oz. Copper should be cornice temper. Gutters must have free sliding edges and expansion joints midway between the downspouts.

If these points are kept in mind when you design or install this type of copper gutter you will be assured of a long-lasting, trouble-free installation.



Do you have the FREE Anaconda file of drawings? Each drawing shows a new or improved way to apply sheet copper. Each is printed on a separate 8½ x 11 page, handy for quick reference filing. This series may be obtained absolutely FREE by writing for Portfolio S to The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

For sheet and roll copper an



Distributor will serve you best

THE RECORD REPORTS

CANADA (Continued from page 30)

velopment, the Central Mortgage & Housing Corporation has announced. These will be effective in the academic year 1954–55.

Two senior fellowships are offered for persons with professional and practical experience in the field of housing and residential development. These awards are intended to aid those who have already shown capacity for original work. Candidates for these awards must be prepared to devote their full time to such work for a period of at least eight months.

The other 10 scholarships, each for \$1200, are offered for the study of community planning at the Universities of McGill, Toronto, Manitoba or British Columbia, and are open to graduates in architecture, civil engineering or the social sciences. Candidates are required to meet the academic qualifications of

the university to which application is made and to be prepared to undertake a prescribed course of study.

Three bursaries in the amount of \$800 each are offered to graduate students who may be specializing in the study of housing from the design, social or financial point of view.

WINNIPEG MEETING HELD BY MANITOBA ARCHITECTS

At their annual meeting, recently held in Winnipeg, the Manitoba Association of Architects elected to office: E. J. Smith, president; H. H. G. Moody, vice-president; C. N. Blankstein, D. H. Carter, P. M. Casey, A. J. Donahue, K. R. D. Pratt, E. G. Simpson, and E. W. Thrift, councillors.

Architect Harold Spitznagel, of Sioux Falls, S. Dak., was the guest speaker at the banquet. In his address he defined architecture as "a contemporary expression of human needs in terms of contemporary knowledge," and said that he felt commercial building had gone ahead of domestic building in this respect.

Members also heard addresses from Professor John A. Russell, director of the School of Architecture at the University of Manitoba, and from R. Schofield Morris, president of the Royal Architectural Institute of Canada. A seminar on school design was led by Dr. H. D. White.

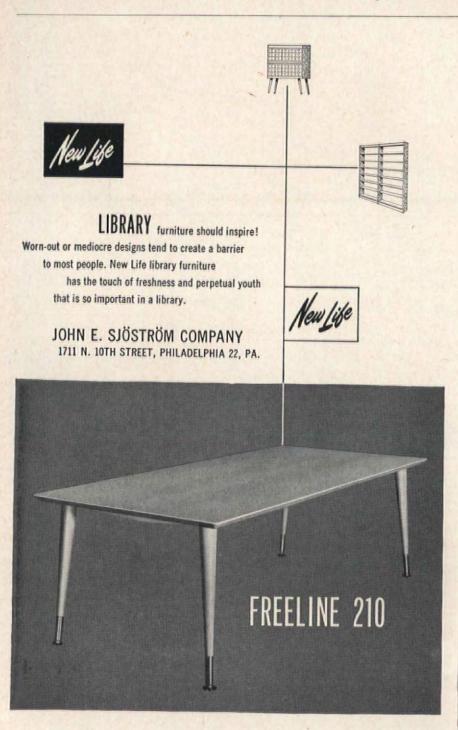
FIRST QUARTER AWARDS SHOW 17% BUILDING DROP

According to MacLean Building Reports, building contract awards for the first three months of 1954 fell off 17 per cent from a comparable period in 1953.

(Continued on page 36)



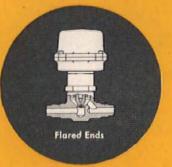
In Toronto this office and factory were recently completed for Westeel Ltd., manufacturers of steel building products. Shore & Moffat of Toronto were the architects



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First with duo-seal **PACKLESS CONTROL VALVES**







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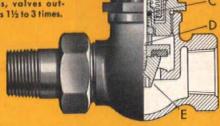
More ACCURATE Control with Powers PACKLESS Valves

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- B) Bronze Bellows, Primary Seal
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 D) Polished Stainless Steel

- E) Characterized Throttling Nut





o Packing Maintenance. No Leakage of Water or Steam. No Loss of Vacuum.

To insure getting a temperature control system with the best control valves made for convectors, unit air conditioners, unit ventilators, radiators, panel heating and cooling coils—specify or install POWERS pneumatic control.

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the car and hoistway doors up to shoulder height. Naturally, it is invisible to the passengers. (See phantom drawing at the left.)

No time is lost. The doors close promptly after each stop. If the electronic zone detects a person's presence, the doors politely reverse—even before they can touch the passenger. But if there is no chance of passenger interference, the doors continue to close without unnecessary car delay.

This zone of detection politely helps to prevent passengers from delaying the elevator, too. If a talkative passenger lingers overlong in the doorway, a buzzer sounds and the doors slowly, firmly—but politely nudge the passenger out of the doorway so the car can proceed on its way.

And most important from a building manager's viewpoint, this zone of detection is on duty all of the time the elevators are in opera-

tion. Its electronic reflexes never tire or slow down. It is a most vital point of AUTOTRONIC elevatoring. Its unmatched superiority makes possible uniformly fast, regular service in Otis automatic passenger elevators.



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aluminum fabricators can now use 66S to reduce material costs, cut weight without sacrificing strength, and lower fabricating costs. You can reduce your costs at Harvey Aluminum . . . tooling service charges are nominal, and Harvey prepays the freight to your dock. Send

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The high yield strength of 66S permits you to reduce the cross section of structural members. This means real dollar savings in material costs. The extrusion at right was made of 61S. By using the high yield strength of 66S its cross section is reduced as shown. The saving in material amounts to approximately 26%. Saving in cost, 21%.

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indicates the saving in material made

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THE RECORD REPORTS

CANADA

(Continued from page 32)

The bulk of the decrease occurred in March, and all types of building, with the exception of housing construction, shared in the decline.

The figures, suggest the reports, reflect a substantial drop in engineering construction, which was down almost \$39 million from 1953. Business building showed a drop of \$27.7 million, while industrial construction decreased about \$3.9 million. Residential figures were up by about \$12.3 million.

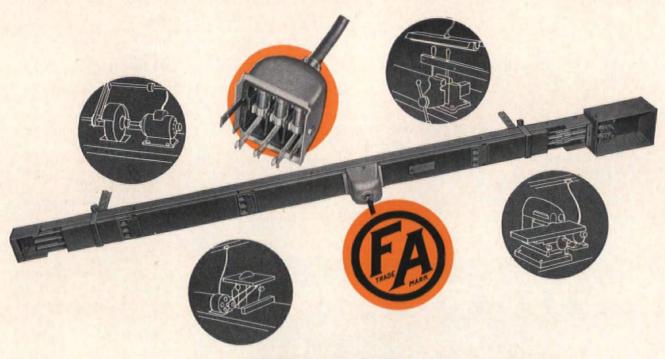
NEWS NOTES

The London Chapter of the Ontario Association of Architects recently elected to office: J. G. Magee, president; J. D. McCollough, vice president; R. E. Murphy, secretary; and David C. Stevens, treasurer. . . . A house is longer abuilding this year than it was in 1953, according to the Dominion Bureau of Statistics; average time of completion of a house in January 1954 was 7.6 months as compared to the 6.3 months required in the same month of 1953. . . . The cornerstone of the new headquarters building of the Ontario Association of Architects was recently laid in Toronto, with president Alvin R. Prack officiating; John B. Parkin Associates are the architects. . . . The O.A.A.'s Craftsmanship Award this year went to Eugene Turney, 21, a steam fitting apprentice with Howard Smith Paper Mills Ltd.

(More news on page 38)



This house was designed for J. L. Appel by architect E. C. S. Cox; it is located in Toronto



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NOW AVAILABLE IN 100 AMPERE CAPACITY

with plug-in outlets on 12-inch centers

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Approved by the Underwriters' Laboratories, Inc., for label service, the new Midget @ POWERPLUGIN is only $3\frac{1}{2}$ inches wide and 2 inches deep in size. It is available in standard 5 and 10 foot lengths and can

be arranged to fit almost any requirement. While standard sections have plug in outlets every twelve inches, additional outlets and special lengths are available on specific order.

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AIR FORCE EXPLAINS WHY STANDARD PLANS WON'T DO

A Congressional query about "heavy expenditures" for architectural work in Wherry Act military housing has produced what amounts to an Air Force essay on the function of the architect.

Rep. Harry R. Sheppard (D-Calif.) raised the question of standard plans at a session of the Air Force appropriations subcommittee of the House. By way of

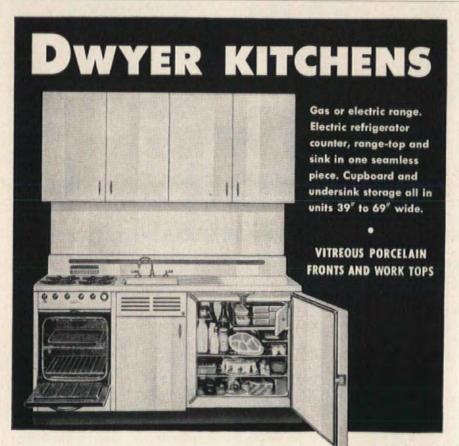
reply, Air Force Undersecretary James H. Douglas promised that his staff would try "to avoid the duplication of design work that we find existing." Mr. Douglas also made the following points on this question:

(1) Since individual house plans are only a small percentage of the cost of designing a Wherry project, the use of standard plans is not practical. The major portion of design costs involves surveying of the housing site to provide topography of existing conditions, design of site layout, including road and driveway system, water, sewer, gas and electrical distribution systems and design of proper grading, storm sewerage and landscaping and planting. All of these items are of necessity different at each base.

- (2) Special house designs are required to provide proper orientation on the housing site, to take advantage of sun and prevailing breezes.
- (3) Since the amount of acreage available is different at all sites, houses have to be specially designed to fit in properly with the ground available.
- (4) Topography varies at all sites, thus requiring different foundation designs.
- (5) Costs in different localities will dictate the size of houses and amenities to be provided.
- (6) Appearance of houses should be varied to adhere to existing base or community designs.
- (7) Heating, ventilating and insulation vary at different bases,
- (8) Design costs are not borne by the government, as the advertisement for proposals requires the successful sponsor to reimburse the government at the time of closing of the project the amount expended by the government for architectural and engineering services.
- (9) The plans used for the George Air Force Base (Victorville, Calif.) project were not the property of the Air Force, but the property of the sponsor, and therefore could not be used for other projects even if this method had been practiced. (Rep. Sheppard had noted that the Victorville project was a sort of guinea pig for other Wherry Act housing and being an early program project had worked some of the "bugs" out of this type of planning. He wondered why these plans could not have been used as prototypes for other Wherry jobs to be built under similar climatic conditions and for identical use.)

"REAL" FHA PROBE AHEAD: FOCUS NOW ON NEW BILL

The first phase of the Senate Banking Committee's investigation of the operation of the Federal Housing Administration's rental housing (Section 608) and home improvement and repair loan (Continued on page 286)



For New Apartments

Dwyer Kitchens save room for more spacious living areas. Dwyer Kitchens enjoy 28year record for durability and trouble-free operation in rental properties.

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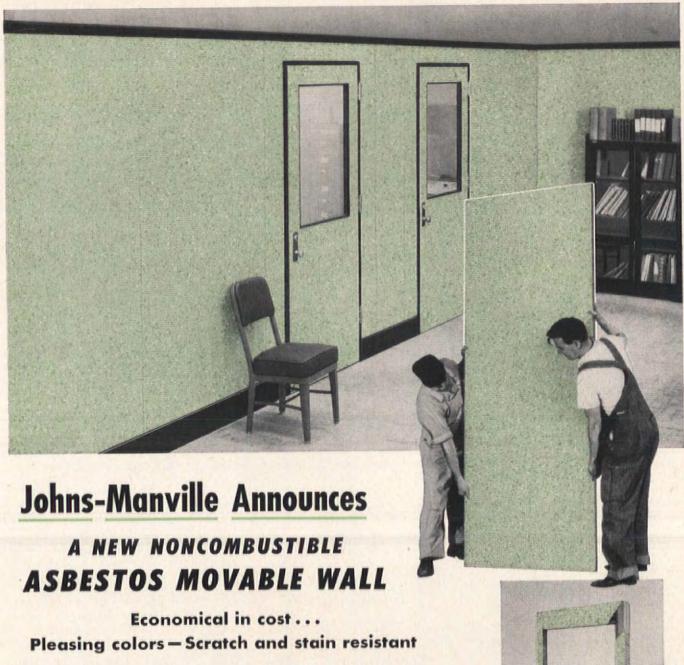
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are modestly priced. They are noncombustible. They have a textured, stippled finish in restful colors. They reduce maintenance and re-location costs to a new low.

Class A Movable Walls consist of a noncombustible all-mineral core with sturdy asbestos-cement surfaces. The finish is a tough, hard film many times thicker than on the usual movable partition. It is mar and scratch resistant . . . rejects stain and soil . . . can be easily washed and even scrubbed, if necessary. If damaged, it can be touched up inexpensively to look like new . . . and, unlike other types of factoryfinished partitions, can be repainted with ordinary paint.

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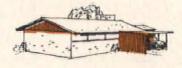
Texture One-Eleven combines high style with the economy and dependability of industry quality grade-trademarked Exterior fir plywood (EXT-DFPA®), manufactured with 100% waterproof glue. Comes packaged in 8' and 10' lengths in two widths and groove patterns. Get the full story from your regular supplier or write Douglas Fir Plywood Association, Tacoma 2, Washington.



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THE RECORD REPORTS

CONSTRUCTION COST INDEXES

Labor and Materials

U. S. 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	Resid Brick	lential Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commer Factory Brick and Concr.		Resid Brick	lential Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commer Factory Brick and Concr.	
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
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
1950	256.2	254.5	249.5	251.5	248.0	194.3	196.2	185.4	183.7	185.0
1951	273.2	271.3	263.7	265.2	262.2	212.8	214.6	204.2	202.8	205.0
1952	278.2	274.8	271.9	274.9	271.8	218.8	221.0	212.8	210.1	214.3
1953	281.3	277.2	281.0	286.0	282.0	223.3	224.6	221.3	221.8	223.0
Jan. 1954	285.2	279.5	292.2	298.2	294.8	221.8	221.9	224.1	225.4	225.2
Feb. 1954	284.1	278.2	291.6	297.7	294.2	220.0	219.7	223.3	224.8	224.4
Mar. 1954	284.2	278.4	291.4	297.5	294.1	219.8	219.5	223.1	224.7	224.8
Mar. 1954	130,1	% 127.5	increase over 1 123.0	939 123.0	126.1	154.7	% 164.1	increase over 19 134.6	130.7	137.4

ST. LOUIS

SAN FRANCISCO

Mar. 1954	137.8	139.3	ncrease over 119.5	1939	120.5	141.0	% in 148.0	crease over 1 122.6	120.6	126.5
Mar. 1954	262.1	256.0	260,5	269.8	262.4	254.5	246.3	261.3	268.9	263.9
Feb. 1954	262.0	255.8	260.7	270.0	262.5	254.0	245.6	261.5	269.0	263.9
Jan. 1954	263.8	257.0	261.5	270.6	263.3	255.8	247.8	262.3	269.6	264.7
1953	263.4	256.4	259.0	267.6	259.2	255.2	257.2	256.6	261.6	259.7
1952	259.1	253.2	249.7	255.0	249.6	250.2	245.0	245.6	248.7	249.6
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1	243.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4

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 = 110index 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.

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

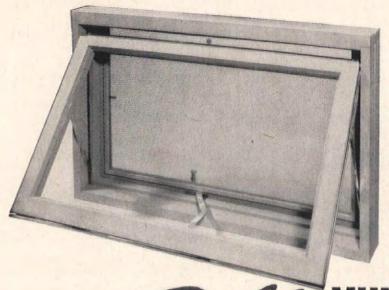
Conversely: costs in B are approximately 14 per cent lower than in A.

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

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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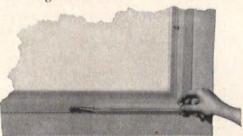
Pella MULTI-PURPOSE WINDOWS available with

New Underscreen operator

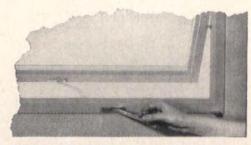
Now, in the low-cost awning window field, an extra sales feature, instantly recognized and appreciated by prospects. Pella's UNDERSCREEN OPERATOR,

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IF VITRUVIUS SHOULD SURVEY ARCHITECTURE TODAY—

Editorial Note: One of the significant recent events in the architectural world is the issuance of the Final Report of the 1950 Survey Commission. Undertaken by the American Institute of Architects with a grant from the Carnegie Foundation, the 1950 Survey set out to analyze the entire profession, from student through seasoned practitioner, A.I.A. and non-A.I.A. members alike. Its preliminary report, issued in 1951, contained statistics which seemed to promise much. Now the Final Report, just published, is at hand. Architectural Record, aware of the Report's importance to the profession whatever its strengths and weaknesses, here presents not only a review of it by one of America's distinguished architects and educators, but also individual evaluations of the Commission's work by several Commission members.

MEMBERS OF THE SURVEY COMMISSION

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Walter A. Taylor, Washington, D. C. ex officio Director — Dept. of Education and Research, A.I.A. Andrew Fraser, Survey Consultant Washington, D. C.

The Architect at Mid-Century: Volume I—Evolution and Achievement. Ed. by Turpin C. Bannister. 7 by 10 in., 560 pp. \$8.75; Volume II—Conversations Across the Nation. Ed. by Francis R. Bellamy. 7 by 10 in., 272 pp. \$5.00. Reinhold Publishing Corp. (330 W. 42 St., New York, N. Y.) 1954. \$12.00 for set.

by BUFORD LINDSAY PICKENS

Dean of Architecture Washington University St. Louis, Mo.

When Vitruvius wrote his remarkable 2000-word statement on the training of architects, he defined certain basic principles which are as valid today as they were in the first century B.C. His primary concern with quality causes one to question our increasing reliance upon the quantitative statistical survey techniques for the solution to our current professional problems. Within the creative fields, how much do statistics add up and how much do they cancel out? Does a cross section of opinion lead to progress in either art or science? How valuable to a non-reading profession is a two-volume report of 300,000 words?

In order to answer these questions before 1960 the long awaited Final Report of the 1950 Survey Commission deserves to be widely and carefully read. Its authors have seriously attempted to apply the statistical method of analysis to our loose-jointed and rapidly growing profession. In depth, in breadth, and in pages of thickness the Final Report goes far beyond the scope of the two previous surveys made

in 1930 and 1940. In all these dimensions it should stack up impressively with similar statistical studies of engineers, chemists, nurses, and lawyers. The first ten of the twelve chapters in Volume I fill in the background and provide discussion intended to support a series of 43 Specific Recommendations and a statement of General Conclusions. These are neatly arranged as the eleventh chapter, giving the light reader a predigested capsule. Appropriate references guide the more serious reader back to pertinent paragraphs in the body of the Report. Only six of the first ten chapters relate directly to the Recommendations. One concludes that the other four demonstrate the editor's perfectionist attitude. For him this work must truly have been a labor of love produced with considerable personal sacrifice.

In reading through the text one gets the notion that earlier drafts may have been more succinct and positive. It seems probable that during the discussions later drafts have been so modified that the editor did well to salvage as much as he did. There is little evidence to show that the authors of Volume I considered the suggestions put forward in Volume II. Indeed, an impartial lay reader might easily get the impression from Volume I that the A.I.A. is a minority engaged in the same kind of regimenting, "collectivist" activity that is set up as a target in Volume II. While protesting against the "laissez faire" professional attitude, the Commission Report seems to point in the

direction of greater centralized organization and authority in registration and education rather than to encourage a diversity of progressive experiments. The latter course would seem to be more consistent with the regional make-up of the country, the profession, and in line with the suggestions from "Conversations Across the Nation."

"In order to escape the hazards of opinion and preconceptions," the Commission has limited its considerations for the most part to its own statistical survey material and the historical background related to it. Ideas which might have suggested a broad re-examination of the profession and architectural education but which did not emanate from the Commission itself were either summarily dismissed or consigned to the footnotes. Some evidence suggests that the 13-man Commission indulged in a certain amount of "horse trading" in the moderation of all points of view. Only one Recommendation (No. 39) out of the 43 contains a minority report. In the final draft the qualifying and limiting provisions add undesirable roughage which deflects the glimmers of light which occasionally filter through a text overloaded with statistics.

Frequently the Commission's pious hopes are presented as accomplished facts. For example, in the discussion of candidate training:

"While it is no doubt unreasonable to expect that offices can ever satisfy educational criteria completely, several approaches to the problem do promise

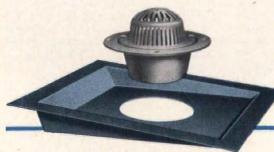
(Continued on page 46)

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REQUIRED READING

(Continued from page 44)

improvement. First is the general recognition by the profession that it must strive for heightened competence among its members. Second, this in turn has led the individual practitioners to realize more fully their responsibilities in the training of candidates, to think more often in terms of educational patterns."

Apparently even the Commission could not swallow this one, for the Report continues:

"Nevertheless, the Commission firmly believes that much remains to be done in ordering candidate training to secure more effective use of the efforts of trainees and practitioners. Indeed, the Commission considers this problem to be one of the most urgent confronting the profession today."

This is a typical example of one paragraph cancelling out another.

In contrast to the conservative tone of Volume I, "Conversations Across the Nation," although uneven, is lively and interesting, partly because the panel discussions are uncensored opinions of selected individuals and partly because non-architects speak up and make value judgments about architects and their place in the scheme of things.

Ouestion 1: "What kind of a society

do you foresee in the future, collectivist or democratic free enterprise?" did not always lead up, as it apparently intended, to Question No. 2: "How will the social organization of the United States of the future affect the physical form of buildings and the growth of cities, towns and rural areas?" Both of these questions invite crystal ball gazing and seem to be based upon assumptions which the panel members were not quite ready to accept. The resulting bull sessions were stimulating only to the degree in which the participants contributed creative ideas.

But it was Question 3 which really focused attention on the purposes of the Report and related directly to the subject matter in Volume I: "What should be the basis of preparation of men and women for professional leadership in such a society, with reference to the place of architecture in that society?" In most cases the various panel members had to be retrieved from their speculations about the future society and directed rather forcibly to a critique of the leadership role for architects and the implications for their education. Although there was little real carry-over from the previous questions, they served to generate a head of steam, and many fine suggestions and comments were freely offered.

Walter Taylor has written an excellent summary in the Epilogue, but he could not be expected to retain the "kick" contained in the best of the original statements. One wonders why, after waiting three years, the Commission did not bring itself to incorporate some of the recommendations which could be drawn from Volume II. Read for yourself what the Chicago banker, the Houston newsman, the Bishop from Syracuse, and many other laymen and women have to say about the architectural profession!

One finishes the Report with mixed emotions and certain misgivings. How long will it be until the leaders in our profession face the task of making qualitative evaluations as well as quantitative measurements? Perhaps the answer is implied in a quotation from Mr. Taylor's Epilogue:

"Under present conditions the factual equipment of the graduate will soon be outmoded in any field, and unless the professional graduate has motivation and habits for continuous self education, he will soon be obsolete and ineffectual, if not harmful."

Assuming that this statement is also retroactive, it would explain why the original survey was instigated and to whom it might appropriately be addressed.

OPINIONS FROM SEVERAL COMMISSION MEMBERS

Architectural Record is glad to present the reactions of several members of the Commission to their own work. The viewpoints of course are varied; it is necessary to understand this in order to comprehend the values of their Final Report.

Members of the Commission were chosen on the basis of the personal contribution that they were likely to make. It so happened, however, that they did come from widely scattered areas, namely, the Northwest, California, Gulf Coast, the Middle West, New England, and New York and they represented the teachers, the practitioners and the registration boards. They participated by their presence in eight or ten meetings, which were held in various parts of the country. All evaluations, conclusions and recommendations were the joint action of the members of the Commission. There was only one item in which there was not complete unanimity and that was with respect to the licensing examinations as to whether or not it should include material that the candidate studied in architectural school. The deans felt that the vast majority of

candidates who had been to college and presented academic degrees should be examined only in their three years of practice and those who come up from the rank without college degrees would take a more comprehensive examination. The practitioners held out for one examination for all and were in the majority. This divergence of opinion will be fully discussed in the report.

The fact that the Carnegie Foundation financed the study so handsomely made it possible to bring these ten or twelve men together several times for three- or four-day conferences. Without this joint participation, the study would have taken on the views and hues of the one or two people who might have done all the work. This report is safeguarded from such single-track leadership and is absolutely unique among professional surveys in this respect.

Edwin S. Burdell, Chairman Commission for the Survey of Education and Registration

In beginning its work in December, 1949, the Commission immediately

adopted a breadth of view and a standard of objectivity which was intended to minimize that hazard of subjective opinion which has so long plagued consideration of architectural education and registration. The first result was the 1950 Survey, which gathered an unprecedented body of data about architects, schools, teachers, students and registration boards. Second, the Commission sought by a series of detailed functional analyses to isolate and interrelate the causal factors influencing the educational and registration processes. And third, it strove to use these data and analyses as guides in formulating creative and realistic recommendations for the improvement of their operation.

The tenor of the Commission's recommendations is primarily the strengthening, systematizing, intensification, refinement and deepening of professional education from recruitment to retirement to the end that the competence of all architects will be enhanced in their service to society. The Commission believes that architecture and the profession have reached a stage of develop-

(Continued on page 48)



house for tomorrow

When Bill Miller first talked to the architect about his new home he stressed his desire to put into it the soundest materials and the newest conveniences.

"I hope my grandchildren will be happy in this house," he explained. "New improvements come fast these days, so let's try to be a few years ahead in our planning."

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(Continued from page 46)

ment in which laissez-faire attitudes and methods have definitely become obsolete and in which the functional efficiency of these processes must be raised through coöperative effort to entirely new levels.

This theme recurs again and again throughout the report. Perhaps it is most dramatically revealed by the need for the expansion of professional personnel - practitioners and students which is clearly demanded by the inexorable growth of population. It appears no less compelling in the need to explore and exploit methodically and energetically the potentialities of architectural research. In turn, the need for effective dissemination of new knowledge calls for more systematic conduct of professional education not only at the academic level, but also during candidacy and at advanced levels for mature architects. Thus the Commission emphatically believes that professional frontiers are far from closed and that the years ahead will present a degree and quality of opportunity, challenge, and significance worthy of the greatest traditions of the art and of the boldest and hardiest spirits among

Turpin C. Bannister, F.A.I.A. Editor of Volume I of the Report

I wish first to salute Turpin Bannister for a scholarly re-writing of the various sections which were prepared by different members of the Commission. The value of the report to the architectural profession and society will depend upon the extent to which it is considered by the officers of the Institute and individual architects. There is much source material for the work of committees and for individual studies.

With this report as a guide, I believe it would be profitable to undertake a similar study every ten years (following publication of U. S. Census Reports), or at most, every twenty years. I would suggest a slightly smaller Commission with perhaps two representatives each of the National Architectural Accrediting Board, the National Council of Architectural Registration Boards, and the Association of Collegiate Schools of Architecture, with the Director of Education and Research of the A.I.A. and the President of the A.I.A. as ex officio members. These eight members should be chosen for geographical representation and age distribution, as well as proven competence. If possible, some members of a previous Commission should be appointed as members of each succeeding Commission, and one

member should be a member of the A.I.A. Committee on Education.

It was found by the Commission, whose duties are coming to an end, that it was advantageous to have a small Executive Committee whose members reside near Washington. This and other committees should be set to work promptly. An adequate appropriation should be provided at the outset. Time, as well as available funds, should be budgeted carefully to the end that publication of the Commission's Report could be accomplished within three vears. Statistical data requested by questionnaires should be less voluminous than that requested by the outgoing Commission, the reduction being mainly an elimination of opinion questions.

The budget should provide for holding meetings in different sections of the country, some at architectural schools, some with A.I.A. chapter meetings and some with Registration Boards. Outstanding architects and members of other professions in each region should be invited to meet with the Commission.

C. H. Cowgill Head, Department of Architecture Virginia Polytechnic Institute, Blacksburg, Va.

The A.I.A. Survey Commission report is the result of a representative group of architects turning the spotlight on themselves and their associates and recording for contemporary appraisal and future reference the characteristics and activities of their professions. Linked with this is an attempt to prognosticate the direction of the profession's evolution.

The conversational groups across the nation offer a broad extra-professional résumé of the forces which appear to be influential in the nation's progressive development, their impact upon the construction industry, and the design professions.

Time may show the Commission members timid in their evaluation of the future growth and expansion of the profession, and probably too reluctant to influence more positively the direction which professional expansion should take. A certain conservatism was inherent resulting from the lack of earlier objective reports by which the course of the profession's development might be established. Two previous surveys of architectural schools, in 1930 and 1938, assisted greatly in ascertaining the direction taken by architectural education. No such reference points existed to assist in the analysis of the profession itself, nor in the study of registration and licensing procedures.

Fred L. Markham, A.I.A. Provo, Utah

It is difficult for me to read the two volumes of the Report of the Survey Commission hypercritically. For three years the Commission met, discussed and decided with such a degree of unanimity that I am prepared fully to approve the report. This was the effort of three practitioners, three educators and three members of registration boards, the President of NAHB, Ralph Walker, President of the Institute during the first two years of the labors of the Commission; Walter Taylor, Director of the Department of Education and Research of the Institute: Andrew Fraser, eminent statistician; and Dr. Burdell, esteemed President of Cooper Union. No holds were barred and every avenue of suggestion was explored to its termination. In the invitation to 100 citizens of the country with whom we conversed, extreme care was taken to consult all kinds of people and shades of opinion. Although the work has been laborious and has taken longer than we had thought, we can offer the report with confidence that it will be found to be thorough, scholarly and constructive. The 43 recommendations brought together in Chapter 11 of the main volume can be read by the busy person with stimulating effect. He can refer to the portions of the text which establish the backgrounds of the recommendations, further to understand each matter. The statistical charts and tables, vouched for by the statistician and derived in part by Turpin Bannister, are for those with sufficient time for scholarly understanding and evaluation of the report. The Commission is tremendously grateful to its two perfectionists, Turpin Bannister and Walter Taylor, for their patient insistance upon scholarly integrity in presenting the report. We shall hope that an evaluation of the profession may be conducted decennially so that evolution and achievement can be scientifically measured as we go along.

George Bain Cummings, F.A.I.A. Secretary, A.I.A. Binghamton, N. Y.

. . . As a member of the Commission I find it difficult to sit in judgment on its quality. It represents the most sincere effort of those responsible for it. Since it is the first reasonably thorough analysis of the profession as a whole, its value will be greater if later comparative studies can be made at ten year intervals. The members of the Institute will have to judge whether it is worth the time, money and hours of work that went into it.

B. Kenneth Johnstone Dean, College of Fine Arts Carnegie Institute of Technology Pittsburgh, Pa.

(More books on page 330)



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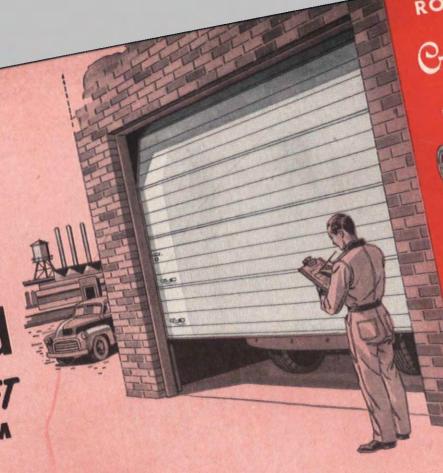
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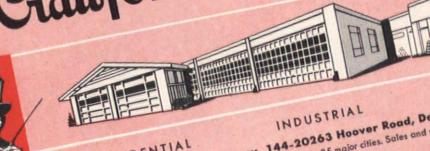
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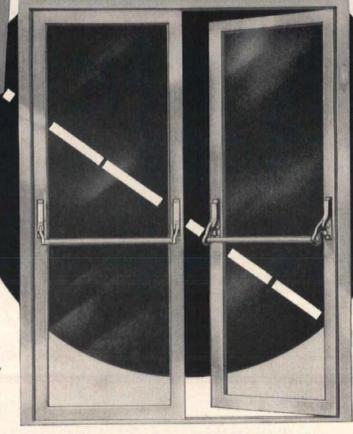
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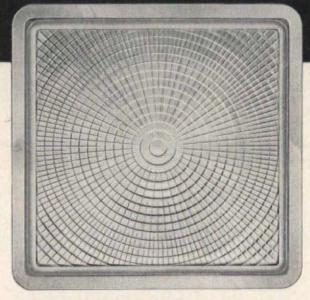


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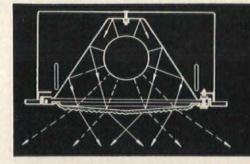
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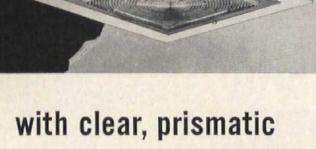
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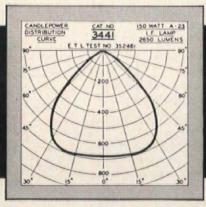


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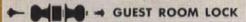
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With key locking on both sides this lock adds to the security and efficiency of the many special rooms in the Lankenau Hospital, Philadelphia, Pennsylvania. Architect: Vincent G. Kling. Builder: Wark & Company. Hardware Supplier: Adolph Soeffing & Company.



HOTELS



An occupancy indicator and automatic shut out feature make this lock an important factor in contributing to the convenience of guests at the Hotel di Lido, Miami Beach, Florida. Architect: Melvin Grossman; Associate Architect: Morris Lapidus. General Contractor: Robert L. Turchin, Inc. Hardware Supplier: Farrey's Wholesale Hardware Company, Inc.



SCHOOLS



CLASSROOM LOCK

Designed for classroom use with a locking outside knob and panic proof inside knob this Schlage lock function protects students and faculty of the Abraham Lincoln High School, San Francisco, California. Architects: Weihe, Frick and Kruse. General Contractor: M & K Corporation. Hardware Supplier: E. M. Hundley Hardware Company.



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THE WORLD'S MOST IMITATED LOCK

SCHLAGE LOCK COMPANY

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add 50% greater FIRE SAFETY to lath and plaster ceilings The simple addition of Keymesh galvanized reinforcing lath over gypsum lath increases the fire rating reference of a ceiling from one hour to one and one half hours, to large commercial and industrial when finished with 1/2 inch of lightbuildings. It's another reminder that Keymesh costs so little, but weight aggregate plaster. This increased fire safety is adds so much. When Keymesh lath is used, your entire ceiling and wall surface is reinforced with a vast network of multi-directional reinforcing PLUS greater over-all strength Keymesh lath helps the plasterer get a full, uniform thickness of plaster. With its open mesh, each wire is fully embedded, while serving as a gauge to assure the mesh adds so much. PEORIA 7, ILLINOIS KEYMESH . KEYBEAD . KEYCORNER . KEYSTONE WELDED WIRE KEYSTONE NAILS . TIE WIRE . KEYSTONE NON-CLIMBABLE AND ORNAMENTAL FENCE

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PLUS positive protection from cracking

wires, adding far more protection from cracking. This protection that stops cracks before they start, costs so little, but adds so much.

full 1/2" thickness of plaster specified. Full, uniform thickness assures greater over-all strength. Yes. Keymesh costs so little. Key-

Recommended and used by America's leading lathing and plastering contractors.

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KEYMESH

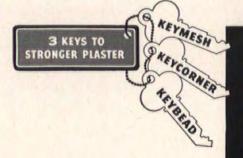
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lath is applied, cover it with Keymesh. The
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it unroll flat; go up flat. It's so easy to
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it adds so much, it costs so little.

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KEYMESH lath for over-all reinforcement. Made of galvanized woven wire. Especially recommended for ceiling construction.



KEYCORNER strip lath, preformed to fit snugly in corners. Lies flat when applied to joints. Galvanized to prevent rust streaks.



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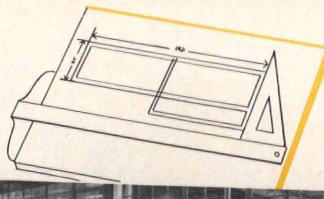
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REYNOLDS

Architects: Thomas, Jameson & Merrill, Dallas

General Contractor: J. W. Bateson & Co., Inc., Dallas

Architectural Aluminum Fabricator: Usona Manufacturing Company, St. Louis;

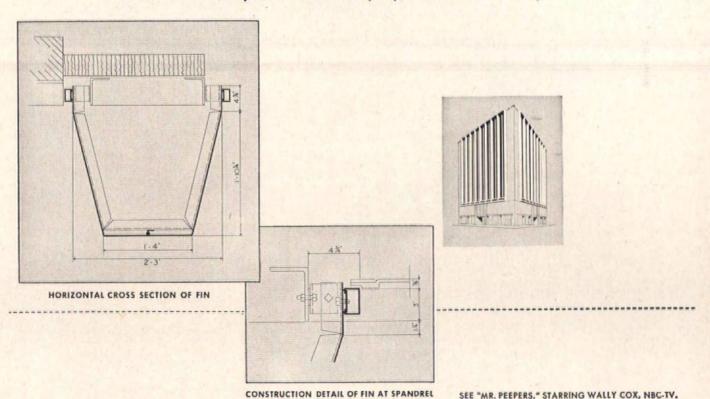
Erector: R. M. Sedwick Company, Dallas

Aluminum Applications in This Building:

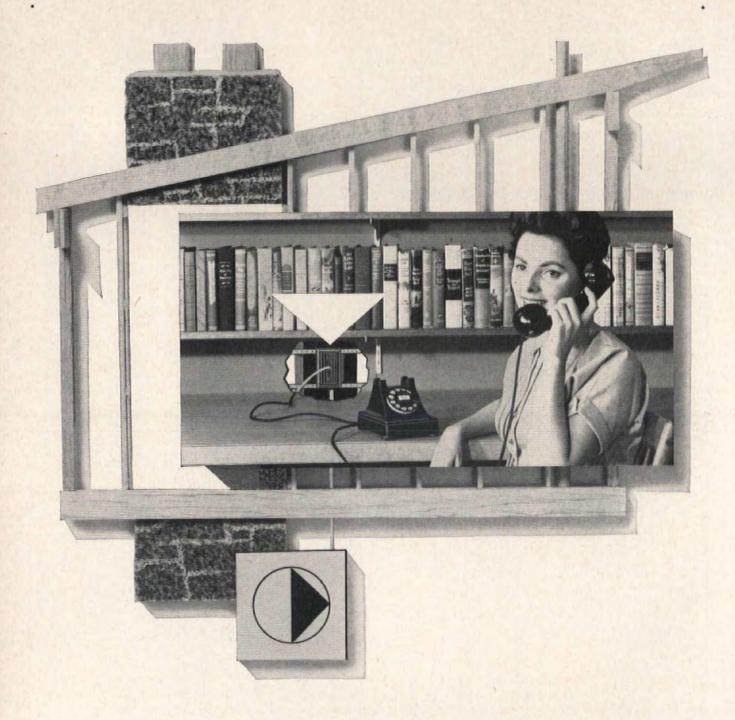
Column Covers, At the Doors, Main Entrance: Fins, Windows, Lettering, Spandrels, Tubing, Mullions, Flagpoles, Sills, Fascia, Soffit, Louvers, Light Coves Other trim

REYNOLDS ALUMINUM SERVICE TO ARCHITECTS

Reynolds Architect Service Representatives offer specialized assistance on aluminum design problems, on applications of standard aluminum mill products, and on the use of commercially fabricated aluminum building products. They can help to coordinate varied aluminum requirements for procurement efficiency and economy. Please address inquiries to . . . Architect Service, Reynolds Metals Company, Louisville 1, Kentucky.



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Your Bell Telephone Company will be glad to help you work out economical conduit installations. Just call your nearest Business Office.

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about Industrial Lighting Units



WHYare **RLM Specifications** Important to me?

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RLM Specifications furnish you with basic, nationally-accepted minimum standards of

efficiency, design, performance and quality in industrial lighting equipment. This latest-edition 52-page RLM Specifications Book puts all 21 RLM Specifications at your fingertips, complete with coefficient of utilization tables and candlepower distribution curves. In addition, there are four pages of reasons why RLM Specifications are important to everyone who buys, sells or specifies industrial lighting equipment. Send for your COMPLIMENTARY COPY of the RLM Specifications Book ... there is no obligation! WHO makes **RLM-Labeled Units** I want to Specify?

ANSWER:

As shown by this chart, which is also included with the RLM Specifications Book, there are 29

different manufacturers who make RLM-labeled lighting equipment. Each RLM Unit must conform to the minimum performance and quality standards required by RLM Specifications. However, every manufacturer is free to incorporate his own special features, construction refinements and operating advancements - such as sockets, control equipment, wiring, etc. Send for your FREE RLM Book for more details. RLM Standards Institute, Suite 827, 326 West Madison Street, Chicago 6, Illinois.

Actually, there are 75 different types and sizes of RLM-labeled Lighting Units. Each red dot on this chart indicates that the manufacturer makes at least 1 or more sizes covered by the particular RLM Specification.

Key to Spec. Nos.: INCANDESCENT UNITS:

- 1. Dome (100-1000w)
 2. Deep Bowl (100-1000w)
 3. Sym. Angle (100-1000w)
 4. High Bay (500, 1000w)
 Porcelain Enameled
 18. Glassteel Diffuser
 (200-1000w)
 40. High Bay Aluminum
 (500, 1000w)

FLUORESCENT UNITS:

- Closed-End Reflectors:
- 5. 2-40w lamps, 48" 6. 3-40w lamps, 48" 7. 2-85w lamps, 60" 22. 2-40w w/shield, 48"

Open-End Reflectors:

- 9, 2-40w lamps, 48° 10, 3-40w lamps, 48° 11, 2-85w lamps, 60° 23, 2-40w w/shield, 48° 28, 2-58w, 72° 29, 3-58w, 72° 30, 2-75w, 96° 31, 3-75w, 96°

- Semi-Direct Units:

- 35. 2-40w, 48° 36. 2-58w, 72° 37. 2-75w, 96"

Chart as of Jan. 1, 1954

RLM STANDARDS INSTITUTE

The letters RLM stend for Reflector and Lighting Equipment Monufacturars



R568

Designed
and specified by
Thorshov and
Cerny, Inc., A.I.A.
Minneapolis,
Minnesota



with The Kowneer Touck your designs become reality

Your design on the drawing board becomes a distinctive fact when it's executed with *The Kawneer Touch*.

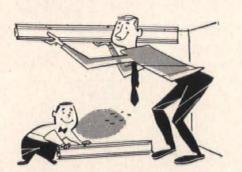
This hotel in Moorhead, Minnesota, stands out because Kawneer products were detailed, specified and installed. The skillful installation of quality Kawneer architectural metals as specified makes designs as close as possible to the way they were conceived.

Kawneer representatives are ready to assist with building front information, to furnish full-size details, etc., and to suggest reliable sources for prompt bids. Factory-trained Installing Dealers are listed under "Store Fronts" in telephone directories. Call the dealer located nearest you or write Kawneer, Niles, Michigan, for complete information.





Ask your Kawneer Installing Dealer for Kawneer Full-Size Details



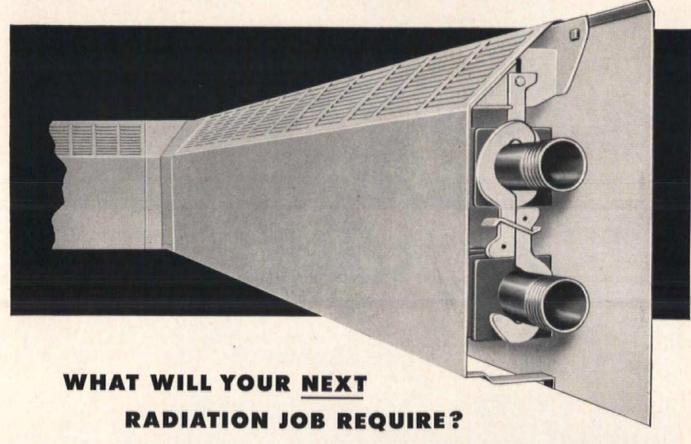
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"Full line of accessories"



"Wide choice of hangers"



No matter what the requirement . . . you'll have a client-satisfying answer to any along-the-wall radiation job with attractive Dunham Fin-Vector®.

That's because I=B=R rated Fin -Vector offers such a wide choice of sizes, capacities and styles. For example, Sloping Top, Flat Top and Expanded Metal Covers-one, two or three tiers high; heating elements supported either by simple wall brackets, adjustable hook and link hangers, or ball-bearing roller brackets; two heating fin and tube sizes; an unusually complete line of accessories that conceal all traces of piping.

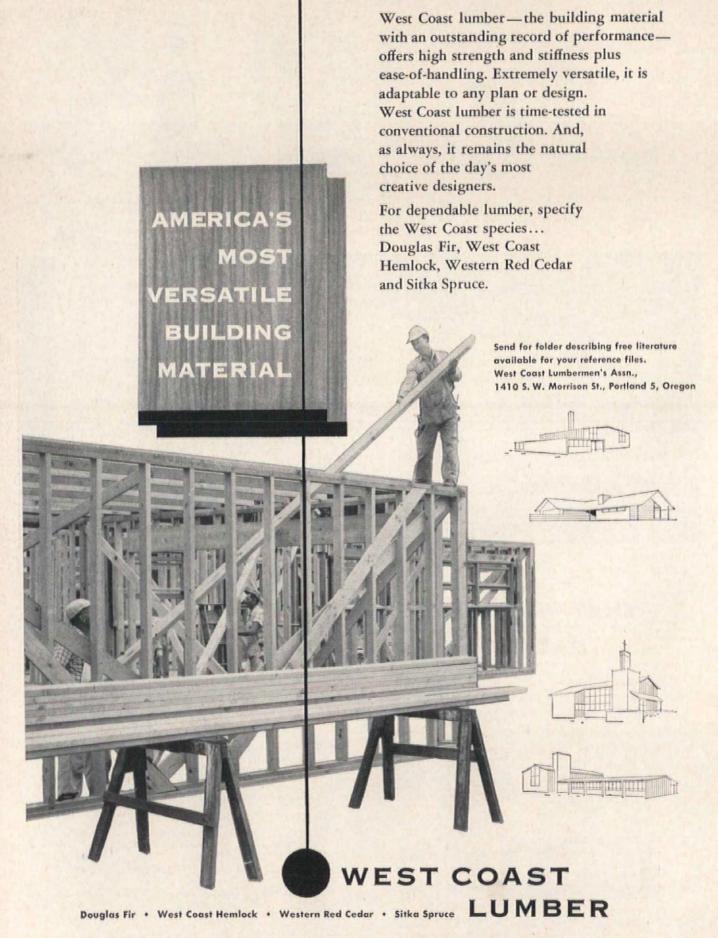
Fin-Vector cabinets have flanged ends for tighter fit, better finished appearance. And a new leveroperated damper assures better heating performance.

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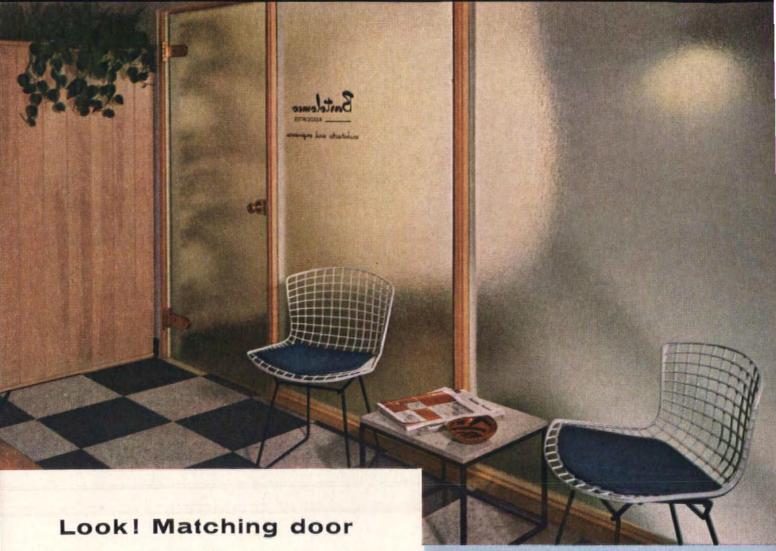


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Please send Fin-V	ector Literature.
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whatever the job, consider WOOD FIRST!



completes the decorative wall of light

Here's unity in color, tone and pattern with beauty that speaks for itself. The decorative glass door and wall pick up color and light in the hall outside and bring them through in a lovely, interesting blend. Yet the view is obscured for privacy.

The Blue Ridge Securit* Interior Glass Door is a single piece of glass patterned on both sides. It's an attractive door in other settings, too. The neutral tone of this glass complements all colors, goes well with other materials. The Securit Door is tempered—toughened to take hard usage.

Here's a door that is easy to hang. It requires no cutting, no mortising. It arrives at the job with distinctive, easily applied hardware.

The price compares favorably with that of high-quality doors of ordinary materials—and you save on installation and maintenance costs. For more information see your L·O·F Glass Distributor or Dealer. Look for his name in your phone book yellow pages under "Glass". Or write us direct.



Securit Door and matching panels of Muralex patterned glass in offices of Bartolomeo Associates, Architects and Engineers, Chicago.

BRIEF DATA

Glass-3/8" thick. Muralex patterned on both surfaces.

Tempered—three to five times stronger than untempered glass of same thickness.

Reversible—can be used right or left hand.

Standard Sizes—2'6" x 6'8" 2' 511/6" x 6' 71/6" 2'8" x 6'8" 2' 711/6" x 6' 71/6" 3'0" x 6'8" 2'1111/6" x 6' 71/6" 3'0" x 7'0" 2'1111/6" x 6' 111/6"

Closers—when specified, the door can be shipped with a Sargent closer or prepared for use with an LCN concealed closer.

For more complete information, see the Securit Door insert in Sweet's Architectural File.

Many uses for beautiful patterned glass

Blue Ridge Patterned Glass offers many possibilities in offices, homes, stores and institutions. In partitions . . . for decorative windows to shut out bad views . . . to lighten halls . . . for distinctive built-in furniture. Choose from linear, checkered and overall designs in plain, textured or Satinol* finishes.

Libbey Owens Ford Glass Co., Dept. B-2464 Patterned & Wire Glass Sales
608 Madison Avenue, Toledo 3, Ohio
Please send me your folder "Blue Ridge Securit Interior Glass Doors'
I would also like the booklet of ideas for using Blue Ridge Patterne Glass in ☐ homes ☐ other buildings. (Check one or both.)
NAME (PLEASE PRINT)
Andress

CITY

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200 Babies



You might think that sterilizers handling 1200 to 1500 bottles of baby formulas and solutions daily would require a lot of hard scrubbing.

Well, the dieticians who supervise preparation of the formulas for the needs of 200 babies at Babies Hospital in the Columbia-Presbyterian Medical Center, New York City, don't think so!

Their sterilizers are made of Monel® and Nickelclad steel.

A daily washing, using a common cleanser keeps the machines bright and surgically clean.

These, shown here, have been in use for two and a half years and they still look as good as new. They are too!

It's pretty hard to damage Monel and Nickelclad steel. They are hard and tough. And they won't scratch or dent easily.

They can't rust or corrode either. And they're not affected by sterilizer pressures and temperatures. These materials are not subject to stress-accelerated corrosion. They're long lasting, too. There are Monel and Nickel-clad sterilizers in use today that look and perform as well as they did when installed 10 or 15 years ago!

When you specify an Ohio Scanlan-Morris sterilizer, you get one that's immunized against metal troubles.

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Inco Nickel Alloys

Monel

Solutions and baby formulas are loaded on Monel carts for sterilizing in a Nickel-clad sterilizer. The cylindrical sterilizer at right has an all-welded Monel inner shell, Monel trays, rack and door components. Latest models feature a new solid pressure-locked Monel door with natural polished finish, These units are manufactured by the Ohio Chemical and Surgical Equipment Co., a division of Air Reduction Co., Inc., Madison 10, Wis. Write them directly for a free copy of their new 44-page catalog describing their Monel equipped pressure and non-pressure sterilizers and Nickel-clad bulk sterilizers.



... for immunized sterilizers

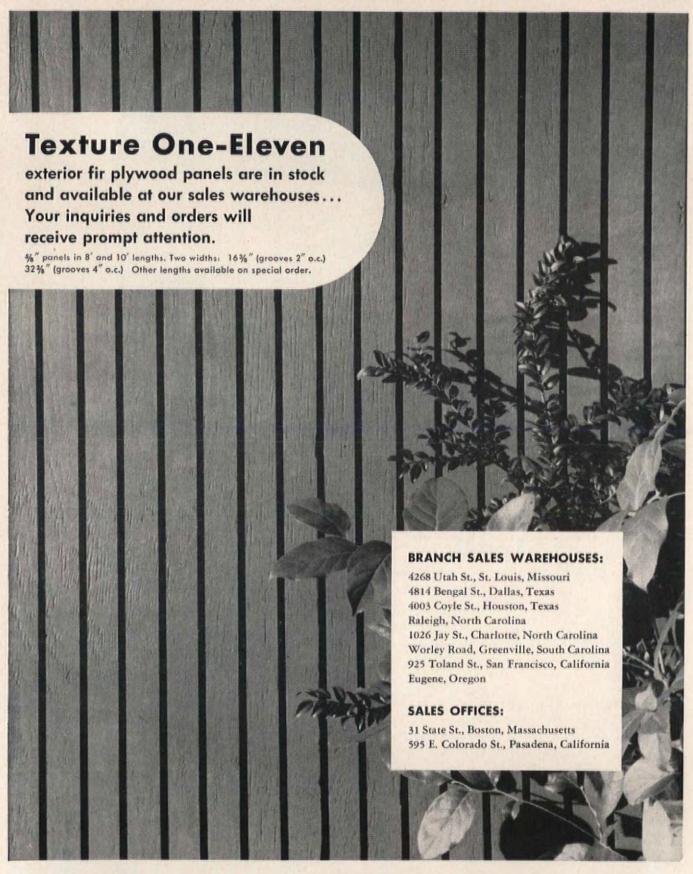


Street.

sion. Connor Engineering Corporation, Danbury, Conn.

Zone

State





ASSOCIATED PLYWOOD MILLS, Inc.

General Offices: Eugene, Oregon

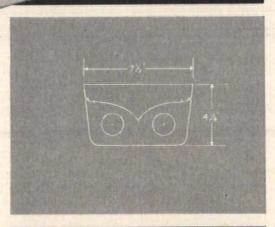
Plywood plants at Eugene and Willamina Lumber mill at Roseburg now ...

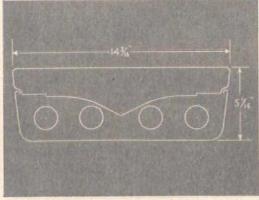
sightron

in four and two light versions

fully diffused lighting ...trim, crisp design

Our highly efficient Sightron series is now available in a new four light version. Both four and two light fixtures offer trim, unobtrusive design that maintains the architectural integrity of any area. Both now have concealed hinges at side of diffuser to make maintenance simple, and both now have rapid start ballasts to produce instantaneous lighting. Ribbed plastic diffusers give an even glow of fully filtered light without shadows. May be used individually or in continuous runs. Quickly and easily installed. Ends are white enamel. Accessory pieces to match.





End section drawings above show placement of lamps in two light (top) and four light versions of Sightron fixtures.

Write today for free brochure of architectural lighting by Lightolier.

Lighting by



JERSEY CITY 5, NEW JERSEY

FOR CORROSION-RESISTANCE IN



Window Stools and Tops...

Alberene Soapstone table tops, sinks, shelves, fume hoods and window stools, Ira Remson Hall, Queens College, Flushing. N. Y. Hoods furred down to opening. Fellheimer & Wagner, Archts.

Architects and Institutions Choose ALBERENE STONE

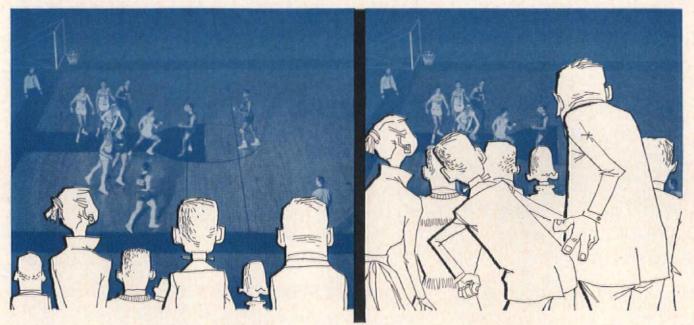
In the nation's leading schools, colleges, industrial research centers, hospitals — wherever corrosion is a problem — ALBERENE STONE is the choice for window stools (also sills) and laboratory table tops, sinks, fume hoods, and shelving. Because Alberene Stone is a natural material that is highly weather- and corrosion-resistant . . . durable . . . and attractive. And . . . because Alberene Stone is easy to handle — easy to drill and cut.

Our engineers are familiar with the latest developments in all types of laboratory construction. For technical information, write us today.

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This is Wayne visibility . . .

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GOOD VISIBILITY? DON'T TAKE IT FOR GRANTED!

It seems to us that buyers of gymnasium seating for balconies always compare the quality of the materials, the understructure, operating mechanism . . . in fact, all the construction features but often overlook the most important one . . . good visibility.

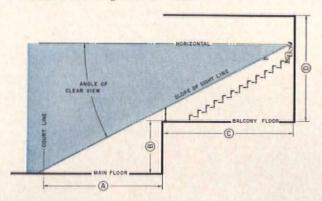
Without good visibility, your investment in balcony gymnasium seating is worthless.

Among the important factors determining good visibility in gymnasium seating for balconies is the rise per row (the vertical distance between successive seat boards). In Wayne construction there is a *special* rise per row to accommodate those situations where the height of the seat boards can increase visibility.

At the planning stage, our engineers make a sight-line-study of your gymnasium balcony, and from this determine the rise per row that will assure maximum visibility for your spectators.

LET WAYNE MAKE A "SIGHT-LINE-STUDY" OF YOUR GYMNASIUM BALCONY

As a free service . . . at your request . . . Wayne Engineers will gladly make a sight-line-study of your gymnasium balcony to determine the correct number of rows and the best rise per row for your stands. Please write direct to Dept. A-6 . . . there's no obligation of course.

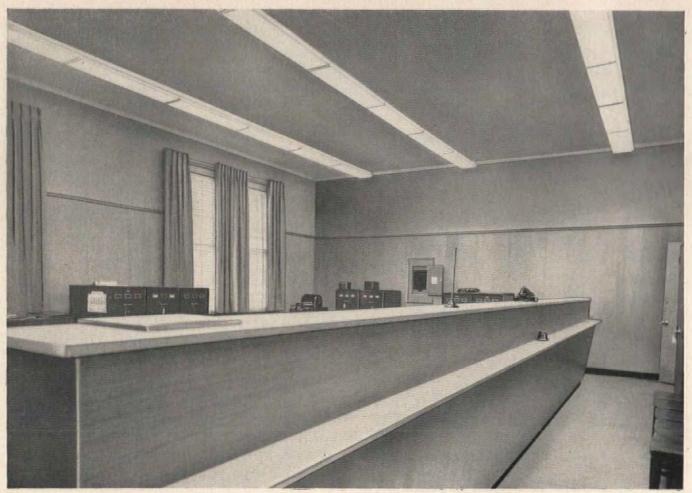


WAYNE

WAYNE IRON WORKS

148 N. PEMBROKE AVENUE, WAYNE, PA.





INSTALLATION: Clerk's Office and Small Claims Court,
New Britain, Connecticut
ACHITECT AND ENGINEERS: Mendel Baldessari
CONTRACTOR: Bessoni Bros., New Britain, Connecticut
ELECTRICAL CONTRACTOR: Grem Electric Co., New Britain, Connecticut
FIXTURES: No. 5328 2-lamp louvered, 35°-25° shielding. Surface
maunited.
LAMPS: Standard Cool White

SPACING: 8'-0"
CEILING HEIGHT: 12'-0"
INTENSITY: 85 footcandles average in service
WALLS: Birch plywood, natural
COUNTER AND FLOOR: Linoleum, jaspe color
UPPER WALL: Painted light tan
CEILING: Acoustical tile

Custom Comfort

... with Standard Lighting by LITECONTROL

This Clerk's Office and Small Claims Court has an open, uncrowded look, despite its small size. The atmosphere is pleasant, eyes are comfortable all day long. The key is relaxing, low-contrast interior decoration . . . and plenty of glare-free light by LITECONTROL. Fixtures by LITECONTROL are used throughout this New Britain, Conn., Court House.

Light intensity is high (85 footcandles), but brightness is low . . . every area gets the same plentiful yet gentle illumination. Louvers provide 35°-25° shielding. Light through the top of the fixture minimizes fixture-ceiling contrast.

LITECONTROL 5328 may be mounted on the ceiling, as here, or hung on pendants, in rows or individually. It's always easy to install. Louvers are rigidly framed, have no sharp edges, swing fully open from spring catches on either side for easy cleaning and relamping.

Efficient, versatile and flexible in mounting, LITECONTROL fixtures assure custom lighting in every installation... at standard prices. Basic fixtures can be modified or combined to meet every lighting need. Call or write your local LITECONTROL representative.



LITECONTROL 👙

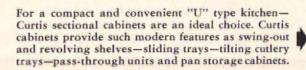
KEEP UPKEEP DOWN

LITECONTROL CORPORATION, 36 Pleasant Street, Watertown 72, Massachusetts

DESIGNERS, ENGINEERS AND MANUFACTURERS OF FLUORESCENT LIGHTING EQUIPMENT DISTRIBUTED ONLY THROUGH ACCREDITED WHOLESALERS

make the plan-Toman Designed kitchen will fit it!





Where space is limited, as in this straight wall kitchen, Curtis cabinets provide maximum storage space. With Curtis cabinets, the housewife does less stooping, less bending-everything is in easy reach. Curtis modern-design hardware is furnished.





Kitchen-laundry or kitchen-dinette-Curtis sectional wood kitchen cabinets fit beautifully into such openplan arrangements. Styled and tested by women, these sectional cabinet units contain the 53 beauty and convenience features which women want.

Planning an "L" type kitchen? Curtis cabinet units will fit your plan like a glove. These cabinets are available with fronts of beautifully grained birch expressing the warm, friendly charm of wood. Or, if desired, cabinets come finished in white, ready for decoration in the colors of the owner's choice.



Curtis makes a complete line of architectural woodwork and Silentite windows for homes of all types and sizes. Make your next home "all Curtis."

kitchens.

Facts for your file -mail the coupon!

_____ Curtis Companies Service Bureau AR-6-54 200 Curtis Building Clinton, Iowa Please send booklet on the new Curtis woman-designed

City......State.....

One of a series of papers prepared by leading authorities on air conditioning. The opinions and methods presented are those of the author and are not necessarily endorsed by the Du Pont Company. Reprints of this article, and others in the series, may be had free upon request.

AIR CONDITIONING IN MODERN BANKS

BY JAMES MONGITORE



James Mongitore is in complete charge of the design of air conditioning, refrigeration and mechanical systems for the firm of Mongitore & Moesel, Consulting Engineers, N. Y., successors to the office of Sullivan A.S. Patorno. Mr. Mongitore has designed air conditioning systems for several prominent business offices, newspaper plants and research laboratories.

America's banks were among the first institutions in the nation to recognize the importance of proper air conditioning. Over 50 years ago, when air conditioning first entered the country's markets, bankers were quick to see its tremendous potential. They gave the air conditioning industry a substantial boost during its early days, by financing the industry itself and by installing the equipment it produced.

When the architect lays out the plans for a modern bank, he must of necessity include a much larger area for offices than for the actual banking quarters. The office space generally presents the same air conditioning problems of offices in similar buildings. The actual banking quarters, however, pose a number of individual problems, usually concerned with large floor space, higher-than-average ceilings, special furnishings and decorative treatment.

PLANNING THE INSTALLATION

Quite often, existing bank buildings have very ornate ceilings which cannot be disturbed by the addition of ceiling diffusers and concealed ducting. This may be overcome by decorating the diffuser to blend in with the ceiling. If this is impossible, side-wall units may be used. In a number of banks, diffusers have been installed in an inverted position on the tops of columns about 10'0" above the floor to direct the air out horizontally. This simplifies the ducting, as it is brought directly from the basement to the vertical columns.

With new designs the diffusers should harmonize with the lighting and acoustical treatment. Care should be taken in the design stage so that the air is uniformly distributed out over the ceiling. Then, after losing its velocity and temperature, it will enter the occupied zone with good diffusion. To aid winter air conditioning, low returns along the outside walls should be included—or low central returns with a split system. This allows exterior radiation to take care of the heating load. When the system is used for heating, ceiling returns cause short circuiting of the supply air but little or no effect in the breathing zone. However, adjustable outlets for diffusion of warm or cold air should be avoided. Proper return locations eliminate the need for outlet adjustments, assure that warm air reaches the breathing zone and cold air is satisfactorily diffused.

TEMPERATURE AND HUMIDITY

General design data relating to air conditioning in banks, based on outside and inside design conditions, is available. For example, banking quarters with outside design conditions of 95° F. dry-bulb and 75° F. wet-bulb, inside design 80° F. dry-bulb and 50% relative humidity. The general design data under such conditions would show an average 53 BTU per hour per sq. ft. and an average 4.7 people per ton. These figures illustrate the wealth of design data available. They are not, however, intended to replace the careful load calculations made by the engineer for the individual job.

With the basic data available, the proposed system must be evaluated to find how economically it can operate during banking hours at peak load conditions.



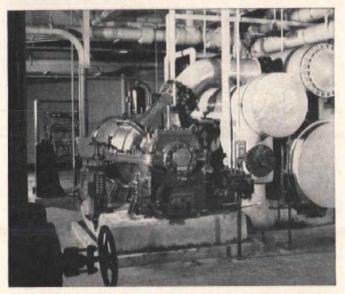
Typical Interior of a modern bank. Note location of diffusers in rows along acoustically treated ceiling to give good distribution of air to all areas.

Equivalent costs for operating in off hours must also be considered.

VAULT AREAS

A major problem now being faced in the air conditioning of banks is the handling of the vault area. One solution is the use of flexible connections to the vault when it is in use and removal of the connection when the vault is closed. A second method is to provide a pressure difference in the area surrounding the vault, allowing sufficient air to feed the vault when the doors are open. A third method allowed normal-size ducts to deliver the air to a point on the outer wall of the vault. From there it is diverted in a honeycomb system of narrow wall channels which supply air to the vault area. This eliminates the need for a full-size duct hole through the vault's outer wall.

The majority of banks are air conditioned with yearround systems. Outside air and recirculated air in such systems are regulated to meet the conditions of summer or winter temperatures.



Compressor installation in basement of modern bank. When it is necessary to use this space for other purposes, equipment can be located on roof of building.

ACOUSTICAL FACTOR

The average decibel rating allowable for bank installations is 45db. Where lower noise levels are desired, acoustical treatment of ceilings and walls must be considered, as well as the maximum velocity of air flow through the ducts and diffusers. The use of proper draperies and carpeting also helps lower the noise level. With good duct design and proper selection of fans and diffusers, no acoustical lining should be necessary to deaden sound in the ductwork.

OPERATING THE SYSTEM

In addition to power costs, where large amounts of water are necessary for the operation of an air conditioning system, the installation of a cooling tower will reduce water consumption and cut water costs up to 90%. Addition of water to the system only becomes necessary to make up for evaporation.

Caution must be exercised when using available data for computing air conditioning loads, heat-loss factors, and the many other variables for air conditioning a given area. These tables, standards or factors have been compiled to help with—but not replace—the individual's computations for each project.



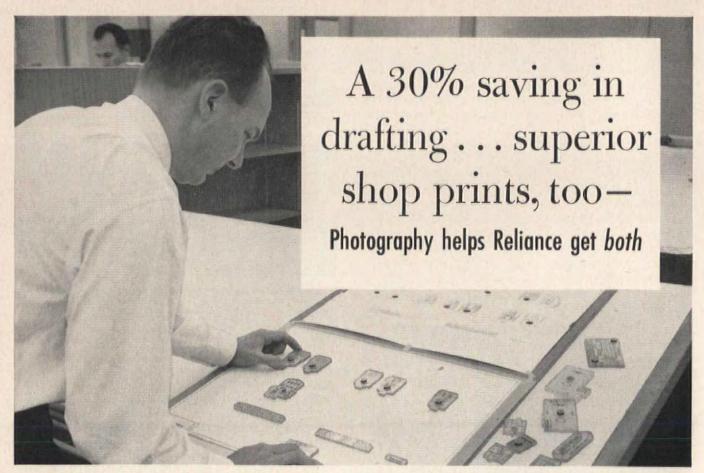
These large fans are floated on rubber vibration pads, and one fan(left background) has canvas sleeve to absorb vibration noise before it can enter ductwork.

The modern banker is just one of many American businessmen who have found that air conditioning is a sound investment. In all manner of commercial buildings, air conditioning—properly planned, installed, and operated—can contribute substantially to employee and customer comfort, can boost the volume and quality of work produced.

As Mr. Mongitore has pointed out, bank buildings present specialized problems in air conditioning—as do printing plants, department stores, hotels, and other specific applications. But though the nature of the job itself may vary, its basic requirements remain the same. For this reason, whenever you're discussing air conditioning with a client and specific installations are being considered, you'll serve him well by calling his attention to equipment operated with Du Pont's "Freon"* refrigerants. There are many makes and models of equipment available—a type for almost every kind of job.

"Freon" refrigerants are absolutely safe—nonflammable, nonexplosive, virtually nontoxic—and meet all building-code requirements. Their uniform high quality guarantees low-cost, trouble-free performance of the system for long periods of time. For further details, write E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.





At the Reliance Electric & Engineering Co., Cleveland, Ohio, the use of photographic templates and Kodagraph Autopositive Paper has helped to lower drafting-room costs by at least 30%, besides assuring highly legible shop prints day in and day out.

The templates—on clear plastic—represent the designs of standard components that appear again and again in Reliance's many wiring diagrams. A draftsman uses them, first, to make a preliminary drawing—positioning the templates he needs on whiteprint paper, making a print, then roughing in the hook-up lines.

After this drawing has been approved, he prints the templates on Kodagraph Autopositive Paper, using a printing frame. Simple photographic processing—under normal roomlight—produces a positive print of the layout directly. All he has to do now is add the hook-up lines, and another drawing is ready for Reliance's file of photo-lasting Autopositive "originals." Another saving can be chalked up!

Reliance has found these photo-drawings to be ideal printing intermediates. They're evenly translucent, durable; have crisp, dense black lines. And they produce top-quality shop prints at practical, uniform speeds in Reliance's direct-process machine.

Learn how thousands of companies are simplifying drafting and drawing reproduction routines, and protecting valuable originals with Kodagraph Autopositive Paper. See how you, or your local blueprinter, can process this sensational material quickly, at low cost. Mail coupon today.

Kodagraph Autopositive Paper "THE BIG NEW PLUS" in architectural drawing reproduction —— MAIL COUPON FOR FREE BOOKLET EASTMAN KODAK COMPANY, Industrial Photographic Division, Rochester 4, N. Y. Gentlemen: Please send me a copy of "Modern Drawing and Document Reproduction," which gives all the facts on Kodagraph Autopositive Paper. Name Position Street City Zone State



Specify

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Manufacturers of builders' hardware are now offering more beautiful, more trouble-free, much stronger hardware made of Alcoa® Aluminum. These luxury lines of lock sets, escutcheons, hinges, window and cabinet hardware made of Alcoa Aluminum offer the strength and solidity of other metals at one-third the weight. And yet they're priced the same as regular lines!

Alcoa helped the progressive manufacturers of these modern lines by developing high strength, corrosion-resistant alloys; beautiful, enduring, abrasion-resistant finishes; and fabricating methods. Ask your hardware consultant or builder for full details on builders' hardware made of Alcoa Aluminum. ALUMINUM COMPANY OF AMERICA, 1971-F Alcoa Building, Pittsburgh 19, Pa.

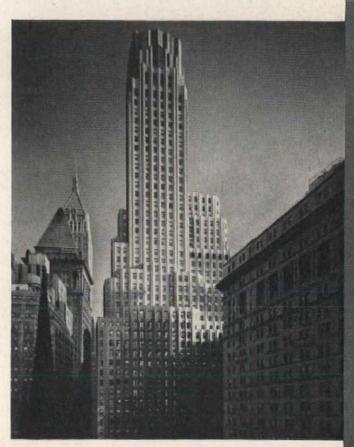


ALUMINUM COMPANY OF AMERICA

Another distinguished building air conditioned by the Carrier Conduit Weathermaster System

Occupants of these important New York City buildings enjoy Conduit Weathermaster air conditioning:

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Why are so many hundreds of thousands of feet of floor space in New York City air conditioned by Carrier? The Conduit Weathermaster* System, perfected by years of unmatched experience, permits the occupants of each room to dial their own climate. Operation is quiet; there are no moving parts within the room. Maintenance is simplified; all operating equipment is centralized. And installation requires a minimum of space.

Carrier Corporation, Syracuse, New York.

*Reg. U. S. Pat. Off.

Voorhees, Walker, Foley & Smith, architects. Meyer, Strong & Jones, consulting engineers.

Turner Construction Company, general contractor. Alvord and Swift, heating and ventilating contractors.



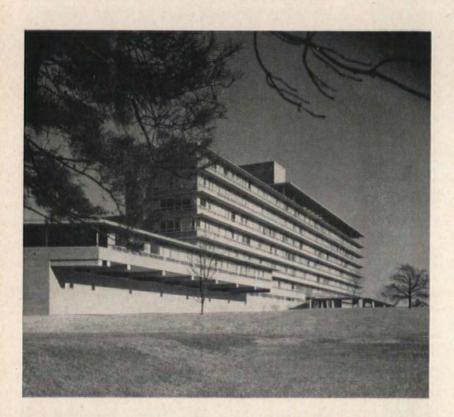
first name in air conditioning

better can't be bought!



FRED MEDART PRODUCTS, INC. . 3540 DEKALB ST. . ST. LOUIS 18, MO.

Two New Medical Buildings Have Frameworks of Bethlehem Steel



LANKENAU HOSPITAL, PHILADELPHIA

The new 320-bed Lankenau Hospital in Philadelphia is representative of the most advanced thinking in modern hospital construction and facilities. Six stories high with a facing of red brick, the hospital, built in the shape of an H, stands on a 94-acre site.

Patient's beds are in one wing, out-patient and clinic facilities in the other, and the center connecting wing provides technical facilities and services common to both. An unusual feature is an elaborate health museum with animated displays, open to the public.

The main hospital building contains 1750 tons of Bethlehem structural steel. Architect: Vincent G. Kling; Dr. L. P. Wilson, consultant; General Contractors: Wark & Co.; Steel Fabricators: Belmont Iron Works—all of Philadelphia.

MEDICAL SCIENCE BUILDING, NEW YORK CITY

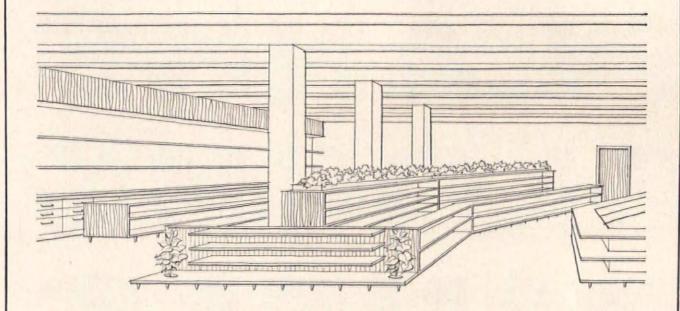
This six-story addition to the New York University-Bellevue Medical Center houses classrooms, laboratories and administration offices. Facilities include a 120,000 volume library, the College of Medicine and the Post-Graduate Medical School. The interior of the structure is designed so that rooms, including laboratories, may be changed in size by removing interior partitions as needs arise.

The T-shaped building has an exterior finish of light-gray ceramic glazed brick over 1900 tons of Bethlehem Structural Shapes. Architects: Skidmore, Owings and Merrill; Structural Engineers: Seelye, Stevenson, Value and Knecht; General Contractors: John Lowry, Inc., all of New York City. Steel Fabricators: Dreier Structural Steel Co., Long Island City.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation, Export Distributors Bethlehem Steel Export Corporation





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These recommendations are based upon the principles of Pittsburgh's system of COLOR DYNAMICS®. This method of painting has successfully demonstrated its ability to improve productive efficiency, morale and well-being in many fields.

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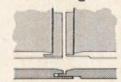


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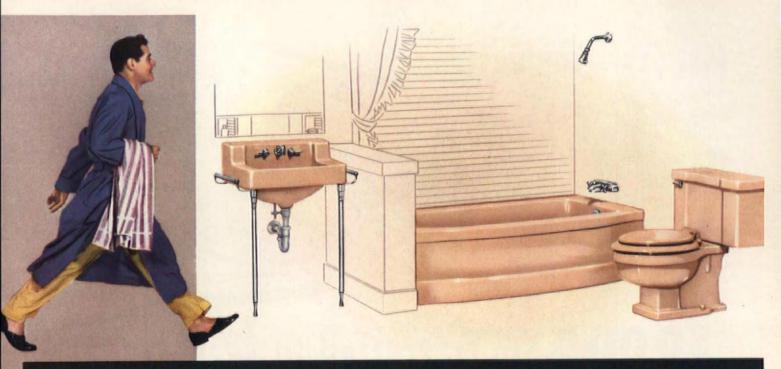


Exclusive tongue and groove makes installation easy

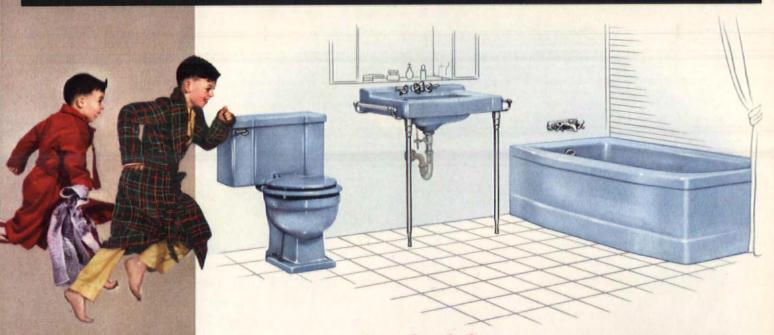
New Marlite Plank and Block—easy to handle, easy to install, sure to please your clients. Smart "Companion Colors" styled for every room. Plan on new Marlite Plank and Block for new beauty, new economy, faster installation!

For details, see your building materials dealer refer to Sweet's Files, or write Marsh Wall Products, Inc., Dept. 605; Dover, Ohio. Subsidiary of Masonite Corporation.

WALL and CEILING PANELING



TWO BATHROOMS - a must in every modern home!





Coral—the bright new Briggs color—is being introduced to millions of potential buyers through powerful advertising in the pages of national magazines. Here is the first and of the new series.

The second colorful Briggs Beautyware bathroom can sell your homes first!

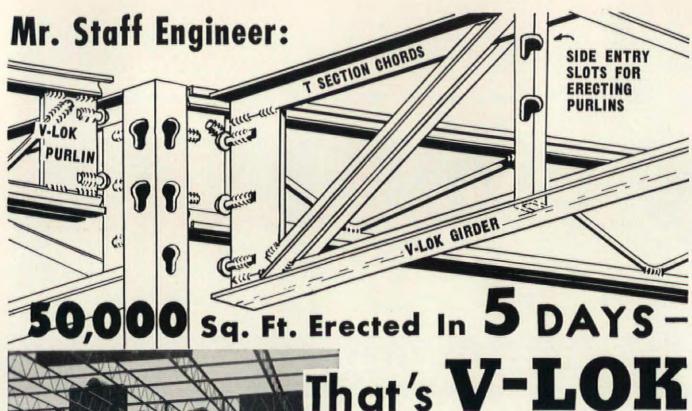
You really get a prospect's attention when you start talking two bathrooms of glamorous Briggs Beautyware in color! Many a builder is using that fact to beat his competitors to the punch.

Folks love the fresh, modern look of these handsome fixtures. Four popular pastel tones— Coral, Sky Blue, Sea Green and Sandstone... blend harmoniously with an endless variety of color schemes. What's more, all Briggs Beautyware is acid-resistant. Colors won't fade. Users can depend on Briggs fixtures to keep right on looking brand new for years.

Up-to-date architects and builders know they can rely on Briggs Beautyware, too—to increase sales and boost their reputations. They're finding that the second Briggs bathroom is a big help in selling any new home faster! Always specify two bathrooms of colorful Briggs Beautyware!

BRIGGS MANUFACTURING COMPANY . DETROIT 26, MICHIGAN

BRIGGS







50,000 sq. ft. erected and one-third under roof.

LEFT: Wall anchor at expansion joint.

RIGHT shows angle bridging, extended at wall line as

ORIGINATORS OF THE

outlooker carrying deck.

This Interlocking Steel Framing System is an engineer's answer to many structural design problems.

For the typical one-story building such as Schools, Factories, Warehouses, Supermarkets, V-LOK can be light or heavy as the loads and spans for which it was designed.

Erection is so fast-Any Contractor Who Takes a V-LOK Job Will Make a New Record. He will also ask you when you are going to have another one.

The designing time, fabrication and erection with standardized structural members all contribute to the successful bid you can make. Dimensions and loading information will be appreciated in your inquiry.

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"Now we can enjoy peace of mind.

a Koppers Roof protects the Pasadena Playhouse"



Charles F. Prickett, Executive Vice-President Pasadena Playhouse, Pasadena, Calif.

CINCE a Koppers Roof was installed On the famous Pasadena Playhouse, the management no longer worries about possible water damage to costly interior fittings. As Mr. Prickett, Executive Vice-President, so aptly puts it-"We were finally relieved of this worry."

Koppers Roofs have a well-earned reputation for protecting buildings and contents from water. Coal-tar pitch, the basic ingredient in Koppers Roofs, is well known for its waterproofing qualities. It resists water without deteriorating.

Many Koppers Pitch and Felt Roofs have been in use for over 20 years and are still pleasing owners. These roofs are widely used to protect commercial, industrial and residential buildings. Full information on request, or see our specifications in Section 7a — Sweet's Architectural File.

> Roofer: John W. Lytle Corp., Pasadena, Calif.



July 23, 1953

says CHARLES F. PRICKETT

Executive Vice-President

Mr. Maynard Neilson John W. Lytle Corporation 2383 E. Walnut Street Pasadena, California

Dear Mr. Neilson:

For many years we were troubled with the problem of water standing on the roof of our main auditorium. We knew the possible consequences of such a situation, and a roof a such a situation with its costly interior possitue consequences of such a situation, and a roof failure over this suditorium with its costly interior fittings would have been disastrous.

When you applied a KOPPERS COAL TAR ROOF to the Playhouse, when you applied a MUFFERS WHAL TAK MUFF to the Playhouse we were finally relieved of this worry. Now we can enjoy the neace of mind that somes from broader or mind that we were ringerly refresed of this worry. NOW we can enjoy the peace of mind that comes from knowing our auditorium has the maximum protection good roofing affords.

May we express our sincere thanks for the fine job your company did.

Charles F. Prickett Executive Vice-President

CFP: jmb



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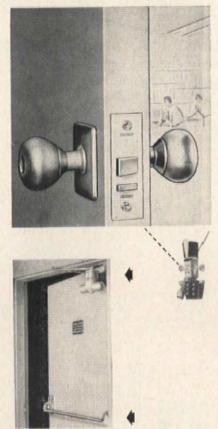
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T-432 Heating-Cooling Room Thermostat



D-251 Piston Damper Operator



In building after building Johnson is called upon to furnish and install dependable automatic temperature and humidity control for modern air conditioning systems.

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Here, 61 Johnson Heating-Cooling Thermostats and 46 Johnson Humidostats operate Johnson Valves and Dampers to produce the ultimate in comfort every minute of the day for the occupants of each office in the building.

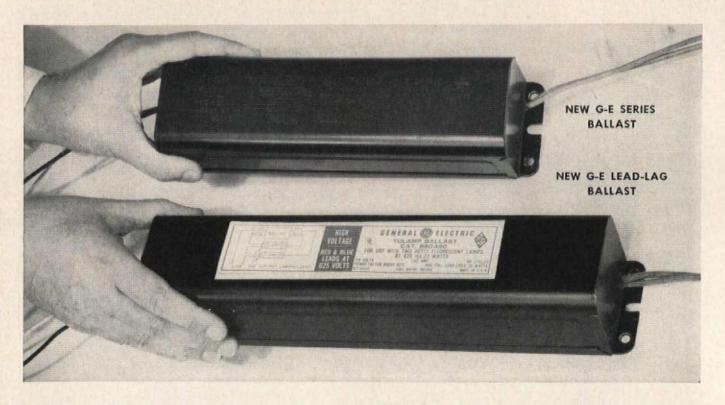
Johnson "Planned-for-the-Purpose" Control Systems not only result in maximum comfort but they also assure the greatest savings on every heating and cooling dollar spent.

To every installation, Johnson brings nearly 70 years of experience and know-how in solving every kind of temperature control problem.

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New G-E Series and Lead-lag Ballasts ... Compare and Choose for Yourself

Here is a comparison of G.E.'s two new ballasts for operation of 96T12 lamps at 425 ma. Catalog No. 89G496 is the newly designed series ballast—smaller, lighter, quieter. Catalog No. 89G490 is the similarly redesigned lead-lag ballast.

BOTH BALLASTS ARE CBM CERTIFIED and contain that full measure of extra quality which G-E engineers into every ballast, but the series ballast, by its inherent design characteristics, gives you more value for your dollar. However, if you prefer lead-lag instead of series, the new lead-lag ballast has been designed to give you the most value compared to other lead-lag ballasts.

THE SERIES BALLAST gives you equivalent performance, in accordance with lamp specifications, and offers a substantial savings in cost and size. At right is a comparison of these two General Electric ballasts. The major areas of difference are printed in bold face. You can see that the

series is less expensive, uses less line current, has less wattage loss, weighs less, is smaller, and has a quieter sound rating. Compare and choose for yourself. For further information on either series or lead-lag ballasts, write to Section 401-6, General Electric Co., Schenectady 5, New York.

SERIES 89G496	LEAD-LAG 89G490		
73	Nominal lamp watts	73	
110-125	Circuit voltage	110-125	
60	Frequency	60	
1.55	Line Current in Amps	1.60	
.425	Lamp Current in Amps	.425	
28	Watts Loss	36	
90%	Min line power factor	90%	
\$10.15	List Price Each	\$12.60	
6	No. Units per Package	6	
65	Approximate Ship weight	74	
D	Sound Rating	E	
113/4	Over-all length	14 3/8	
11 9/64	Mounting Length	133/4	

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Mississippi Glass Used In Outstanding New Skyscraper Offices of U. S. Steel

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Structural Corrugated Glass is being specified by architects everywhere for its beauty and utility... offers new scope for talents... suggests numerous ways to handle design problems. Mississippi figured glass is manufactured in a wide variety of patterns and surface treatments and is available wherever quality glass is sold. Select glass by Mississippi and add sparkle to your ideas.

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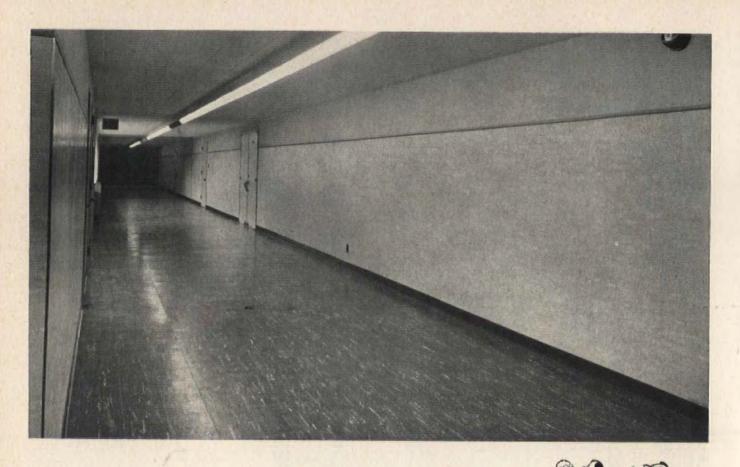
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Write today for free booklet, "Figured Glass by Mississippi." Contains many ideas on ways to utilize diffusing glass in modernization or new construction.

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No matter how traffic bears down on Tile-Tex...you can be sure that Tile-Tex will bear up!

It smiles right back at the day and night parade of patients, doctors, nurses, visitors, orderlies... wheel stretchers, wheelchairs, food and dressing carts, oxygen tanks, etc.

Its cheerful colors go through from surface to surface... won't fade or wear off under heavy traffic.

And how hospitals appreciate the easy way that smoothsurfaced Tile-Tex is cleaned!

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THE TILE-TEX DIVISION, The Flintkote Company, 1234 McKinley Street, Chicago Heights, Illinois

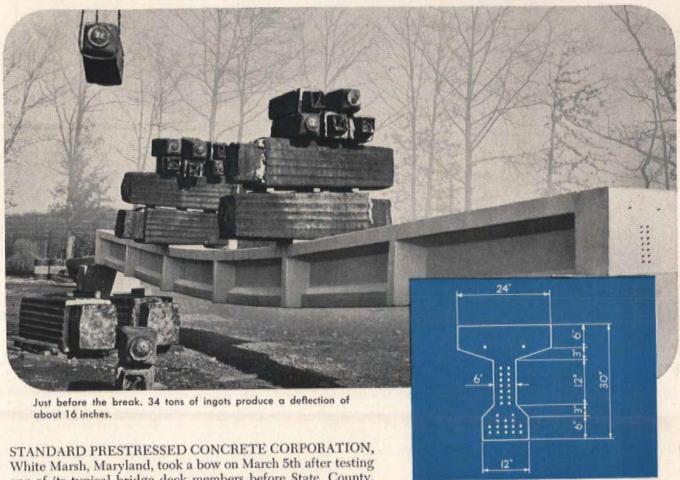
Tile-Tex-Pioneer Division, The Flintkote Company, P. O. Box 2218, Terminal Annex, Los Angeles 54, California

The Flintkote Company of Canada, Ltd., 30th Street, Long Branch, Toronto, Canada *Reg. U. S. Pat. Off.



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one of its typical bridge deck members before State, County, and City engineers, and private consultants.

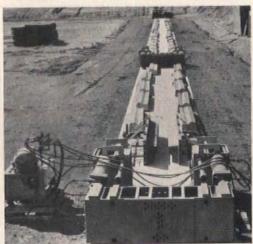
The 62-foot beam, pre-tensioned with thirty-one 3/8-inch Roebling Stress-Relieved Prestressed Concrete Strands, exceeded Bureau of Public Roads requirements by a considerable margin. Deflection under H20-S16-44 live load and impact was .05 foot, only 1/1200 of the span. The ultimate load just before failure was about 17 tons at each third point, well in excess of the required ultimate strength.

This test, conducted under the direction of Dr. Walter C. Boyer of Johns Hopkins University, confirms the dependability of pre-tensioned, prestressed concrete members and of Roebling Tensioning Elements. In addition, the experience of Standard Prestressed Concrete Corporation and other producers confirms the economy of pre-tensioned bonded members for many structures.

Roebling engineers, pioneers in this field in America, are always ready to offer suggestions about prestressed concrete and the tensioning elements best suited to specific applications. Write Construction Materials Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

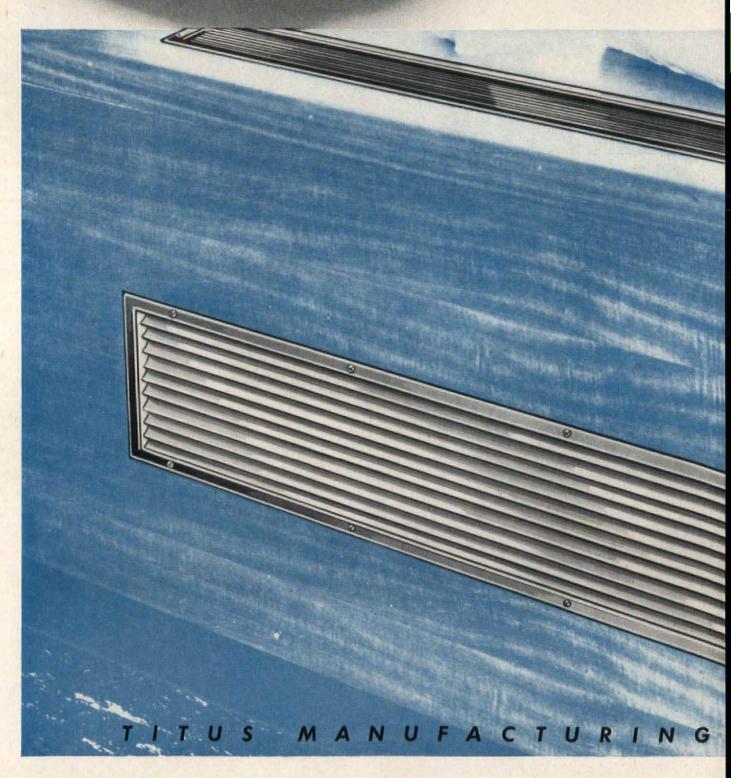


Cross-section of beam tested showing arrangement of Roebling Stress-Relieved Prestressed Concrete Strands to provide over 170 tons compressive force



Casting and pre-tensioning bed at White Marsh. 320 feet long, the bed is post-tensioned with 1-inch diameter Roebling Galvanized Prestressed Concrete Strands and produces a variety of beams and other structural members. Note forms along edge of bed.

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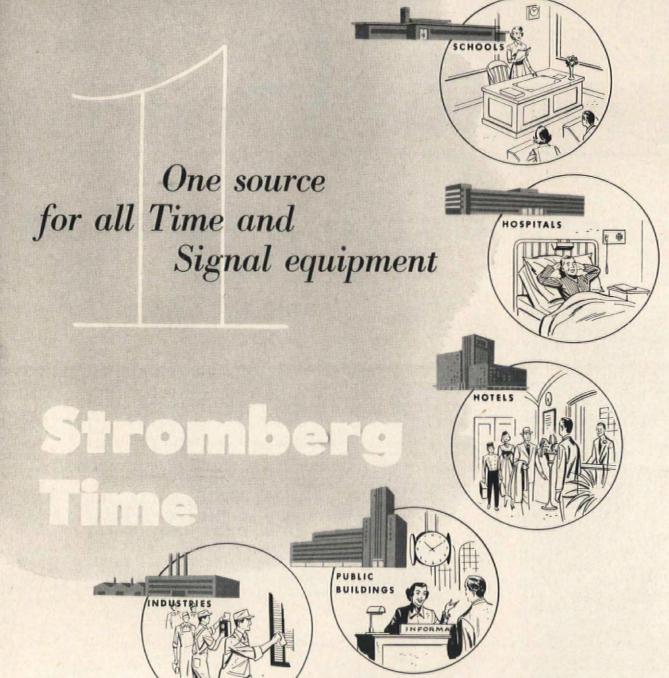
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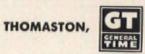
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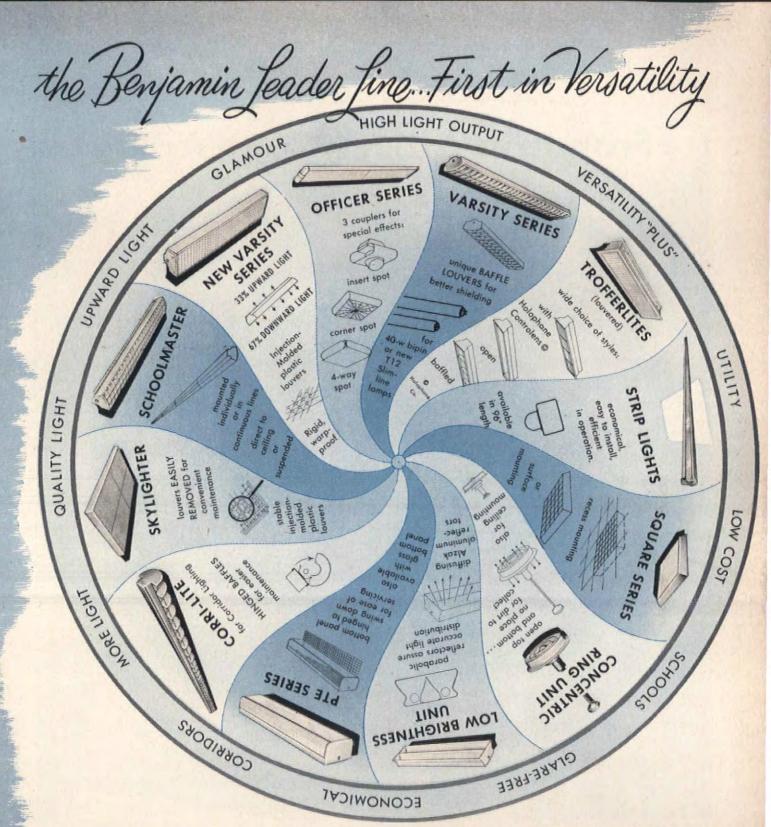
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Plants in Alliance, Ohio, and Colton, California

for complete information.

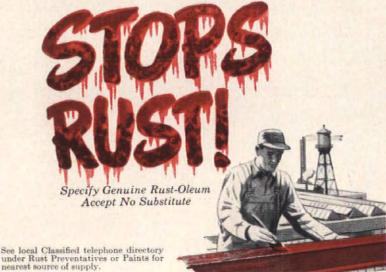
desired. Flat rim sinks may be installed with plastic or tile

drainboards and AllianceWare stainless steel frames. Write



There is only one Rust-Oleum

RUST-OLEUM®



The exclusive Rust-Oleum formula was developed by a Master Mariner during more than 20 years of combating the terrible rust-producing conditions of the sea. It incorporates

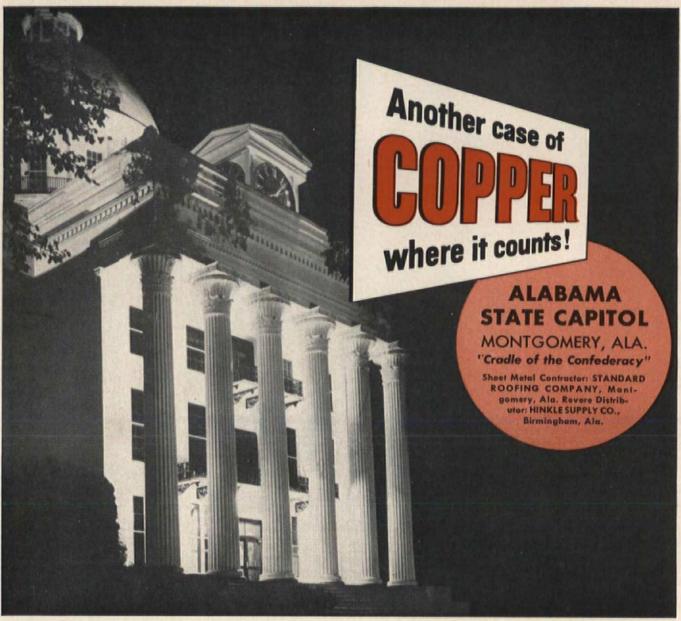
a specially-processed fish oil vehicle that dries, is odor-free, and is formulated in many colors. It may be applied directly over sound rusted surfaces after scraping and wirebrushing to remove rust scale and loose particles. See why nearly every type of industry in the world has relied upon Rust-Oleum for over a quarter century. Clip the coupon to your letterhead and mail today.

RUST-OLEUM CORPORATION

2501 Oakton Street, Evanston, Illinois

Rust-Oleum Corporation	
2501 Oakton Street, Evanston, Illinois	
Gentlemen: I am interested in the complete Rust-Oleum sto	
Please send me the facts and the name of my nearest Rust-Ole	un

AND BRIDE BY SHOWING STATE		
Name		-
Address		-
City	State	



Once again a roof of Revere Copper replaces one of rustable ma-terial. The State Architectural Department was finding that repairing the damage done due to recurring leaks was an expensive proposition. So when they re-roofed they selected enduring, non-rusting Revere Copper.

Since the enduring qualities of copper have been proved for centuries you don't take chances when you use this "ageless" metal. Truly, "Trouble is more expensive than copper." A good way to avoid trouble is to write "COPPER" into your specs. It's the metal that makes itself at home in buildings of the most modern or the

most formal design.

There's a Revere Distributor near you who stocks Revere Sheet, Strip or Roll Copper for flashing and roofing. Write us about Revere Keystone Thru-Wall Flashing* and the new Revere-Keystone 2-Piece Cap Flashing.** And, if you have technical problems, we will put you in touch with Revere's Technical Advisory Service.

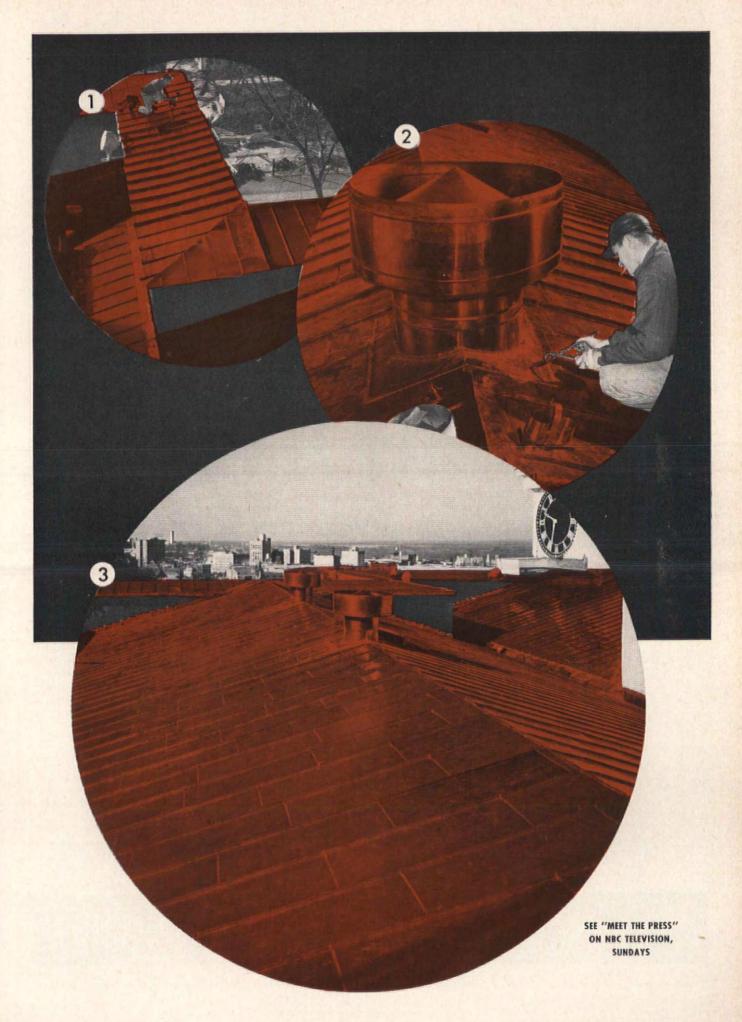
**Patent Pending *Potented

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801 230 Park Avenue, New York 17, N. Y.

Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.— Sales Offices in Principal Cities, Distributors Everywhere.

- PUTTING FINISHING TOUCHES on 6-ft. wide parapet. A total of 32,000 lbs. of Revere 16 oz. Cold Rolled Sheet Copper was used. Installation was made as recommended in Revere's Booklet, "COPPER AND COMMON SENSE." Do you have a copy?
- SHEET METAL MEN prefer copper to any other metal with which to work. One reason is because it is so readily cut, shaped and soldered. A regular iron at regular temperatures is used and there is no need to wipe off the flux after soldering. Working with a metal they like also makes for quality workmanship.
- THIS REVERE COPPER standing seam roof will endure for years and years . . . will not rust. Because the old roof deck was rough and uneven ¾" plywood was used over the old surface, with 15 lb. roofing paper laid on the plywood to form a sound base for the copper.

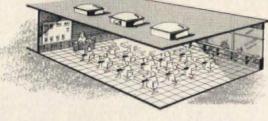


TOPS IN TOPLIGHTING

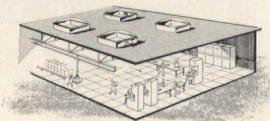
Prefabricated Wascolite Skydomes and Wascolite Ventdomes are used in combinations to achieve maximum. efficient daylighting and ventilation in buildings of every type. Skydome-Ventdome patterns reduce exterior wall perimeters, permit functional use of space - thus cut over-all building costs. Lightweight Wascolite Skydomes and Ventdomes require only simple roof construction - are easy to install, leakproof and economical in use.



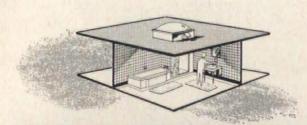
TYPICAL SKYDOME-VENTDOME INSTALLATIONS



Schools - For a classroom 30'x 30'x 9'6", with 30 occupants, using 15 CFM of air per occupant and 5 air changes per hour for room requirements (and to provide adequate daylighting of approximately 30 ft. candles) - use 1 Wascolite Ventdome (Catalog No. HV3652) with 1 air exhaust (total 900 CFM) and 2 Wascolite Skydomes (Catalog No. R3652).



Industrial Buildings - For a building 75' x 120' x 15', to provide 30 ft. candles of daylight and 8 air changes per hour - use 22 Wascolite Skydomes (Catalog No. S5252) and 20 Ventdomes (Catalog No. HV5252) with 1 air exhaust each (total - 18,000



Homes - For a bathroom 5' x 6' x 8', to provide 12 air changes per hour - use 1 Wascolite Ventdome (Catalog No. LV2020) with 1 air exhaust.

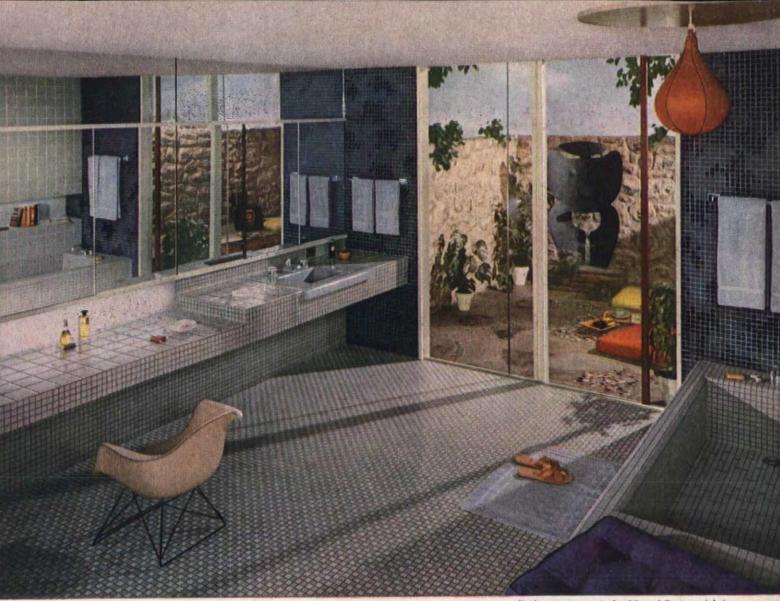
FREE WASCOLITE ENGINEERING SERVICE - Send floor plan and elevation of your project with lighting and ventilation requirements. Wasco Engineers will make recommendations without obligation.

Patent No. 2610593 and Patent Pending.

Wascolite es skydomes

See Sweet's Catalog or write WASCO FLASHING COMPANY.

82 Fawcett Street, Cambridge 38, Mass.



Bathroom-sun patio by Marcel Breuer, A.I.A.

"CLAY TILE...AN INSPIRATION TO DESIGNERS ...A BOON TO THE MODERN HOMEMAKER"

Murcel Braner

Done in subtly blended clay tiles of black, gray and white, Marcel Breuer, architect of UNESCO building, has designed a bathroom-sun garden that may well stimulate salable ideas for your next project.

Roomy, convenient clay tile counter-tops like this will take suds, wear and water for a lifetime. And the tile tub and recessed shelf demonstrates the practical and dramatic effects you can achieve with clay tile.

For durability and beauty, be sure to specify clay tile

floors—walls and wainscoting, too. In the picture a scuffproof, waterproof, no-wax clay tile floor leads invitingly to a sun garden. There, colorful clay tile, crisply accenting the outdoor flagstones, will resist fading and weather extremes for years.

When designing, building, or remodeling consider clay tile's qualities: unlimited design potential, incomparable durability, long range economy and minimum upkeep. Tile is sure to enhance any project—for years to come!

Tile Council of America, Room 3401, 10 East 40th Street, New York 16, N. Y., or Room 433, 727 West Seventh Street, Los Angeles, Calif.

The Modern Style is

tile

PARTICIPATING COMPANIES: American Encaustic Tilling Co. • Architectural Tilling Co., Inc. • Atlantic Tile Mfg. Co.

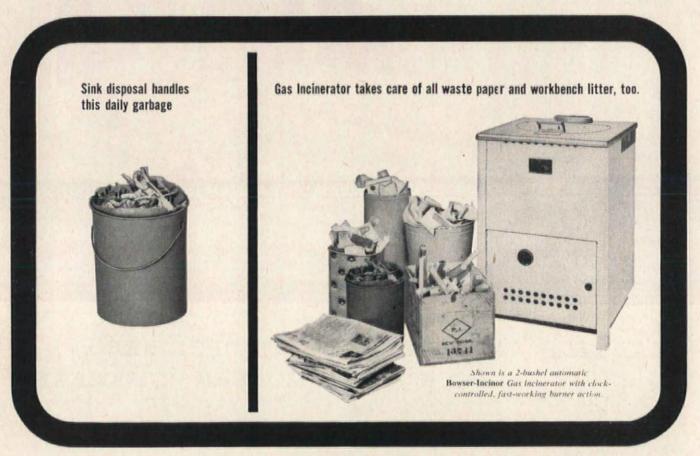
B. Mifflin Hood Co. • Cambridge Tile Mfg. Co. • Carlyle Tile Co. • General Tile Co. • Gladding, McBean & Co. • Jordan Tile Mfg. Co.

Mosaic Tile Company • Murray Tile Co., Inc. • National Tile & Mfg. Co. • Olean Tile Co. • Pomona Tile Mfg. Co. • Robertson Mfg. Co.

Royal Tile Manufacturing Co. • Sparta Ceramic Co. • Summitville Tiles, Inc. • United States Quarry Tile Co. • Winburn Tile Mfg. Co.

A Gas Incinerator does twice as much—sells twice as hard—for the same money

New Gas Incinerators are competitively priced with sink disposal units yet handle trash and waste paper, too.



There's no question about the extra value, the extra sales appeal a garbage disposal unit adds to a house.

Odors, mess, flies, germs, filth, spillovers—all the unpleasant things about garbage—are done away with. With the frequency of garbage collections diminishing in many areas (sometimes delayed weeks in the winter), such a disposal unit almost becomes a must. But when you're considering one for new or remodeled homes, why not pick the kind that has the most talking points?

A silent, efficient Gas incinerator handles everything from vacuum cleaner sweepings to ham bones; from waste wood to waste paper. It leaves a fine ash that need only be disposed of once a week. (The ash makes excellent fertilizer, by the way.)

Installation is simple. Choice is enormous, with more than a dozen manufacturers in the field. The operating cost in most areas averages just a few cents a day.

One last point: building ordinances are usually more favorable to the Gas incinerator.

Look into this matter. Your local Gas company will be happy to help you.



does so much so well

GAS—the modern fuel for automatic cooking ... refrigeration ... water-heating ... house-heating ... air-conditioning ... clothes-drying ... incineration.

AMERICAN GAS ASSOCIATION



In Sweet's catalogue.

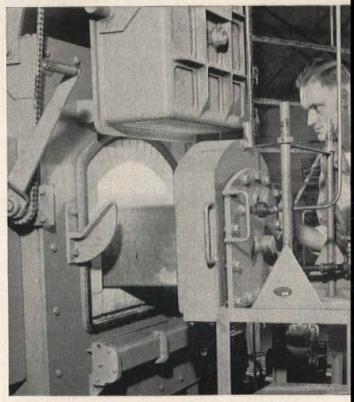
Send for your complete GLIDE brochure.

65° below to 2500° above today in

New Trane laboratory creates "terrible weather" . . . and . . . for industry, homes



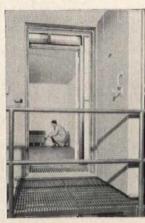
Cold as Siberia—or the stratosphere! This room, capable of creating 65-degrees-below-zero cold, is designed for testing the performance of Trank equipment at low temperatures. Here, a radar tube cooler test set-up is being checked under conditions it might face in some bitterly cold Arctic plane-spotting station.



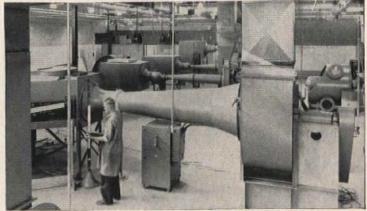
2,500 degrees above in this atmosphere-controlled furnace! Within this furnace may be developed new types of heat exchangers to work efficiently under the ever-climbing temperatures of new processes, much as Trank Brazed Aluminum Surface was developed to provide a more compact, light-weight exchanger for special uses.



Chamber of silence, where a whisper is a "shout." In this soundproofed room, technicians check quiet operation of Transe products. High standards of noise-free operations are vital.



Room-within-a-room is for rating TRANE heating equipment. Refrigerated air is circulated within the double wall, simulating winter conditions. You get assurance of full rated capacity from every Trane unit.



More than a dozen wind tunnels provide the wide range necessary to test all types of TRANE (and other) equipment. A continuous, long-term testing program provides the complete and authoritative performance data that has made TRANE sales engineers

in 90 U.S. offices and throughout the world a dependable source of help and information... and helps make Tranke literature outstanding in the industry. Look to Tranke for the answers to your heating, cooling and ventilating problems.

La Crosse, Wis., and 60 m.p.h. gale!

new machines to overcome it and the nation's defense!



New Trank Research and Testing Laboratory



WITHERING HEAT of a mile-deep African gold mine . . . the numbing cold of an Arctic military post . . . or super-temperatures encountered in new industrial processes—you may find them duplicated, any day, in the new "House of Weather Magic" at La Crosse, Wis.

It's the new Trane Research and Testing Laboratory, an investment in time, talent and the tools of research for developing better equipment—new methods of heating, air conditioning, ventilating, heat transfer.

Trane leadership in these fields stems from such research—research which has produced such outstanding new products as the Trane CenTraVac (hermetic, centrifugal water chiller) . . . UniTrane multi-room air conditioning units . . . the Trane Unit Ventilator for schools . . . Delta-Flo Heating and Cooling Coils, and many others.

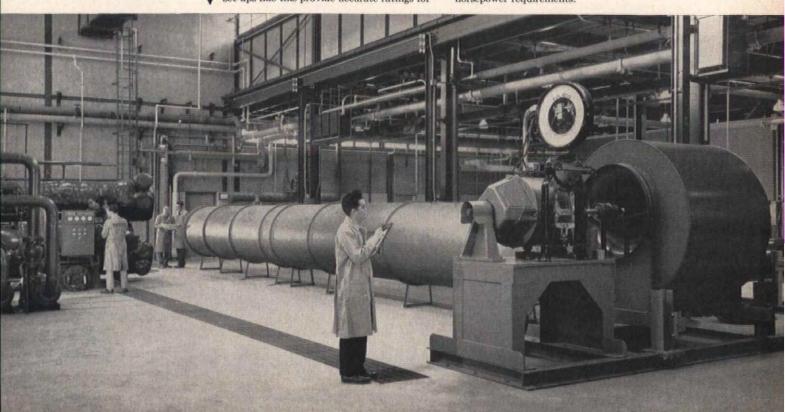
For complete information on the wide range of Trane air conditioning and heating products, call your nearest Trane Sales Office or write The Trane Company, La Crosse, Wis.

TRANE

manufacturing engineers of AIR CONDITIONING, HEATING, ventilating and heat transfer equipment

The Trane Company, La Crosse, Wis. • East. Mfg. Div., Scranton, Penn. Trane Co. of Canada, Ltd., Toronto • 90 U.S. and 14 Canadian Offices

"Big Bertha" is the nickname given this duct used for testing large centrifugal fans. Test set-ups like this provide accurate ratings for Trane Fans, help engineers in their neverending search for more efficient designs, lower horsepower requirements.



No more shipping slowdowns!



Trucks and trailers will never get stuck in this dock approach.



All-weather access assured by snow melting at warehouse ramp.



Snow will never block the truck approach to this mill.



Snow Melting helps industry move what it makes!

Transportation slowdowns, caused by snow or ice at loading and receiving docks, in road or driveway approaches, on private tracks and spurs, are costly penalties to pay when modern snow melting systems are available.

The constant, uninterrupted flow of both raw materials and finished products in and out of plants, warehouses and other business buildings is as vital to the nation's commerce as production and manufacturing itself!

So, where hazardous weather may be expected even occasionally, steel pipe snow melting systems provide practical insurance... while in areas where snow and ice may be every-winter plagues, snow melting stops delay at the approaches dead-inits-tracks!

You would expect, and rightly so, that steel pipe is the favored heat transmission medium for these industrial and commercial snow melting installations. For steel pipe has been the faithful stand-by of industry for more than 60 years . . . for plumbing, heating, fire sprinkler systems, power, steam and air transmission, and a host of mechanical uses. Once again industry turns to this economical and durable product for the panels, coils and runs of its snow melting installations.

Yes, for snow melting, steel pipe is first choice, the most widely used pipe in the world!

Steel Pipe is <u>First Choice</u> Send for new, free 32 page color booklet "Steel Pipe Snow Melting and Ice Removal Systems".

COMMITTEE ON STEEL PIPE RESEARCH

AMERICAN IRON AND STEEL INSTITUTE

350 Fifth Avenue, New York 1, N.Y.



He's Helping Put Up A 25-Story Office Building

That's Malayan tin ore the man is washing, and tin is a key material in modern construction.

Think, for example, of the millions of places solder is needed in any large building in electrical connections, plumbing, air conditioning units and other applications.

Think of the miles of tinned wire used. And recently, a tin-zinc coating has been found to give the best protection against galvanic corrosion to steel bolts, nuts and rivets in aluminum structures. Even tin chemicals are important — in the manufacture of ceramics, blueprint paper and the new chlorinated rubber paints.

From new colorful, practical terne plate for roofing to tin bronze and brass parts for basement boilers and piping, tin plays an essential part today in almost every residential, commercial, industrial or public building you design.

Over one-third of the world's tin is mined and smelted in Malaya. Known as Straits Tin, this metal is at least 99.87% pure and world famous for its absolute reliability of grade.

American architects, contractors and engineers building for the future can be sure that the supply of Straits Tin will continue to be fully as dependable as the supplies of other materials produced in the Free World.



A new booklet, "Straits Tin: A Most Useful Metal for American Industry," tells a factual and intriguing story of the many new ways tin can be used today. A copy is yours for the asking.

THE MALAYAN TIN BUREAU

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INSTALL WIREWAYS FASTER!

SQUARE D's NEW AND EXCLUSIVE

Lay-in Duct

FASTER ASSEMBLY!

LESS NUTS AND BOLTS



FASTER WIRING!

NO MORE THREADING OR PULLING OF CONDUCTORS ... JUST LAY THEM IN



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UNIVERSAL HANGERS



FASTER GANGING!

KNOCKOUTS MATCH THOSE ON RELATED SQUARE D EQUIPMENT. NO CONDUIT BENDING



Square D's exclusive design provides hinged covers for both the duct sections and connectors. Easily removable fitting covers then provide a completely unobstructed wireway in which to

LAY-IN DUCT is available in 21/2" x 21/2", lay wires. $4'' \times 4''$, and $6'' \times 6''$ sizes, in standard lengths

of 1, 2, and 5 feet. There is a complete line of fittings, all with the "lay-in" design feature.

Write for the complete story of LAY-IN DUCThow it gives you a better wireway system, easier, faster and at less cost. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan.

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SQUARE D COMPANY



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Chase

Your clients see Chase Copper
Tube Radiant Heating, Copper
Roofing, and Bronze Insect Wire Screening
advertised in the most popular national
magazines. So they know the name Chase...

know it means *quality*. Chase Copper flashing, gutters, downspouts and bronze screening are corrosion-resistant, rust-free, built for beauty and lasting dependability. Chase Copper Tube for radiant heating has been the finest since Chase first pioneered the use of copper for floor and ceiling installation. Cost? The cost is no more when you consider the long life, better service, lower maintenance costs, top resale value. Give your clients the brand they *know* and have confidence in.





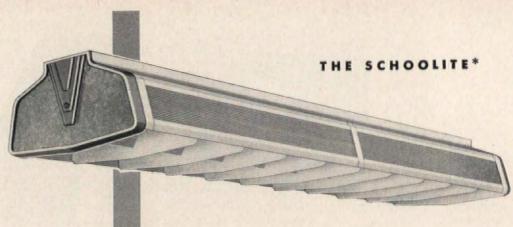
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For
ARCHITECTS
who feel a
SPECIAL
RESPONSIBILITY
for LIGHTING

KAYLINE

the one source lighting line

FACTS ABOUT LIGHTING THAT WILL INTEREST MOST ARCHITECTS

Specifying lighting can be a paradox!

It can be one of the least important or one of the most important requirements of a job.

It is entirely up to the architect because he is charged with the proper selection of lighting.

He can, if he wishes, easily select lighting fixtures from a catalog
fixtures that will meet his requirements serviceably enough.

Or, he realizes that lighting is not mechanical, but is a very important requirement of living. He thinks not of lighting for buildings, but knows that the comfort and well-being of people using his buildings depend upon having the right kind of lighting fixtures.

It is this kind of architect with whom KAYLINE works best—with those who feel as we do about lighting—that it is not like other products, but is one of the most *important* needs of any building.

It is upon this policy that KAYLINE has built its reputation for quality. Our entire organization is geared to give each order the special attention and accurate handling that lighting deserves.

KAYLINE is not a big firm offering a tremendous volume of production at popular prices. We at KAYLINE consider ourselves craftsmen—artisans in the field of lighting fixtures. We value human eyesight. We build to protect it.

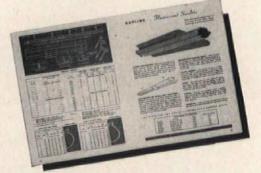
Our lighting fixtures meet the highest standards of lighting experts; they are accurately assembled and carefully tested at the factory: they are simple to install.

If you feel that we are your kind of firm, that we can work with and help you on your lighting problems, we would like to send you the catalog below.

*In it is described one of our widely used fixtures—the SCHOOL-ITE—a KAYLINE fixture created to aid the young eyes of the students for whom you design your schools.

EVEN OUR CATALOG IS DIFFERENT!

■ Kayline's 74 Page Catalog No. 53 not only shows the complete line of fluorescent, incandescent and slimline fixtures but gives information and charts on footcandles of light, light patterns, installation suggestions and other important data. Get a copy for yourself AND your specification writer. Send your request today.



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*Trademark



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Horizontal Unit Heater



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year 'round weather conditioning

World's finest heating and cooling products in a complete range of types and sizes



Quality engineered

Dependable performance

UNARCO

Priced to sell

Eight manufacturing plants

UNARCO

31 sales offices



Get the facts before you buy

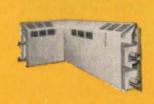


self-contained highboy

2, 3, 5, 7%, 10 and 15 ton cooling

Heating capacities up to 450,000 BTU per hour.

All UNARCO Products are available



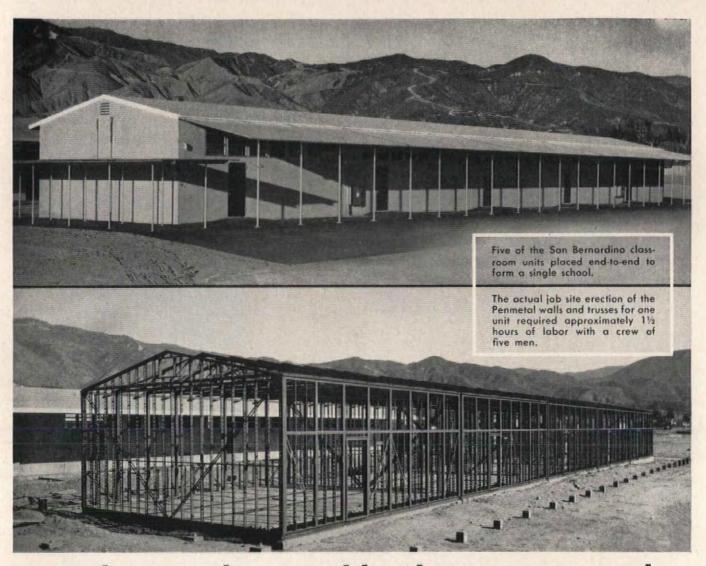
Wall Radiation



Mobile Air Conditioner



AEC Air Conditioner



"No longer do movable classrooms need to be so-called temporary structures"

These are the words of C. K. Allen, A. I. A., the architect who designed forty-seven movable buildings or units for the San Bernardino (California) Board of Education.

Mr. Allen goes on to say, "By the use of LIGHT-STEEL structural members a classroom unit has been designed and built which may, if the necessity arises, be moved where the need is, or may remain where originally erected with a life expectancy of, or longer than, a permanent wood frame building. We like to call these units Permanent-Movable."

Penmetal LIGHTSTEEL structural sections were chosen after several schemes in wood were investigated and found lacking. In moving, wood units would become wracked and the structural values would decrease. They would be expensive to maintain, and would have to be two or three feet off the ground to provide protection against termites.

Because of the fire hazard, the units would have to be widely separated.

By using Penmetal LIGHTSTEEL, the buildings could be made free from the ravages of termites and dry rot, and could be built close to the ground, without dangerous steps. Being very nearly fire-proof, they could be placed adjacent to each other.

Penmetal LIGHTSTEEL structural sections are made in a complete range of studs, joists, channels and accessories. Track sections are sized to fit over, and bridging sections inside of, the flanges of joists studs and channels—a considerable advantage in assembly and welding.

Send for complete details of this unique new method of framing. Ask for a copy of Catalog SS-3.

PENN METAL COMPANY, INC.

General Sales Office: 205 East 42nd Street, New York 17, N. Y. Plant: Parkersburg, W. Va.

PM-35



Combine BEAUTY OF DESIGN with

LOW-COST MAINTENANCE

The design and style of a building may vary, depending upon taste as well as its functional requirements. But regardless of its style, you can enhance its beauty of design, and at the same time assure lowest possible maintenance costs if you specify "Quality-Approved" aluminum windows. No other single building material adds so much to a building's appearance, or subtracts so much from its maintenance budget.

"Quality-Approved" aluminum windows are available in all types-doublehung, casement, awning and projected-to fit your architectural style and plans exactly. They cannot rust or rot, never need painting or costly repairs. They always operate without trouble and they remain beautiful for the life of the building. That's why each year more architects specify more aluminum windows for more jobs.

For a copy of our 1954 Window Specifications Book, see Sweet's (16a/ALU) or write to Dept. AR-6.

insist on Quality Approved

TOP: CHRISTIAN CENTER BLDG., MILLSAPS COLLEGE, Jackson, Miss. Architects: N. W. Overstreet & Associates Contractor: Howie Construction Co. BOTTOM: PAN AMERICAN LIFE INSURANCE BUILDING,

New Orleans, La. Architects: Skidmore, Owings & Merrill Contractor: George J. Glover Co., Inc.



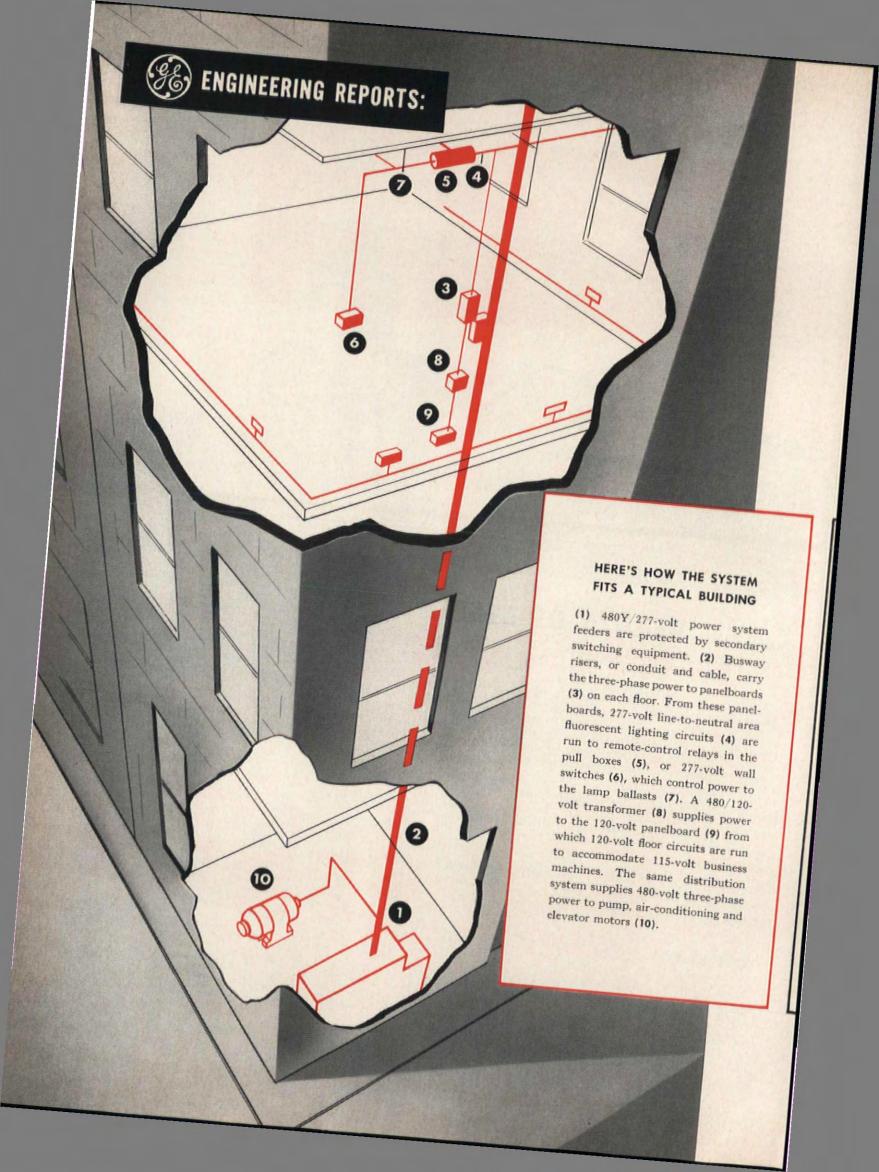
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Aluminum Window Manufacturers Association

74 Trinity Place, New York 6, N. Y.

MEMBERS: Alcasco Products, Inc., Muskegon, Mich. • Aluminum Hame Products Co., Knoxville, Tenn. • The Wm. Bayley Co., Springfield, Ohio • Ceco Steel Products Corp. (Sterling Aluminum Window Division), Chicago, Ill. • Cupples Products Corp., St. Louis, Mo. • Fentron Industries, Inc., Seattle, Wash. Michael Flynn Mfg. Co., Philadelphia, Pa. • General Bronze Corp., Garden City, N. Y. • Hunter Mfg. Corp., Bristol, Pa. • Metal Arts Mfg. Co., Inc., Atlanta, Ga. • Miami Window Corp., Miami, Fla. • Reynolds Metals Co. (Parts Division), Louisville, Ky. • J. S. Thora Co., Philadelphia, Pa. • Timm Industries, Inc., Los Angeles, Calif. • Universal Window Co., Berkeley, Calif. • Ware Laboratories, Inc., Miami, Fla. • Windalume Corp., Kenvil, N. J.



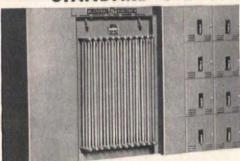
Lower cost power for commercial buildings made possible by General Electric 480Y/277-volt electrical systems

Many kinds of large commercial buildings—schools, department stores, shopping centers, office buildings,—can now take advantage of the flexibility and substantial savings made possible by 480Y/277-volt electrical systems. This economical system has now been accepted for commercial and public buildings by the National Electrical Code. Pioneered by G.E., it is already in wide use in industry. Co-ordinated standard General Electric components, including the

recently developed low-voltage remote-control system, make application easy.

Building owners and contractors: With higher-voltage systems you get substantial savings in initial installations. On the next page you will find figures which demonstrate these savings in dollars and cents for a typical building. Area fluorescent lighting fixtures are supplied at 277 volts, while motors can be operated at 480 volts.

STANDARD G-E COMPONENTS MAKE SYSTEM APPLICATION EASIER



unit substations—Where 480-volt power is supplied, only the switchgear section of the substation is required.



FLOOR-CIRCUIT PANELBOARDS

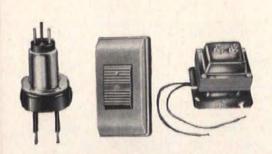
—From these panelboards circuits are run to accommodate business machines, etc.



480/120-VOLT TRANSFORMERS Supply power to floor-circuit panelboard, Type M (above) available from ½ to 15 kva.



G-E MOTORS AND CON-TROL supply more reliable drive and control for pumps, air conditioning.



CONTROL-CIRCUIT TRANSFORMER—G-E 120/24-volt transformer (right) provides 24-volt power to the remote-control relays (left) and wall switches (center).

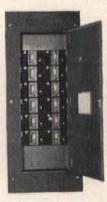


RISERS & FEEDERS can be either busway, interlocked cable, or cable in conduit for distributing 480-volt power to panelboards.



LAMP BALLASTS—This one shown above (rated 265 volts) for use with two 40-watt rapid-start lamps, designed for use with 277-volt systems.





TURN THE PAGE AND COUNT YOUR DOLLAR SAVINGS



Here's how you can save up to 25% with G-E 480Y/277-volt power systems

EQUIPMENT	Old-Style Low-Voltage System (208Y/120 volts)		New High-Voltage System (480Y/277 volts)	
	Estimated Installed Cost	Weight of Copper, Ib	Estimated Installed Cost	Weight of Copper, Ib
REMOTE CONTROL	\$ 6,750	240	\$ 6,750	240
BRANCH-CIRCUIT WIRING FOR LIGHTS	42,450	1,530	29,800	1,100
FLOOR CIRCUITS (120 VOLTS)	28,125	1,080	31,650	2,460
PANELBOARDS	4,950	150	4,515	255
UNIT SUBSTATION	55,300	6,700	36,000	6,500
BUSWAY RISERS	12,400	5,200	6,200	2,200
AIR-CONDITIONING EQUIPMENT	23,370	5,855	17,450	3,470
ELEVATOR AND FIRE-PUMP EQUIPMENT	9,010	2,400	6,470	1,145
TOTAL	\$182,355	23,155	\$138,835	17,370
TOTAL PER KVA	\$121.57	15.44	\$92.55	11.58

BY COMPARING THE EQUIPMENT COSTS of a 480Y/277-volt system with those of a conventional 208Y/120-volt arrangement for a typical building, the economies of high-voltage distribution become readily apparent. As an example, consider a five-story office building consisting of three units 160 x 75 feet each, with total load of 1500 kva. The table above compares the relative

costs for this building. Note that with two exceptions, one due principally to the need for the 480/120-volt transformer for the floor circuits, the high-voltage system results in dollar savings item for item. The total saving is approximately \$30 per kva. Studies of smaller and larger buildings have indicated similar savings in proportion to size.

FIRST SAVING IS IN CIRCUITS. Higher voltage means lighting circuits can carry a much greater kva load. The number of circuits can be halved. Conversely, if increased illumination is the goal, the same circuits used in a 208Y/120-volt system can now carry twice the load.

FURTHER SAVINGS RESULT from the lower cost of 440-volt motors and power equipment. Altogether, a complete 480Y/277-volt system can save as much as 25%, as shown in the chart above.

General Electric engineers specializing in power distribution, lighting, and construction materials are ready to work with your consultants or contractors in applying 480Y/277-volt power to your buildings. To arrange for this service, or for further information about the system and its equipment, contact your nearest G-E Apparatus Sales Representative early in the planning stage, or write for Bulletin GET-2307 to General Electric Company, Apparatus Sales Division, Section 665-122, Schenectady 5, New York.

Engineered Electrical Systems for Commercial Buildings



cut your flooring BILL with

Gold Seal
Asphalt Tile

IT'S
DAMP-PROOF,
TOO!

Gold Seal Asphalt Tile solves some of the toughest problems in the business. It costs so little it can fit into the tightest budget. Its super moisture-resistance allows it to go on or below grade . . . over concrete. Its ruggedness stands up to hard wear. Remember . . . all asphalt tile . . . even Gold Seal Asphalt Tile . . . should be kept out of the kitchen where it may pit under oils and grease . . . and away from strip lumber floors. But when you need a great asphalt tile to solve a budget problem anywhere from schools to hospitals to homes . . . specify Gold Seal Asphalt Tile. Remember . . . it bears the Gold Seal Guarantee of satisfaction or your money back. 27 marbleized patterns color-correlated by the same experts who maintain Gold Seal's color leadership. 1/8" and 3/16" gauge. 9" x 9" tiles.

Our lobster is made of seven Gold Seal Asphalt Tile patterns. Watch...for the Gold Seal Booth, #63, at the A.I.A. convention... Hotel Statler...Boston...June 15 through 19.

GOLD SEAL



Floors and Walls

CONGOLEUM-NAIRN INC.

Kearny, New Jersey © 1954



Architects' Service Dept. Congoleum-Nairn Inc., Kearny, N	AR-6

mercial Areas" which shows the advantages and disadvantages of various floor coverings and recommends where each type should be installed.

Name______

Please send me the illustrated booklet "Which Floor Goes Where in Com-

Organization		
Address	ALL THE PERSON	
City	7	

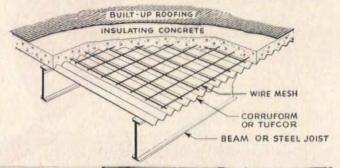
Fire-resistant roofs

THEY'RE QUICKLY AND INEXPENSIVELY
BUILT WITH TUFCOR AND
CORRUFORM... AND YOU ENJOY
ALL THE BENEFITS OF STEEL DECK

In the building of modern industrial roofs, few construction methods have enjoyed greater success than the combination of lightweight, insulating concrete slabs (wire mesh reinforced for continuity). Now Granco offers two ideal deckings for cast-in-place slabs. Tough-temper, firesafe, corrugated steel Corruform for spans up to 4'6" and Tufcor, for spans from 4'6" to 7'. Both are far stronger than ordinary steel of the same gauge and provide roofs with fire resistance, insulating value, low dead-load, permanence and rigidity! For information, write for Engineering Data Section SFg-546, Dept. AR-D, Granco Steel Products Company.

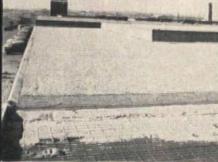


1. STEEL SHEETS ARE QUICKLY PLACED AND SECURED by welding or by clips attached to top of joist as soon as joists and beams are erected. Positive attachment of tough-temper sheets gives added rigidity to roof framework, provides immediate working platform. Tufcor and Corruform are galvanized for permanence, give better service than ordinary painted metal deck.





2. INSULATING CONCRETE FILL IS PLACED on the deck after it has been welded to the beams and a light mesh has been rolled into position. A tight solid base is provided by Tufcor and Corruform, retaining cement paste in the slab and insuring maximum strength. Granco Vent Clips (attached to side lip of the sheet) prevent vapor pressure build-up.



3. A BUILT-UP ROOF IS APPLIED over the slab after it has been cured for 8-10 days. Rigidity of the concrete slab gives strength and long life to the roof. It can't "give" or break under ordinary traffic. Asphalt or tar can't drip through this permanent tightly joined decking and the built-up roof is protected from fire by the layer of insulating concrete.



4. RESULT: A FIRE-SAFE ROOF WITH AN ATTRACTIVE UNDERSIDE. Clean, smooth Tufcor and Corruform steel sheets may be left exposed underneath, using the bright galvanized surface for light reflection, or if desired, any normal ceiling treatment may be applied including paint, suspended plaster, sprayed-on acoustic plaster, etc.

WRITE TODAY!



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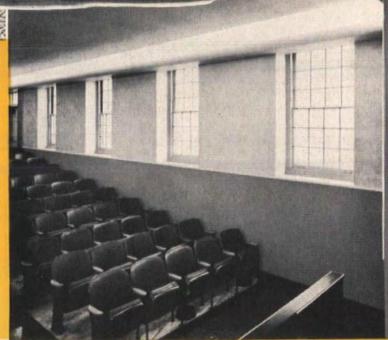
STEEL PRODUCTS COMPANY
Subsidiary of GRANITE CITY STEEL COMPANY
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RTEX V.E.F. FABRICS lower the maintenance cost of higher education at RUTGERS UNIVERSITY

The Lecture Auditorium in the Institute of Microbiology at Rutgers University State University of New Jersey . . .

Thanks to the foresight of architects York & Sawyer, this handsome new lecture hall will continue to serve handsomely as generations of students come and go. For smart and goodlooking VICRTEX V.E.F.* ALGERIA on dadoes and other exposed wall areas, can't be damaged by careless hands and hurrying feet . . . allows the delicate acoustical tile installations to function undisturbed - for a lifetime.



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Garden colors wipe clean with a damp cloth. Why not write for samples of the more than 20 deep-textured Vicrtex patterns today — and confer a substantial degree of maintenance economy on your next commission?

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The nation's topflight institutions, hotels and restaurants have learned the Vicrtex lesson of everlasting beauty and economy. On walls or upholstery, these 3-dimensional, deeply beautiful, vinyl fused fabrics are virtually indestructible. They will not chip, peel, scratch, scuff, shrink or fade . . . and their 36 House &

MILLS: Wharton, New Jersey

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completely pre-assembled and wired for forced hot water heating systems in smaller homes.

Make it **FITZGIBBONS** for every heating job

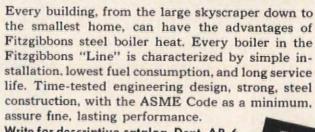


Nº: 7701 Conversion-Boiler for smaller homes.



"400" Series for oil, gas or coal fired hot water or steam systems in moderate size homes.

"R-Z-U" Junior® Series "80" Series for large residences and commercial buildings.



Write for descriptive catalog. Dept. AR-6, Fitzgibbons Boiler Company, Inc., 101 Park Avenue, New York 17, N. Y.



for large buildings and commercial installations.

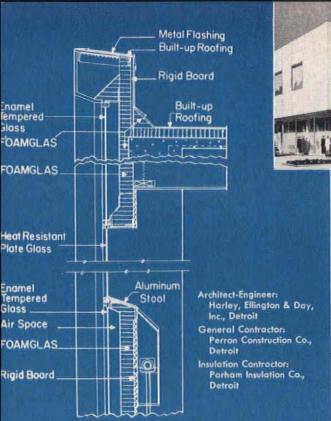


commercial installations.



The Fitzgibbons Boiler [SBI]







Above: New main office and bottling plant for Vernor's Ginger Ale.



Construction above and below vision strip on Woodward Avenue side of building consists of enameled glass outer face, air space vented for condensation drainage, FOAMGLAS adhered to transit and backed up with composition wall board. End wall construction is similar except that enameled porcelain is used in place of enameled glass for the outer face.

On new Jernois Ginger Ale home... FOAMGLAS provides long-life insulating performance

plus unique design advantages

Cellular, stay-dry FOAMGLAS was picked by Harley, Ellington and Day, Inc. to insulate the new home of Vernor's Ginger Ale, soon to be completed in Detroit. Created by remodeling Detroit's old Convention Hall, the new James Vernor Company Building will be comfort conditioned throughout. FOAMGLAS will help to insure efficient, inexpensive operation of both heating and cooling systems . . . and since the sealed glass cells of FOAMGLAS stay dry for lasting insulating efficiency, this saving in operating costs will continue to benefit Vernor—year after year,

Equally important are these bonus benefits which FOAMGLAS is providing on the Vernor job: First—because FOAMGLAS is easily shaped and fitted on the job site, it is ideally suited to the advanced type of wall construction being used (see detail above). Second—strong, rigid FOAMGLAS is used without direct structural support in some locations above and below the vision strip on the front facade. There it supports not only itself, but a rigid board backing as well.

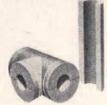
Like Vernor, your clients will benefit from the outstanding insulating performance of FOAMGLAS while you will profit from its unique design advantages. For more information, see our catalogs in Sweet's . . . or send for our new booklets detailing the use of FOAMGLAS for walls, roofs, floors, ceilings, cold storage applications, piping or equipment. Write Dept. B-64.

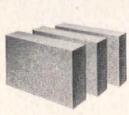


Workman easily cuts FOAMGLAS blocks to fit between steel frame members of sub-structure.

PITTSBURGH CORNING CORPORATION • One Gateway Center • Pittsburgh 22, Pa.









Pittsburgh Corning also makes PC Glass Blocks

Just what the architect!

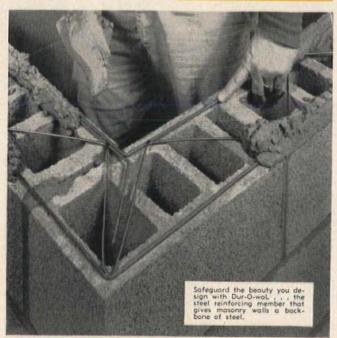
L EADING architects are studying the findings of Dur-O-waL's independent research tests. Now you can specify steel reinforcing for every masonry wall, on the basis of these scientific findings. Trussed-designed, buttwelded Dur-O-waL reinforces vertically and horizontally to combat cracks . . . safeguard masonry beauty.

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Dur-O-wal is electricallywelded in a single plane of high tensile steel (100,000 p.s.i.); knurled side rods increase mortar bond. Your inquiry will receive prompt attention.



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- ONVENIENCE—You can specify smartly styled combinations of switches, outlets and pilots to meet practically any situation. The electrical contractor can assemble them right on the job without an unwieldly inventory of factory-assembled combinations and long waits for special plates.
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For information about the Despard Line® and other P&S® quality devices, just check squares and attach this ad to your letterhead.

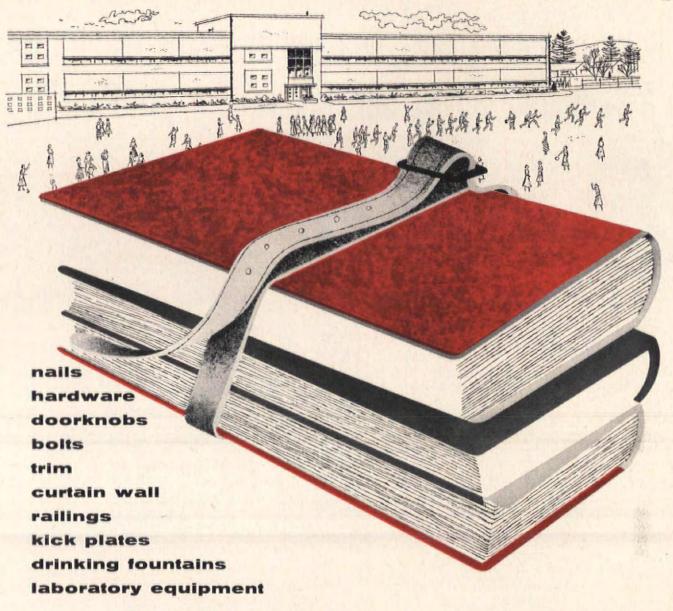
☐ P&S Despard Line ☐ P&S Turnlok® ☐ Polarized Line
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Architects and builders are using increasing quantities of stainless steel for new schools. Its use is justified, not only in terms of appearance, strength and long life, but in lower maintenance costs.

Crucible Rezistal® stainless steel withstands weather and abuse, and is easy to keep bright and clean. That's why it's being used all through the school building — inside and out — for door and window frames, stairways and railings, kick plates,

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You save space and weight, too, when you use stainless steel, for you can use lighter sections without any loss of strength. Let us work with you on stainless applications. Call Crucible for the full story of how stainless has gone to school.



CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

"How modern COal equipment saves us \$9,000 a year and solves our smoke problem!"



Says Albert E. Unruh, Chief Engineer University of Detroit Detroit, Michigan

"Again and again over the last decade, coal burned with modern equipment has proved itself the most flexible, economical fuel for heating our school buildings. We made our first investment in modern coal equipment shortly after the last war. By 'restokering' two existing boilers, we saved \$9,000 the first year—actually \$2,500 more than we estimated. At the same time, we solved a disturbing smoke and flyash problem and provided enough steam capacity to heat additional new buildings.

"We're completely sold on coal. And when our building expansion program required us to further increase steam production, we again chose a modern coal-fired boiler. Coal has proved its ability to handle increased loads and save us dollars year after year. And modern equipment eliminates smoke nuisance."

Additional case histories, showing how other types of plants have saved money by burning coal with modern equipment, are available upon request.

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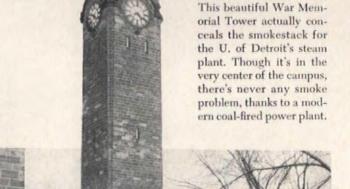
BITUMINOUS COAL in most places is today's lowestcost fuel, and coal reserves in America are adequate for hundreds of years to come.

COAL production in the U.S.A. is highly mechanized and by far the most efficient in the world.

COAL prices will therefore remain the most stable of all fuels.

COAL is the safest fuel to store and use.

COAL is the fuel that industry counts on more and more—for with modern combustion and handling equipment, the inherent advantages of well-prepared coal net even bigger savings.



This is a smokestack.

If you want to cut steam costs, it will pay you to investigate the advantages of modern coal equipment. For example, you may be able to save as much as 20% on fuel alone by replacing outdated equipment with modern stokers and boilers. Or, a small investment in modern controls and other up-to-date, fuel-conserving devices may boost efficiency of your present operation.

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time's test backs your choice of FACING TILE

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Says Mr. I. Greenberg, Lebanon's Chief Engineer, "Facing Tile has helped us to maintain high standards of sanitation with minimum cost. It's simple to clean, and it stands up well in any hospital area—from aseptic laboratory to heavy-duty boiler room."

Facing Tile has been time-tested in every major category of building—public, institutional, commercial, industrial...

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Radio - Isotope Laboratory, Lebanon Hospital, New York, N. Y. Architect: Charles B. Meyers Associate

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Used only by the members of the Facing Tile Institute, it is your assurance of highest quality. In the interest of



THIS SEAL

hetter Facing Tile construction the companies listed above have contributed to the preparation of this advertisement.

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PAUL THIRY'S daring, functional design

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SARCOTHERM HEATING CONTROLS



church of christ the king, seattle, wash. Semi-circular arrangement seats 550 persons with no pew more than 50 feet from altar. Other features: 60-foot carillon tower; covered portico, stained glass clerestory.

TAKE ADVANTAGE OF SARCOTHERM'S UNUSUAL ENGINEERING SERVICE



In A Class By Itself—Sarcotherm's engineering service begins with the inception of the job, carries through every step of the way.

Complete Installation Drawings And Wiring Diagrams—not just general drawings but complete, tailor-made drawings and diagrams for each individual job.

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ARCHITECT PAUL THIRY'S inspiring design for Church of Christ The King is completely functional from its 60-foot carillon tower down to its weather modulated controls.

Radiant heating and the large attendance expected necessitated an extremely accurate, sensitive control system. To do the job, design engineers specified a Sarcotherm Weather Compensated Control System which insures comfort conditions inside regardless of outside temperatures.

Sarcotherm advantages of simple, low-cost, accurate control plus unique engineering service can help you design and install the most efficient system possible. A Sarcotherm engineer will be happy to advise you on your next project.

For full information on Sarcotherm controls, write for complete catalog.

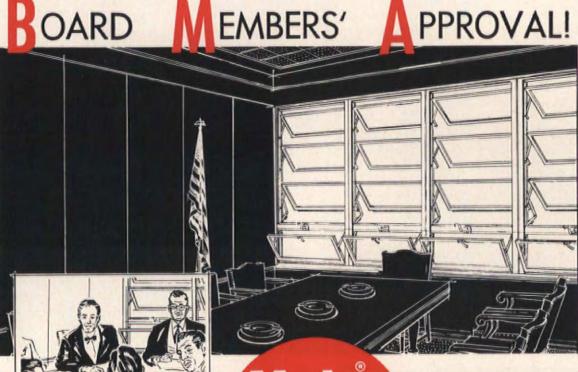
SARCOTHERM CONTROLS, Inc.

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ATTRACTIVE

REQUIRES NO UPKEEP--EVER

In schools, hospitals and corporations, this is the window that wins approval! Board members know the importance of lasting beauty and materials which require no upkeep expenses. That's why they'll appreciate the value of Ualco's heavier sections of extruded aluminum which never rust or rot, never require painting!

They know too, the necessity of 100% or controlled ventilation, such as the awning vents provide, and the draft-free, healthy ventilation provided by the hopper! They like the slim, easy-to-clean beauty and operating efficiency of these windows, too!

No wonder more and more architects are specifying the Ualco Awning Hopper for institutional and commercial buildings!

OTHER FEATURES: Hopper vent operates independently, adjusts for desired ventilation. Awning vents are activated by an exclusive Strip-Proof Operator which unlocks, opens and locks vents in any position up to 90 degrees. Integral fin completely surrounds window, takes brick fin and fin trim. Completely weatherstripped with Koroseal. Easy to clean from the inside.

The Ualco Awning Hopper is self-mullioning, Available in sizes to fit all Ualco Awning Windows.

SEE OUR CATALOG IN SWEET'S ARCHITECTURAL FILE 16A OR WRITE US FOR COMPLETE INFORMATION

Ask about our Engineering Planning Service, designed to assist architects, engineers and contractors in making "take-offs" and solving window problems.

SOUTHERN SASH SALES & SUPPLY CO., INC. - SHEFFIELD, ALABAMA





Leverington Presbyterian Church, Philadelphia, Pa. Toncan Iron radiator enclosures and heating ducts were fabricated by Hansell Sheet Metal Co., Philadelphia.

Toncan Iron Heating Ducts... no repairs during 27 years' service

Here's another example of the endurance and corrosion-resistance of Toncan Iron, the sheet metal that resists rust better and outlasts all other ferrous materials in its price class.

The Leverington Church was completed in 1927. Toncan Iron was used to enclose the nine steam radiators in the church basement. It was also used for the 36 heating ducts leading from the radiators up into the interior of the church. Since that time no repairs or replacements have been necessary.

Over a quarter of a century service in resisting rust and corrosion is not unusual for Toncan Iron. It is an ALLOYED IRON, containing twice the amount of copper ordinarily used in copper-bearing steels and irons—plus just the right amount of molybdenum to make the copper most effective.

Toncan Iron is easy to fabricate. Forming, cutting, punching and welding have no effect on its rust-resistant qualities, which go all the way through the metal.

See Sweet's File $\frac{5c}{Re}$ for more information, or write us for literature.

REPUBLIC STEEL CORPORATION GENERAL OFFICES CLEVELAND 1, OHIO

Export Department: Chrysler Building, New York 17, N. Y.

TONCAN IRON

FOR MORE THAN 40 YEARS... HIGHEST RUST-RESISTANCE OF ALL FERROUS MATERIALS IN ITS PRICE CLASS REPUBLIC REPUBLIC STEEL STEEL

Wainscot of Stark's Ocular Green brightens the school cafeteria, helps cleanliness.



Time-proved ...

STARK

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Stark's Clear Glaze is used in P.S. 112 gymnasium to aid light reflection, reduce maintenance.

TILE protects hard-working interiors at New York's P.S. 112

For this 1,200 pupil New York City elementary school, Architects Eggers & Higgins specified Stark Glazed Facing Tile where wear and tear are heaviest—in corridors, gym and cafeteria.

This rugged, pre-finished material combines economy, good looks, and lifetime durability. It simplifies construction by building wall and finish with a single unit.

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PLUGMOLD

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to more electrical outlets

The WIREMOLD Company, Hartford 10, Conn.

Rely on Wiremold's "Big 4" to solve your wiring problems!

Plugmold Continuous-Outlet Systems — Wiremold Surface Raceways

— Pancake Overfloor Raceways — Wiremold Fluorescent Units.

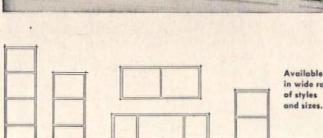
These **RUSCO** Products Offer Unique Advantages For Efficient Remodeling and Modernization



For Window Modernization—or Simplified Replacement

RUSCO Hot-Dipped PRIME WINDOWS
Fully Pre-Fabricated, Ready-to-Install Units

These windows offer exceptional characteristics of design flexibility, weather tightness and economy. Precision-manufactured in complete form—glazed, finish-painted with baked-on enamel, fully weatherstripped, complete with casing. Installation is extremely simple and fast. Units easily joined in series with streamlined non-load-bearing mullions. Available with insulating sash and Fiberglas screen, if desired.



Available in wide range of styles and sizes.

before



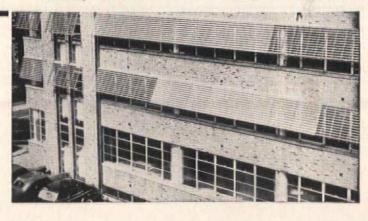
Photos show how Rusco Prime Window units with insulating sash were used to replace old, worn wood windows in Hollenden Hotel, Cleveland, Ohio. Complete replacement effected in hours — room back in service same day!

For Attractive, Efficient, Controlled Window Shading RUSCO Adjustable VENETIAN AWNINGS

FULVUE

VERTICAL

A permanent treatment that gives truly effective control of shade, light and ventilation. Louvers are adjustable from inside with gear operator. You will find Rusco Venetian Awnings an ideal answer to the proper shade treatment so necessary to efficient air conditioning installations. Allow continuous air flow, insulate against heat and dispel it. Available in Bonderized, galvanized steel or alodized aluminum—finish-painted with baked-on enamel.





For Practical, Workable Window Unit Air Conditioning

RUSCO Air Condition WINDOW

The first window unit designed to accommodate any type of window air conditioner. Completely replaces conventional window. All glass panels, including flankers, are removable from inside for washing, eliminating window cleaning problems. An extra lower glass panel replaces air conditioner unit and flankers when unit is removed for storage or servicing.

RUSCO Hot-Dipped Galvanized Steel WINDOWS

For illustrated literature and specifications, write

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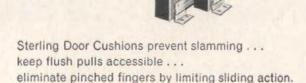


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DOOR CUSHIONS PREVENT SLAM ... PREVENT PINCHED FINGERS



NEW PRODUCT FOR ALL BY-PASSING SLIDING DOORS



Another Sterling example of Better Hardware thru Better Design.

Equip all by-passing doors with new Sterling No. 885 Door Cushions for smoother, quieter, safer operation.

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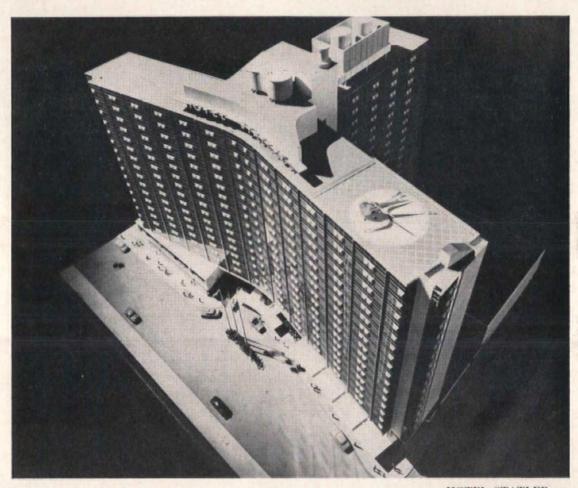
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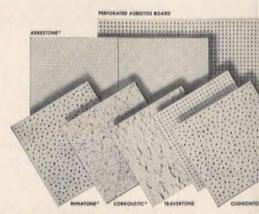
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"Perhaps the life of no other architect so well reveals the dilemmas and choices that have presented themselves to the modern architect; or so sensitively indicates the direction that a more humane culture must take, if it is to save itself from the sterility and dehumanization that now threatens our civilization."

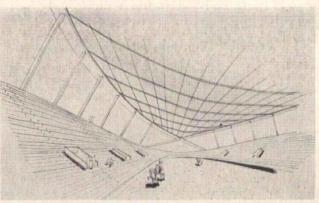
The Life, the Teaching and the Architecture of

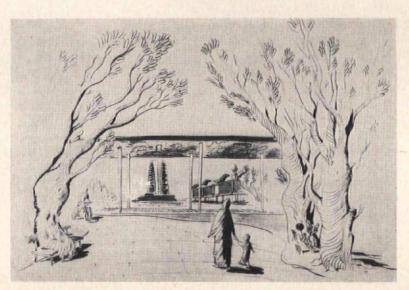
MATTHEW NOWICKI

By Lewis Mumford

This, the first of four articles, deals with Nowicki's early background and education







MATHEMATICIANS AND POETS often do their best work before they are thirty; but in the nature of things, the discipline of architecture requires a longer apprenticeship and it is a rare architect, like John Wellborn Root or Frank Lloyd Wright who gives the measure of his genius before he is forty. Matthew Nowicki * belongs in this special group. Though he left behind even fewer buildings than Root or Wright at the same age, he created at least one structure, the Arena at the State Fair in Raleigh, that establishes his place as definitively as the Monadnock Building establishes Root's. In addi-



Matthew Nowicki

tion, a wide variety of designs, culminating in his plans and sketches for Chandigarh, and a few succinct but brilliant papers on the nature of architecture all add to the impression he made upon those who knew him: that he had every prospect of becoming the outstanding architect of the coming generation.

The impression that Matthew Nowicki made as a man, his sensitiveness to his environment, his depth of feeling, his self-discipline and humility, raised even higher one's estimation of his potentialities as an architect. In him one felt that a new type of man had taken form: one capable of overcoming the barbarisms and automatisms of our time, one who would bring order and beauty, human purpose and the human scale back into daily life. At the time of the wanton plane accident that brought his life to an end, Nowicki was still growing. His Indian sketches, the work of a lonely summer in the foothills of the Himalayas, were already carving new channels through which the currents of his own creativity could flow. Long before, these currents had carried him beyond the well-explored territory of tradi-

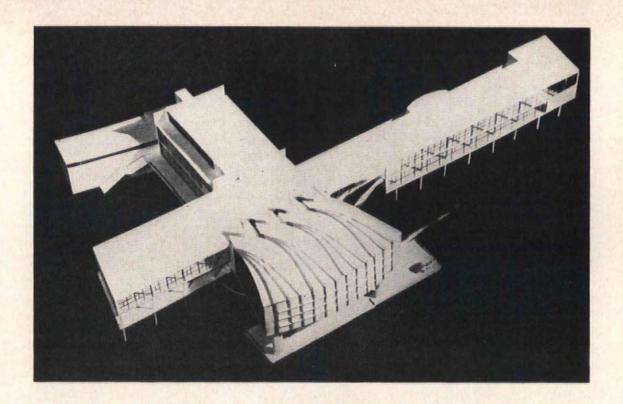
tional forms; and now they promised to take him just as far beyond the fashionable stopping places of the contemporary mode.

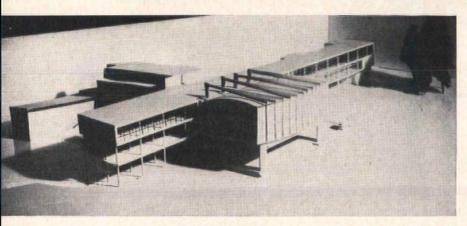
Perhaps the life of no other architect so well reveals the dilemmas and choices that have presented themselves to the modern architect; or so sensitively indicates the direction that a more humane culture must take, if it is to save itself from the sterility and dehumanization that now threatens our civilization. Nowicki's work already showed greatness; but his potentialities go far beyond his visible accomplishment. To understand his life, to follow the process of his education, to evaluate his work, is to have a better grip on one of the great problems that every architectural school is now wrestling with. What are the essential elements in an architect's education? Though genius cannot be manufactured, it may be malformed by bad feeding and it can be nourished by a good diet. Hence Nowicki's reflections on education, which were brought to a focus when he became senior Professor of Design at the School of Design at the State College in Raleigh, N. C. are not the least of his contributions. Fortunately, on these matters, I have his prepared papers and lectures, as well as the testimony of his wife and co-worker, to supplement my own memories of numerous conversations.

1. The Background of a European Modern

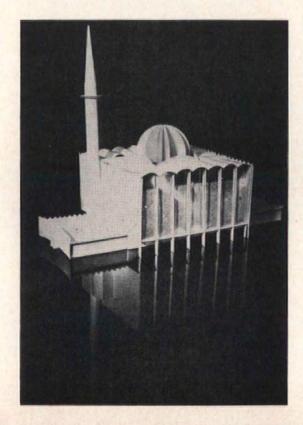
Matthew Nowicki was born on June 26, 1910, into a Polish family that belonged, like so much of Poland itself, to an older day: a family with sufficient means to disregard extraneous economic pressures and sufficient social status to disdain any serious effort to seek wealth and power for their own sake. This is the group, now getting smaller in every country, from which the gifts of detachment, large-mindedness, devotion to public service and high causes, so often come. Though the Nowickis lived in Warsaw, they were attached to the country; and Matthew's father was for long the leader of the Agrarian Party, though in his earlier years he had served as legal expert or Consul in areas as far apart as Siberia, where Matthew happened to be born, and Chicago, where, happily, he spent a couple of formative years during his adolescence, acquiring his knowledge of the English language, and his love for the disarming friendliness and the free ways that characterized American life. When he entered the Warsaw Polytechnic in 1929, Nowicki's main aptitude seemed to be in drawing, rather than in architecture proper, and this school, though affiliated more to engineering than the fine arts, gave him plenty of scope for his talents. His professors in art distinguished here between the needs of the

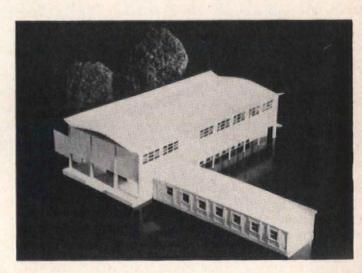
^{*} Pronounced Novitski





The daring and imagination of Nowicki showed in his earliest work. Model photos above and left show his college thesis, done in 1936, representing an architects' building for Warsaw. The model for a mosque (lower left) and the one (below) of a sports center are also examples of work done before the war changed everything in Poland, including architectural thinking. The sports center was completed in time to be destroyed by the first bomb to hit Warsaw. It was built, incidentally, without the little projecting wing; in fact, the model was actually done to show how awkward this part of the specifications would be





NOWICKI'S WARSAW WORK

For Nowicki, as for most of the young architects of Europe in the nineteenthirties, Le Corbusier had found the answer to the problem of modern form. But during the desolate period of the war, he and the architects about him in Poland underwent an experience Le Corbusier had not prepared them for, the resurrection of national sentiment, the desire to recapture the ties - once so easily tossed aside - with their own national past. As a result, the structures Nowicki designed during the war, offices in the Warsaw business quarter, were outwardly classic buildings: classic in feeling if not in detail, with individual

windows treated in a repeating pattern, severe and well ordered.

This mode of architectural treatment contrasted with the boldness of the urban pattern; for here Nowicki had willingly absorbed all that modern planning could give: the superblock, the pedestrian scale within that block, buildings only four stories high to reduce congestion, with only an occasional tower for vertical accent; and he had conceived of using the dismaying heaps of rubble of ruined Warsaw, by placing these buildings on a mound formed of this very rubble, with the avenues running in channels below the levels of the

blocks. The structures themselves, it is true, were conceived on a modular basis; but then classicism itself, strictly interpreted, always had a modular basis.

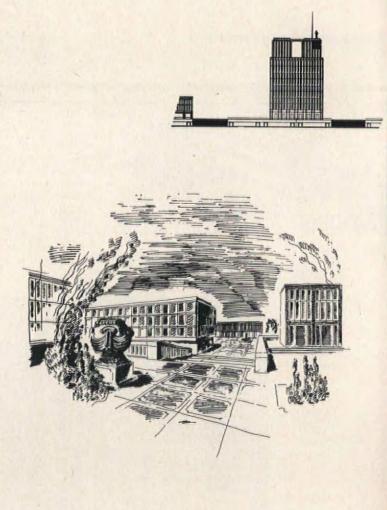
This return to classic order gave Nowicki practice in the planning of free-standing buildings, visible on four sides, set apart by gardens and pedestrian malls. But even at this period Nowicki's inventive genius could not rest content with a classic solution, however well it fitted the modular necessities of pre-fabrication. In his sketch for a public forum, a connecting link in space between the business quarter and the Cathedral across the river, he indicated a circular

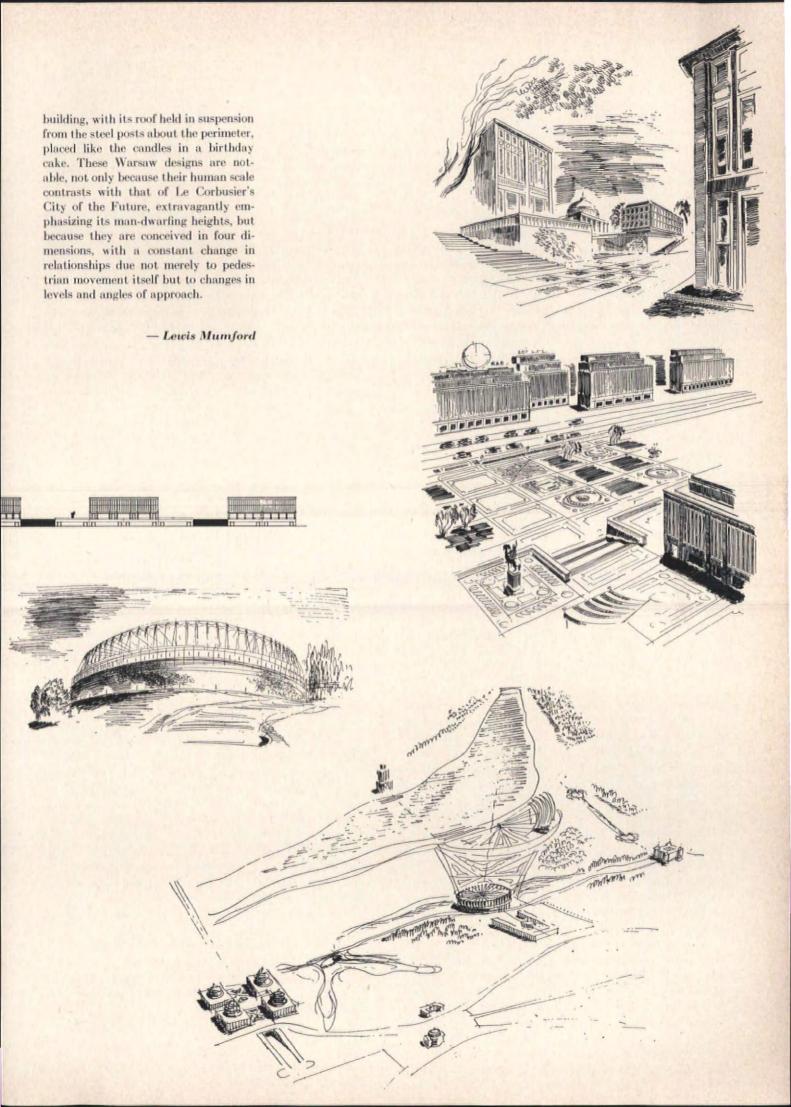
painter and those of the architect: they were interested in drawing, not as symbol and expression, but as a means of opening the young architect's eyes "to the nature of his surroundings," as Nowicki recorded, and to "teach him to see things as structures. To this end a drawing was built, with skeletons of structural lines exposed. In many instances even the use of shades and shadows was forbidden." In other words, drawing, as practiced in the Warsaw Polytechnic, was primarily a means of exact analysis, intellectual as well as visual, and in the end an organ of structural synthesis. In each case, the purposes of architecture defined the method of teaching. That discipline was one of the solid foundation stones of Nowicki's education, and his skill with pen and pencil made it possible for him in later life to translate his architectural ideas swiftly into the third dimension, treating plan and elevation as one, a trait he admired in Frank Lloyd Wright's freehand sketches.

Nowicki's talent as an architect matured slowly, or perhaps it would be more accurate to say that his singular aptitude and originality were at first only slowly noted by others. So many personal qualities were in his favor that his professional potentials were perhaps overshadowed by his social graces.

When his future wife met him at school she had no doubt of his architectural genius; but, as so often happens in academic life, it was she who often carried off the prizes, and it was to her, rather than to her future partner, that her professors looked as to a future architect of distinction. And perhaps her teachers were not altogether mistaken, for from the beginning to the end of his professional career theirs was the closest of partnerships; so close that they had a common signature for the work they did together in illustrating books and designing fabrics. As sympathetic critic and catalyst, if not always reagent, the wife played a productive part in the husband's work.

Nowicki's years of professional study were punctu-

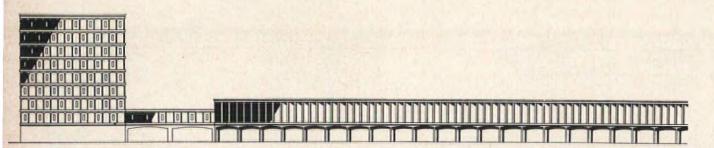




ated by wide travel. Before he was graduated in 1936, he had travelled, sketchbook in hand, over most of Europe, as far as Athens. He even visited Brazil before it became an architectural exhibition piece. His first-year course in Greek and Roman history caused him to spend a whole vacation in Rome, confining his explorations wholly to the historic ruins of the Forum. After that his prescribed course gave a year to medieval history, and two years to contemporary history, starting with Bramante and ending with Le Corbusier: all this in addition to the history of Polish architecture, in which much attention was paid to the traditional wooden structures with their ingenious and highly wrought forms. So thorough was this teaching, so well knit was it with personal explorations, that Nowicki had, as a constant standard of reference, the entire architectural and civic past of Europe, and not a little of America. There was nothing in his education that would confuse originality with

enough money to go travelling. This strenuous professional training was mixed with an equally strenuous and dashing social life: brilliant formal dances, elegant rather than Bohemian, or skiing parties in the Carpathian mountains over long weekends. The pace was swift; the training rugged; the vitality high—all facts that stood Nowicki in good stead during the grim days of the occupation and the even darker days of the "premature" uprising—that uprising the Russians prompted and then betrayed, so that their political rivals, liberal or socialist or conservative, should all be liquidated before their occupation.

The Warsaw Polytechnic in the nineteen-thirties was, like almost every similar school in the West, in process of transition; but that very fact perhaps gave Nowicki the best of both worlds. On one hand was well-knit curriculum uniting traditional architecture, with its humanistic background, and engineering with its scien-



Modular design was a principle much stressed in Nowicki's work, as a basic discipline of architecture. This is a textile mill building for the mill town of Zrardow, Poland

deliberate illiteracy, or would treat contemporary forms as if they existed in an architectural void, like a space ship cut loose from the gravitational pull of history. From the beginning of the course, the students of architecture at the Polytechnic had both a sound and exhaustive training in engineering, and they were encouraged to work on building projects or find a job in a professional architect's office. To make this "work-and-learn" program easier, the students were not kept to the close time-schedule of an American school. Instead of a series of short problems, they had only two or three designs to work on each year, at their own pace. What counted was the finished work. Their professors set the problems and criticized the results. What happened between was the student's business.

So effective was the general education of the architects that in competition with regular Beaux Arts students the architectural students walked away with the honors in poster-making and other forms of commercial art; indeed, it was in this fashion that many of them eked out their wages or allowances and got

tific and technical methodology. At the same time the students' minds were opened to a new flood of critical ideas, esthetic images, social projects advanced by the new leaders of architecture, Le Corbusier, Oud, Gropius. As happened in America, it was the students, rather than the faculty, that clamored to be released from archaic historical patterns: Le Corbusier, in a series of eloquent books and a few buildings that photographed rather better than they functioned, had opened up for them a new world of form. Their professors, when the students submitted a new design might say indulgently, as one of them habitually did: "This is an interesting solution. It contains many good and original elements. Unfortunately, what is good is not original, and what is original is not good."

As with most of his fellow students, Le Corbusier was at first Nowicki's god: the house he designed for his parents in the country was pure Le Corbusier, almost to the last detail. Le Corbusier gave this generation a formula, almost as elementary as a painting by Mondrian, for achieving modern form: the result was crisp,

elegant, photogenic, easily identifiable without reference to any quality except the esthetic one. One built in concrete, or covered brick with stucco to make it look like concrete; one divorced the building from the ground by setting it on columns; one used a flat roof and flat windows that formed a continuous surface with the wall; one avoided ornament and one ostentatiously used a machine form, like a chickenwire fence, as a final symbol of emancipation from the past, of identification with the mechanized present. If the result could not always stand up under inspection as architecture, it was at least identifiable as a symbol of the modern. A machine for living. Was not a truly modern life one dominated by scientific principles and dedicated to the machine?

Nowicki never wavered in his personal loyalty to Le Corbusier, and the esthetic appeal of Le Corbusier's formalism, the latest expression of a cartesian logic that had been born in Alberti and Bramante, long before Descartes himself, never ceased to appeal to him. So it says something for Nowicki's early maturation as an architect that after passing under the discipline of Le Corbusier, he followed exactly the opposite course to that of his master: he sought out the work of Auguste Perret, to pick up all the threads that Le Corbusier had dropped in his attempt to carry into architecture the painter's esthetic of the Cubist and the Purist.

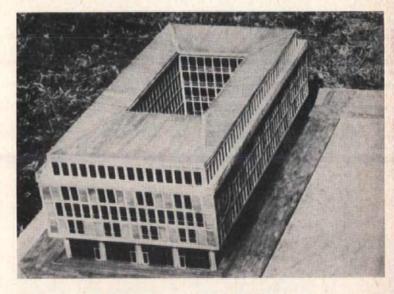
As a beginner Nowicki sought release from historic forms in the two-dimensional freedoms of the painter; then he returned, with Perret, to the four-dimensional problems of architecture, and submitted to the discipline of the structure itself as a work of engineering, not scene painting, and to the highly articulated plan for the orderly and economic arrangement of the functions to be served. Nowicki admired in particular Perret's use of ferro-concrete, and saw in his work the true continuation of the great Gothic builders whose adventurous engineering had been dismissed in the formal designs - usually so unadventurous, if not regressive, in their technical demands - of the Renaissance painterarchitect. In both Le Corbusier and Perret, Nowicki was attracted to the spirit of discipline: but in Le Corbusier it was the discipline of the eye, while in Perret, so-to-say, it was the kinesthetic discipline of the hand and the body as a whole, with the eye cooperating, not dominating. Loving Le Corbusier, he could understand the contemporary meaning of a Palladio, a Vignola, a San Gallo: their buildings, when he beheld them in Italy, exactly met his highest expectations.

Through Perret, coming after Viollet-le-Duc, Nowicki achieved a new insight into the Gothic, a moment in architectural history to which Le Corbusier, in his earlier days, was characteristically blind. By this means Nowicki was prepared for the revelation that came to him when finally, in 1947, he visited Frank Lloyd Wright at Taliesin in Spring Green. For here was an architecture, he confessed to his wife, for which neither Le Corbusier nor Palladio had prepared him. Though as a student he knew every detail of Taliesin by heart,

the living reality overwhelmed him. Le Corbusier's buildings, at best, lived up to their photographs: Wright's masterpieces in their richness of organic form, went far beyond anything that two-dimensional reproduction could convey. What Perret had begun in Nowicki's life, Wright was to complete, though to the end he would be irritated by Wright's idiosyncrasies in detail, and by the same token for Le Corbusier's kind of formal elegance was perhaps deepened by his later acquaintance with the formally impeccable buildings of Mies van der Rohe, in Chicago.

2. The Ordeal of the Occupation

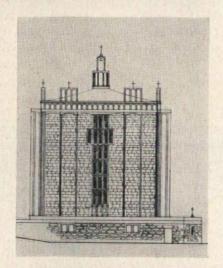
From his professional beginning, in 1936, things went Nowicki's way. He not only became an associate professor of architecture at his own Polytechnic, but his private practice soon was an important one: he received

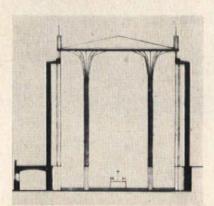


Prefabrication was another principle taken seriously by Nowicki. This model of an office building was a study of design possibilities in prefabrication



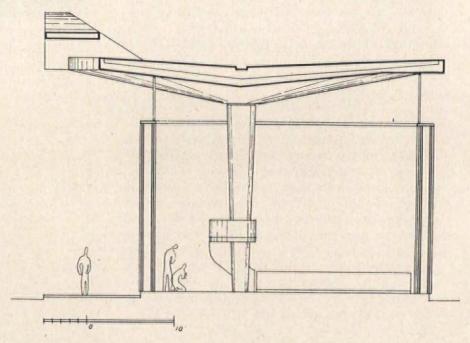






METAMORPHOSIS OF A CHURCH DESIGN

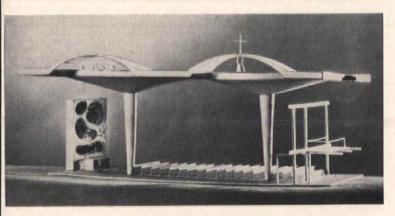
Nowicki's first church design (upper left) is not too far from traditional churches seen in Poland. The larger one (above and left) is a great step forward. Though modular design again introduces a classic note, the wall is entirely separate from the roof, which is supported on tall mushroom columns from within the church. Outwardly the building maintains a sympathy for the traditional church already on the site, and the symbolism of the cross is strongly brought out. Third in this series of churches, designed in Nowicki's Warsaw days (opposite page, section below) represents a still more imaginative use of the mushroom column, and a freer interpretation of church symbolism

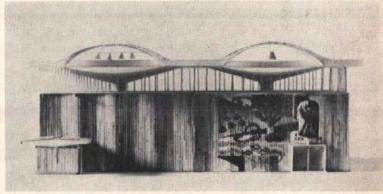


prizes in competitions for office buildings, housing units, houses of worship, the Pavilion for the World's Fair in 1939.

Still. Nowicki had only three years in his professional career, when war came. In September 1939, he was in fact on training maneuvers, as a lieutenant in charge of an anti-aircraft battery. Even at that late moment, in the country immediately menaced by Nazi Germany, war still seemed an absurd impossibility. Nowicki once told me how, on the day it broke out, the Polish army watched hundreds of German bombers fly over their lines, in the direction of Warsaw, bombers easily identifiable as German, without anyone's believing what his eyes saw sufficiently to give the order to fire on them. In the debacle that followed he made his way back to Warsaw, and during the occupation, he conducted underground classes in architecture and town planning, in the face of the Nazi ban upon such activities, while officially he taught bricklaying - an art he had first to master — in a permitted trade school. Those days Polish occupation, which had its parallel in other countries, notably in the Netherlands. Cut loose from international life, oppressed by their enemies, deserted by their friends, the Poles turned to their own national traditions, and sought in their own past to find a precedent for the new buildings the nation would one day erect again. Esthetically, the results were formalistic, even archaic; mainly a return to the spirit of eighteenth century classicism; but humanly, this understanding of the national and the regional elements, disregarded in the evolution of machine forms - though they themselves, in fact, often demand regional adaptations for functional reasons — brought them closer to the underlying human needs they served. Perhaps without this wartime evocation of sentiment, Nowicki would not have so easily come to terms with the pride and folk feeling of the people in North Carolina, and not a little by his personal warmth and understanding prompted them to respond so quickly to the call of modern design.

The final lesson of Nowicki's ordeal was that which





and nights were so filled with horrors that only once did he even give me a glimpse into them: but this sensitive spirit, on whose face every feeling seemed instantly mirrored, underwent daily danger and trial without selfbetrayal. This ordeal culminated in a period of guerilla fighting in the woods around Warsaw and finally in his escape to a distant mountain region with his wife and his little son, born during the occupation.

No one can undergo such experiences without being deeply affected by it. Such an ordeal burns away residual weakness and brings out unexpected sources of strength. In Nowicki it deepened his dedication, both to his art and to the needs of his fellowmen; partly perhaps as a refuge from his macabre memories, he threw himself into architecture, as into an asylum and a sanctuary.

But in addition something else had happened in the

his father had taught by his own life: the lesson of citizenship. Nowicki had grown up under a semi-fascist regime, which had felt too much kinship with the phobias and hatreds and repressions of Nazi Germany to alert itself against its intentions and defend itself successfully. In that state, as in America today, the student generation had become non-political, lest too great a concern for freedom and democracy should interfere with their careers. To the end of his days, Nowicki's father reproached himself for not having dedicated himself more completely to warning his fellow citizens of the dangers he himself had clearly seen. By the end of the war, Matthew Nowicki himself realized that there was no escape from politics: the architect, first of all, had a responsibility to his community, to understand its needs and to create forms for their highest fulfillment. That is why, in his program of education, he not merely stressed the value of a humanistic approach to architecture at North Carolina State College but prefaced it with the declaration that "we expect our graduate to become a citizen first and a professional later."

Since, in a totalitarian state, only the members of the party even partly exercise the full prerogatives of citizenship, the transformation of Poland into a colonial dependency of Soviet Russia would automatically have exiled Nowicki, for the claims of communism, with its know-it-all Marxian ideology and its contempt for freedom were foreign to every part of his nature. Nowicki made his escape to America, as it were, through an open door; for his opportunity came before the communists had achieved their coup d'etat, which removed all pretext of Poland's being permitted to exist as a free, multi-party state. Even before this, the communists were numerically strong enough and sufficiently concentrated in their aims to be the dominant political group in Poland. But so great was Nowicki's devotion to his country's good, so unsullied his record in the Underground, so undisputed his genius as architect and planner, that those in authority made him chief of planning for the central area of Warsaw and let him work on his own terms: that is to say, at his own office, at his own time, without stopping when the official day ended. Seeing how poor were the prospects of genuine cooperation, Nowicki seized the chance offered him of coming to the United States as technical adviser to the

"The study of the well-being of contemporary man, which has been introduced into the language of architecture continues to be the inspiration for our work but this time the quality is differently analyzed, It is no longer 'the machine to live in' that stirs our imagination. It is the eternal feeling of a shelter to which we subordinate our creative ideas."

Matthew Nowicki

Polish Embassy, to enlist American interest in the rebuilding of Warsaw, and to establish contacts with the advances in building, engineering and urbanism that had been made since war had blocked communication.

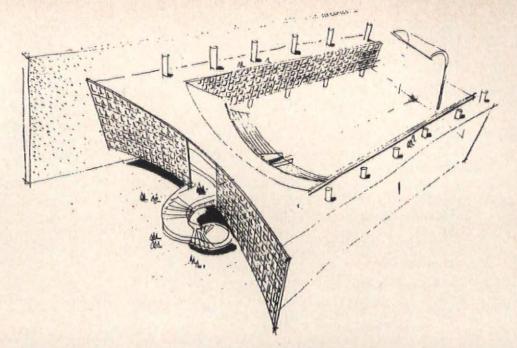
I shall pass over Nowicki's brief period of work as Polish representative in America, first in Chicago, where he devoted himself mainly to awakening public interest in the plans for re-building historic Warsaw, and then in the United Nations, where he was selected to represent the Polish government in the choice of a site for the United Nations. This last responsibility, which took him across the continent to San Francisco, gave him a certain opportunity to show his capacity for leadership, but what was more important, it gave him a first-hand view of the country and some of its

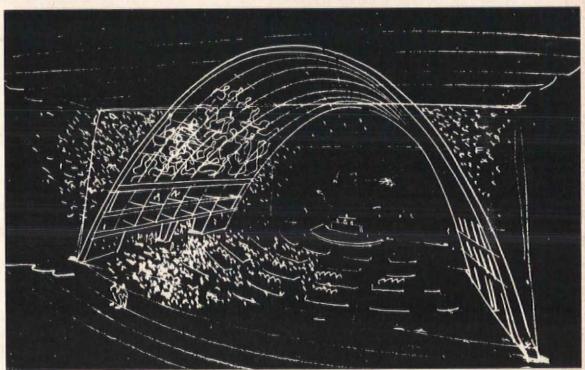
leaders in business and government: re-enforcing sympathies and intuitions acquired in youth. As a consultant to the Director of Planning on the Board of Design, Nowicki came into direct contact with the leaders of the modern movement, a highly diverse group of men, from Le Corbusier to the Uruguayan architect, Vilamajo, whose work independently paralleled that of Perret. As the youngest member of this group, with a more limited achievement in buildings actually built, his influence on his seniors was, unfortunately, negligible: yet perhaps his own development had not, at this point, gone far enough to make him ready to challenge the parti at which their combined talents arrived.

For Nowicki, indeed, the great lesson of this U.N. cooperation was the fact that in spite of the diversity of approach, there was unanimity as to the end to be sought: he felt that in this very unity was proof of the fact that modern architecture had come of age. His own insight into the thousand difficulties that beset this design — an imperfectly formulated program, an insufficiency of funds, the pressure of time that deprived the architects of the benefit of second thoughts - all this would probably have made him lenient toward the defects of the original conception, and generous especially toward that part of the work he had no part in. But in a few years, Nowicki was to indicate, in his sketches for the Parliament Building at Chandigarh, the quality of imagination that was lacking in the design for the entire U.N.

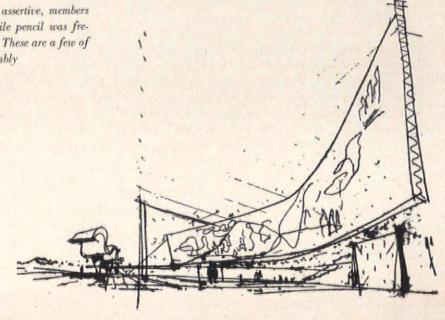
Perhaps the best part of Nowicki's association with the United Nations, in its formative state, was not alone the sense of confidence it gave him as an architect, measuring his own powers against his elder colleague's abilities: rather it was a further lesson in citizenship. Thenceforward, he was no longer merely a Pole, or any other purely national citizen: he felt himself a part of that One World which the United Nations exists to bring to birth. Stirred by his mission in India, one of Nowicki's final thoughts, as reported by Albert Mayer, played with ways of overcoming the architectural disabilities of that country. Out of this came his proposal that America should as a gesture of friendship set up a complete architectural and engineering school in India. This would be part of a larger movement that would bring men of the highest calibre, adept in human relations as well as professional services, on such missions as his own, to devote a few years of their lives to the helping of other peoples, and being enriched, as Matthew Nowicki himself was enriched, by the lessons they would in turn teach him.

That dedication to the service of a United World makes Nowicki, not merely a man of his generation, but a man of the century to come. Meanwhile, his services to the United Nations, as architect, gave him the means to sever his official relations with Poland and to start on a new career as architect and teacher. It is to his ideas as a teacher that the next article in this series is addressed.





Nowicki was one of the younger, perhaps less assertive, members of the U N Planning Commission, but his facile pencil was frequently busy, and his imagination always active. These are a few of many sketches done for the problem of the Assembly



LECTURE AUDITORIUM

LABORATORY SCIENCES

THE STATE OF THE

Architects: Skidmore, Owings & Merrill

Location: Monterey, California

PROGRAMMING THE U.S. NAVAL POSTGRADUATE SCHOOL

by Walter A. Netsch, Jr., Associate Partner in Charge of Design, San Francisco Office

The programming procedure which must underlie any architectural venture is both a subjective and an objective undertaking; it requires thorough analysis of the particular needs of the client and of the potentials and limitations of the job, and a gift for transforming the dry statements of the program into the dynamics of structure, the special needs into line, volume and mass. Not only must this transformation fulfill the requirements of function but, if it is to qualify as architecture, it must also satisfy, visually and emotionally, the users of the structure — whether or not they are aware of this satisfaction. The program makes of architecture a purposeful art; without it, a project has about the same direction as a child's building of blocks.

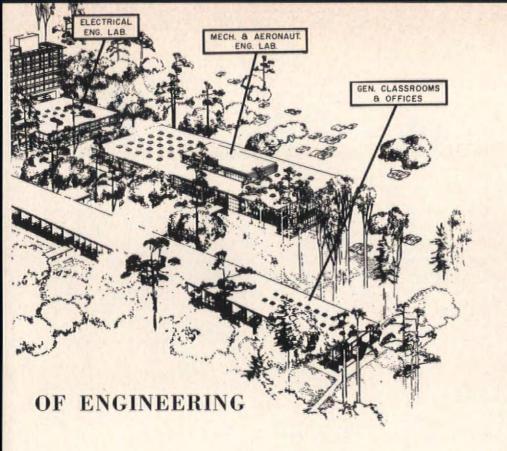
When the Navy began its studies for the expansion of its Postgraduate School of Engineering it faced programming problems for which there seemed to be no immediate answers. Since its founding in 1909, the School had been housed at Annapolis in buildings which had become increasingly inadequate partly because enrollment had been greatly expanded to meet the Navy's needs, and partly due to a broadened scope of instruction. Consequently there was little to indicate what was essential in type and amount of space or in the relation of one kind of space—laboratory, classroom or office—to another; there were few clues even to what might be desirable.

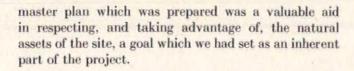
This project was sponsored by BuPers and BuShips of the U. S. Navy and is being constructed under the contract authority and administration of the Chief of the Bureau of Yards and Docks, represented by the District Officer in Charge of Construction, Twelfth Naval District. The Bureau of Yards and Docks had nevertheless been able to work out a schematic for the development of part of the site at Monterey, Calif., which the Navy had bought in 1948 as the new location of its Postgraduate School. The site was the Del Monte Hotel property, on the California coast. In addition to the hotel buildings, the site contained a number of other structures, and many unusually fine trees and shrubs.

Analysis by a Team

Funds for the first new buildings at Monterey to house the School of Engineering - were appropriated by Congress in 1951, and shortly afterward our firm was selected as architects for the project. Since no program as such existed, a team of architects from our staff — Lawrence Lackey, project architect, William Dunlap, John Hoops, Stanley Panski and myself - was sent to Annapolis to make an on-thespot analysis of the requirements and from them to derive the actual program. There was barely one month in which to do this. The analytical procedure was so intensive and unremitting an effort to determine all the implications of the school's courses of instruction that the essential design, in the form of schematic space allocation studies, emerged simultaneously with the completed program.

Although a master plan was not originally included in this phase of the project, it became clear quite early in the analysis that this was not only a necessary but a natural accompaniment of the programming since another group of buildings — the School of the Line — was some day to be built on the site. The interim





Faculty Needs plus Catalog Requirements

The analysis which led to the program had two parts, one an investigation of the faculty's wants and needs in terms of space and function, as well as of interdepartmental relationships, which would make for sound functioning of the school; and the other an examination of the school's catalog of courses.

A close collaboration between the architects and the faculty was essential if a solution that was appropriate both to site and to academic requirements was to be achieved. This took the form of numerous discussions with the faculty members and of questions and answers (in questionnaire form) on the specific wants and needs of each department in space, equipment, utilities and room-to-room relationships. To make this basic information as helpful as possible, and as realistic, the faculty was encouraged to think in terms of the kind of quarters and facilities which would fully answer their teaching needs rather than of the cramped quarters to which they had had to adapt their teaching methods.

The catalog, on the other hand, offered an opportunity to explore the potentials of department needs on a different basis — that of the courses of instruction. The catalog listed 16 "curricula" — courses of study — given in the nine departments of the School. Some departments offer only one course of study: Metallurgy has one such, metallurgical engineering. But others,

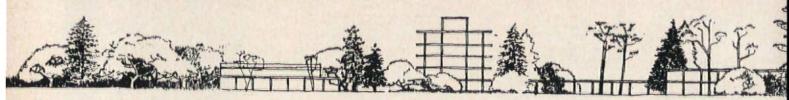






Above, first schematics: BuDocks (top), Skidmore, Owings & Merrill (center and bottom). Below, interim master plan developed after conferences at Annapolis



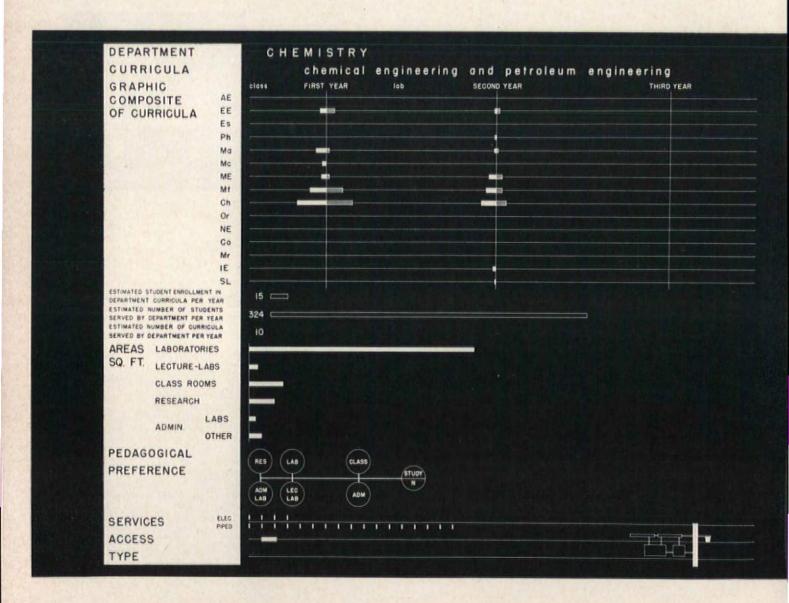


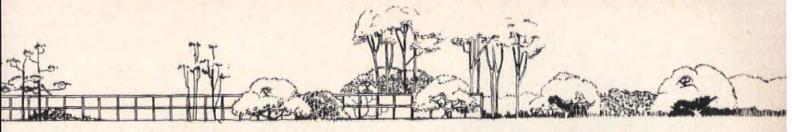
like Aeronautics, which has courses in aeronautical engineering, jet propulsion and gas turbines, offer several curricula. Requirements in some curricula are wholly within the department itself (except for such subjects as mathematics and electrical engineering which are required of all students at the School); some require courses in other departments as well.

The information in the catalog describing the functions of the nine departments, the relationships existing among them, and the 16 "curricula" given by these departments, was converted by the architects into a graphic analysis of the School's whole program of instruction. The charts—one for each department—which resulted from this graphic analysis gave detailed information on the number of hours spent

in laboratory and classroom by the student in each curriculum; number of students in each department and in each of its curricula; and the curriculum in which the student is primarily enrolled. These figures provided the information needed for arriving at the number of classrooms and laboratories required. The area requirements were included on the charts not as absolutes but relative to one another, and a diagrammatic arrangement of these areas, based on the preferences of the department's faculty, was shown on each chart.

Last, but of equal importance, the charts showed the specific utilities which each department needed and indicated whether or not direct access to ground or to roof for special experiments was desirable.





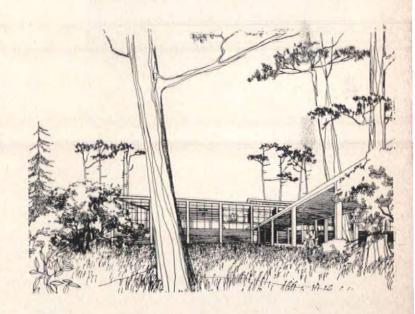
Design Determinants Emerge

The data from questionnaires, discussion meetings with the faculty and the graphic analysis of the catalog pointed to a number of conclusions. One was that certain departments could be grouped together because of their similar requirements in size and shape of space, utility services and equipment. Special considerations supported the logic of such an arrangement. Trends in the electronics field, for instance, indicated that there would be more and more collaborative work between the electronics department and the departments of physics, chemistry and metallurgy. These four departments are laboratory sciences with many similar requirements. Two of them, however, had special needs. The physics department needed basement space for vibration-free foundations, anechoic chamber research and controlled laboratory space; the electronics department had to have an elevated location, above treetops, for unobstructed radar and other antennae installations.

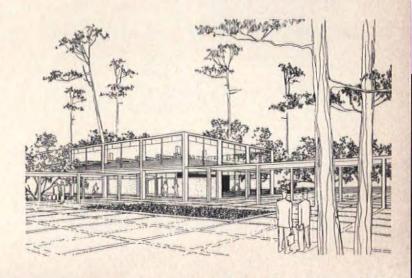
Mechanical engineering and aeronautical engineering also seemed to combine well. Both would have to be located in a relatively isolated area because of the noisy equipment used in their courses; both needed clear-span laboratory spaces. These two departments might be housed in one structure if the special structural requirements peculiar to each could be solved: mechanical engineering needed a ground floor location for large water basins, heavy equipment, a large trench system to provide flexibility in future utility requirements, cranes to move heavy equipment, and reasonably high head room. Aeronautical engineering needed clear-span, high-ceilinged space for its huge testing equipment, wings and fuselage sections, and wind tunnels, with cranes to move this equipment.

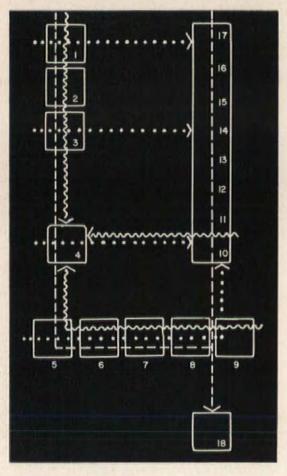
But combination was not the solution for all departments. Electrical engineering was one which did not lend itself to grouping with any other department. It required large unobstructed laboratory spaces and an extensive floor trench system to permit flexibility in electrical circuiting; its heavy electrical loads and generating equipment had to be provided for. Mathematics, which needed only classroom space for its teaching functions, was another department that could not be combined with any other.

There were, of course, other controlling factors in the execution of the schematic design. The funds appropriated by Congress allowed an approximate cost of \$15 per sq ft for construction, a low figure considering that the size and teaching requirements of the project might nomally have been expected to cost \$21 per sq ft. Since a new boiler plant had to be built, and basic utilities had to be installed, the amount of money available for the school buildings was reduced substantially. This extremely tight budget necessitated economy in every phase of the design, especially in the structural solution, and indicated the value of using repetitive elements wherever possible. Multiple use of classroom and similar space, if it could be worked out, would give a greater elasticity to the budget; and in fact became an important means of obtaining the amount of floor area — which the graphic analysis showed to be greater than the budget could otherwise provide — required by the School's program of instruction. Besides these considerations, the Navy had stipulated that the School of Engineering had to be designed to function as a self-sustaining unit.



Mechanical and Aeronautical Engineering Building (above), General Classroom Building (below)





•••> Departments requiring access to classroom building

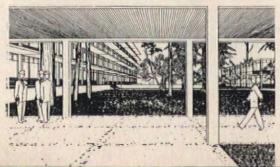
Departments requiring access to electrical engineering department

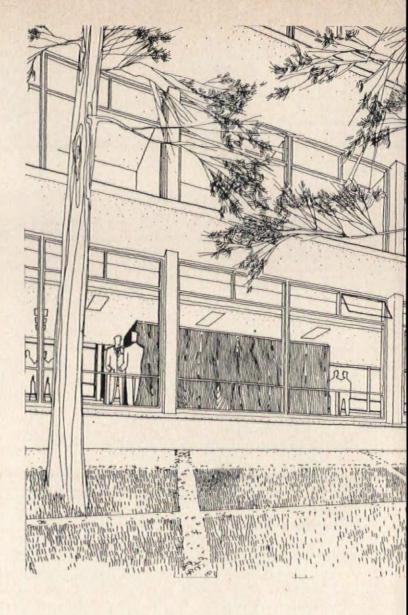
> Departments requiring access to lecture auditorium

- 1. Wind Tunnel Laboratory (Aeronautical)
- 2. Aeronautical Structural Laboratory
- 3. Mechanical Engineering Laboratory
- 4. Electrical Engineering Laboratory
- 5. Aerology
- 6. Electronics
- 7. Metallurgy
- 8. Chemistry
- 9. Physics

- 10. Mathematics and Mechanics
- 11. Electrical Engineering
- 12. General Classroom and Seminars
- 13. Mechanical Engineer-
- 14. Ordnance
- 15. Communications
- 16. Naval Engineering
- 17. Aeronautical Eng.
- 18. Lecture Auditorium







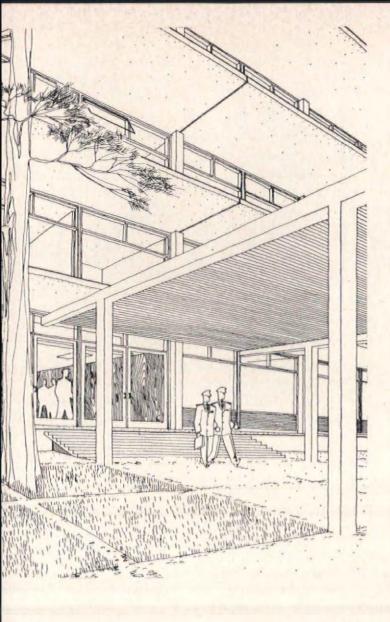
Technical Decisions Reached Early

During the course of the programming, technical questions came up which demonstrated the impossibility of divorcing one part of the design process from another. Even at this presumably preliminary stage, certain technical decisions were made which proved valid throughout the execution of the project. These decisions, along with the program analysis, became the basis for the schematic solution which evolved simultaneously with the actual program.

Schematic Plans Follow Analysis

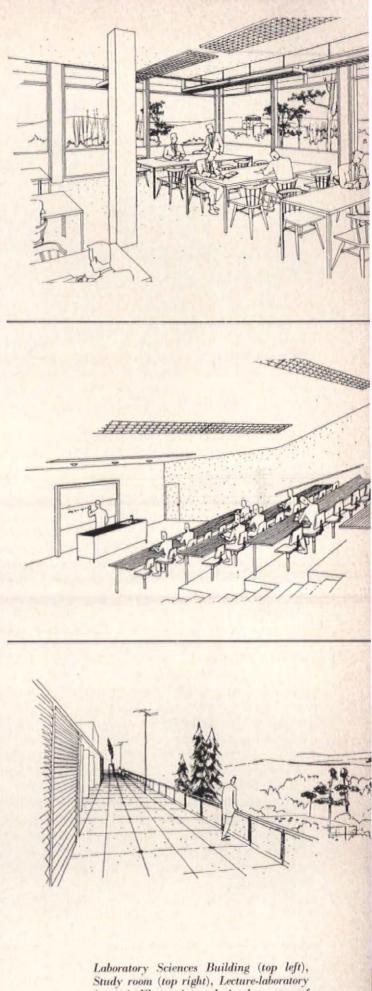
The schematic solution follows closely the groupings by departments which the analysis had pointed out. For the laboratory sciences, whose requirements (laboratory, classroom, lecture-laboratory, research and office space) were so similar, a multi-story building became the appropriate solution. There were advantages to a multi-story solution which were important, even vital, to the project. One was the economical site utilization it made possible; another was the economical construction which stacking the laboratories, with their

Laboratory Sciences (left) and Electrical Engineering (right)

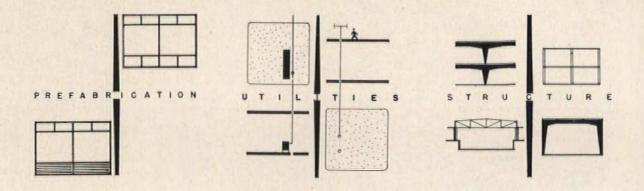


expensive utilities, one on top of another would mean. Eventually the building became a five-story one, the added floor housing some of the administrative offices, conference rooms and faculty rooms, for which a central location was desirable.

The roof deck areas of a five-story building are clear of the treetops in the School's grounds, and this elevation could satisfy the requirements of the electronics department for unobstructed installation. Aerology, which needed a high elevation for its experiments. could also be located on the roof. Other decisions were also made at this time: the piped services to the laboratories would be suspended in racks from the ceilings, for ease of maintenance, access and possible future expansion. Knockouts in the floors would simplify floor-to-floor access for piping, wiring and research, and similar knockouts in the roof would give access to antennae, wave guides and experimental laboratory equipment in the fourth- and fifth-floor electronics laboratories. Floor trenches could accommodate the great variety of electric wiring in the electronics department. Flat plate construction would eliminate all beams and girders which otherwise would have interfered with the mechanical and laboratory distribution system.



Laboratory Sciences Building (top left), Study room (top right), Lecture-laboratory (center), Electronics and Aerology on roof of Laboratory Science Building (bottom)



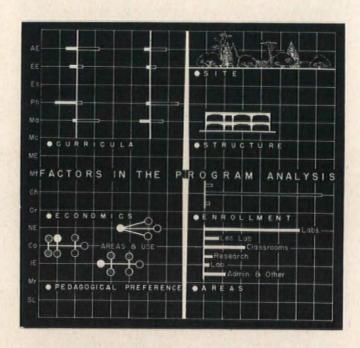
In the actual design process these ideas were refined and expanded as necessary, but the basic decisions were not changed. The real determinant was the provision of optimum working and teaching conditions within the framework of the structure and mechanical services, not only in the laboratory sciences building but in the others as well.

The requirements of the electrical engineering department added up to a two-story building in which long-span concrete arches could provide the large unobstructed floor areas it needed. Logic dictated the use of floor trenches for electrical wiring and for flexibility in its arrangement, and the same suspended racks for piped services as were suggested for the Laboratory Sciences Building. Mechanical engineering and aeronautical engineering requirements also resolved themselves into a need for a two-story building. Broken down into three units separated by expansion joints, the building could provide the work spaces of varying sizes and clear heights needed for equipment both bulky and small. Special structural requirements could be solved separately since the building was actually to be three units. These buildings were primarily laboratories; their specialized space could not be used for general classroom teaching. Since most of the departments needed just such classrooms, and it was not practical to locate classrooms near laboratories where noisy equipment would be used, the idea of a separate classroom (and office) building developed, and became a long, two-story structure located so as to act as a link between the individual laboratory buildings and the laboratory sciences building - a relationship worked out from the catalog analysis. The classrooms in this building can be scheduled by any department, a multiuse feature which helped keep the whole job within the budget.

Still another kind of space was needed. The catalog analysis indicated that an auditorium should be provided for special lecture courses and for public and semi-public occasions. This building was not programmed at the same time as the others described here but its need was determined by the same processes that produced them, and its location was set on the preliminary master plan.

Other Factors Influence Design, Too

An undercurrent in all our discussions of the project was the matter of the design character of the buildings. We felt that harmony between building design and the area's regional architectural character was as much a factor to be considered as full utilization of the potentials of the site. Instead of trying to achieve a harmonious relation by following local tradition, we decided to work toward it by relating the mass and volume of the buildings to the site on which they were to be placed, and in a way, the site itself was the key to this solution. The contours of the land and the three-dimensional qualities of the many kinds of trees (eucalyptus, pine, redwood, oak and others) on the site were a natural parallel to the same qualities in the buildings. The balanced and at the





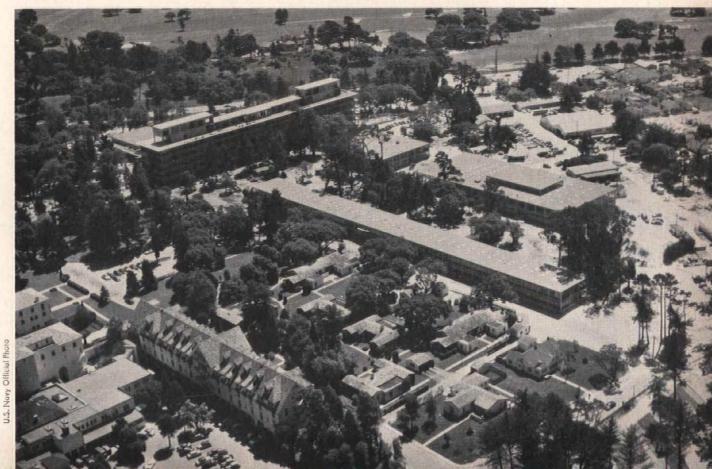
same time free relation of the natural forms to each other suggested a similar plasticity in the architectural forms. But too much plasticity would be inconsistent with the architectural, educational or economic disciplines which the School should express, so a definite, intentional order was injected into the design, in the form of a basic column spacing of 18 ft 8 in. and a standard unit of fenestration.

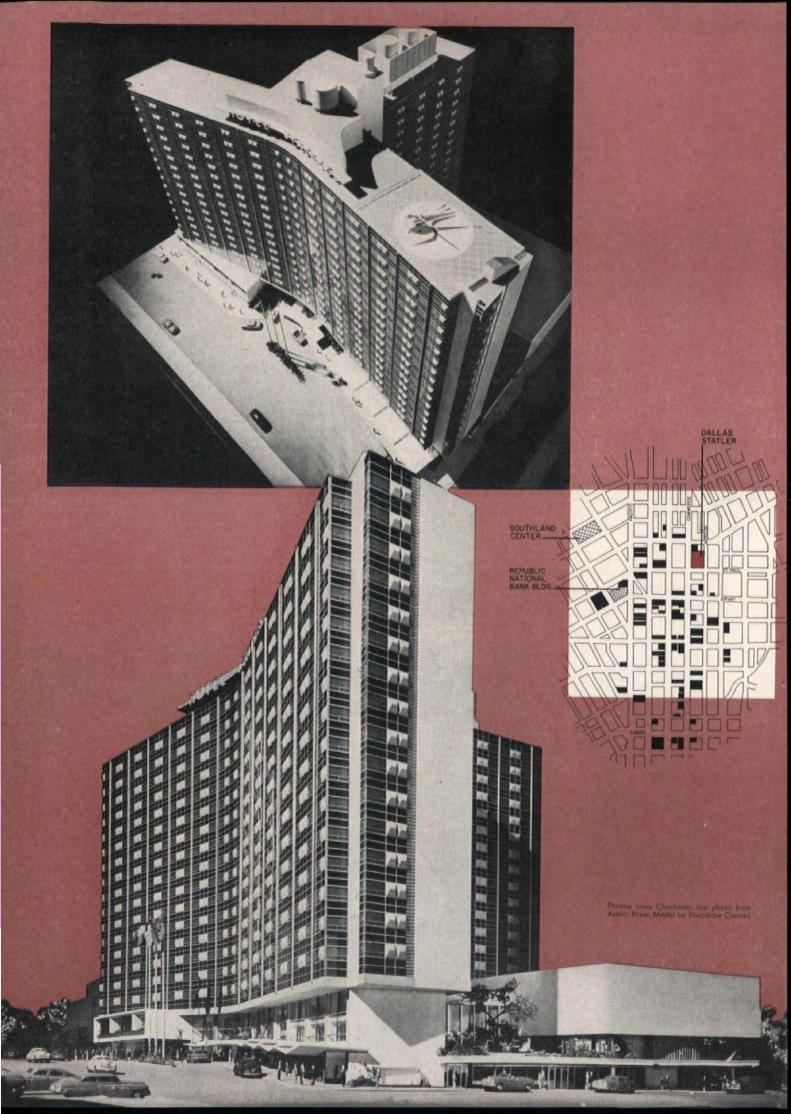
The program, therefore, became the basic instrument for the resolution of the design. No matter how well annotated or analyzed, however, the program is only one factor in the synthesis which becomes an architectural composition. The technical aspects of the structures themselves, the environment, the master planning of the group, the existing buildings on the site, and the detailed development of the individual technical problems were all factors in the eventual

resolution of the design problems at Monterey. The ultimate value of a project, not only as something useful but as something which is creative of an environment, depends on the proper order and degree of all the facets of design.

The interest and cooperation of Navy personnel and the School's faculty, which made possible the programming of this project, have continued throughout its execution; as a result, the design data developed from the program analysis has been further crystallized and refined.

The School of Engineering is scheduled for completion in the summer of 1954; those other factors whose careful consideration is necessary to a full realization of the program can be evaluated only when the project is finished. The completed School will be published in ARCHITECTURAL RECORD.





ON A 56,510 sq FT SITE on Commerce St. in downtown Dallas, Hotels Statler Co., Inc. is building a 1001room hotel, the 18-story Dallas Statler. Currently a hole in the ground with columns beginning to rise from footings, it is expected to be completed in mid-1955 at a cost of \$14 to \$15 million. Billed by its proud owners as "the first multi-storied building in the world to make full use of flat-slab cantilever construction," and as "one of the largest projects of its kind developed anywhere in the world in more than a quarter of a century," it will have an exterior skin of glass, aluminum and prefabricated porcelain enamel panels. Its high-velocity peripheral air conditioning system has insulated vertical supplies exposed on the building's exterior, resembling half-round multi-story pilasters which discipline the patterned façades. This system will serve the guest rooms; public areas on the lower floors will have conventional low-velocity air conditioning.

(3,106,480 cu ft or 50.5 per cent) and public and service areas (3,038,520 cu ft or 49.5 per cent) as compared with the 50–50 ratio considered optimum for a large metropolitan hotel.

Completed, the Statler will embody a number of other "firsts" for Dallas: its Terrace Room and Cafe Rouge will be separated by a curtain whose position can be changed so the Terrace Room can serve more people than can be accommodated in any present Dallas supper club or nightclub. Its two principal ballrooms will be divided by a new type of folding partition; united, the area will seat 2000, which Statler says is 400 more than any other west of Chicago. 3,029 persons can be accommodated on the function floor at one time. If all goes well, on the roof will be the Statler Heliport, first of its kind (Fort Worth's Western Hills Hotel has its own ground heliport) — though the city fathers hesitate to agree.

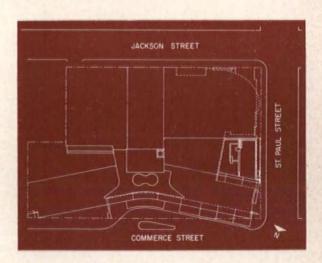
THE STORY OF THE NEW DALLAS STATLER

Behind the undertaking were months of deliberation, by Statler's Building Committee and their architect, which culminated in certain decisions: to build a large commercial hotel during 1953-54 when few others were scheduled and those few generally smaller or of the resort type; to select a potentially successful city and site; to employ sound structural and mechanical techniques whether or not these might be conventional; to determine the amount and disposition of public, rental and guest spaces in wings widely spread so guest rooms would not face each other across courts, and to set the actual number, size, equipment and decoration of public areas, guest rooms, service areas and administrative offices. The results now taking form in the Dallas Statler are a natural consequence of the company's experience in Boston, Buffalo, Cleveland, Detroit, New York, St. Louis, Washington, D. C., Los Angeles, and Hartford, Conn., where another new Statler will open shortly. Unlike some of these, the Dallas Statler will contain no rentable office space. However, it follows evolving Statler tradition in its cannily chosen site, in the heart of the theater and shopping district near Neiman-Marcus' department store and two emerging Dallas landmarks, the Republic Bank's skyscraper (A. R., April 1954) and the just-announced Center now being designed for Southland Insurance; a block from a proposed express highway; easily reached from air and railroad terminals and bus lines. Statler experience is evident, too, in the grouping of public areas on lower floors; in the gardened court with its reflecting pool; the 17,620 sq ft of space for stores and shops; the balance between guest rooms

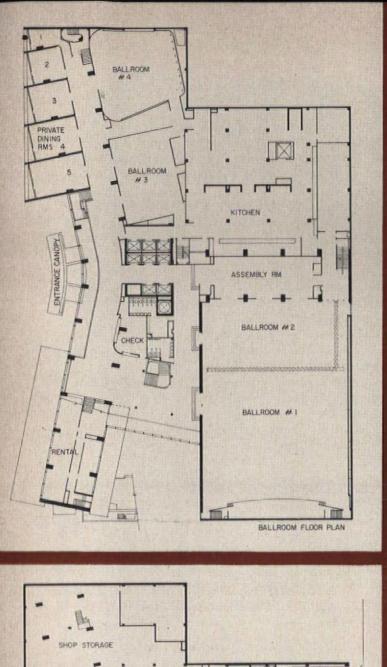
Architect: William B. Tabler

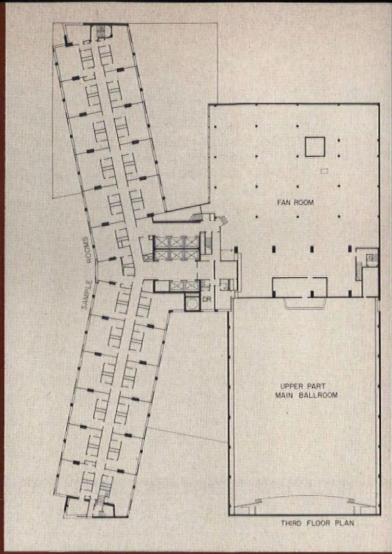
Engineers, Structural: Seelye, Stevenson, Value & Knecht; Mechanical, Electrical: Jaros, Baum & Bolles; Electrical Associates: Smith & Silverman

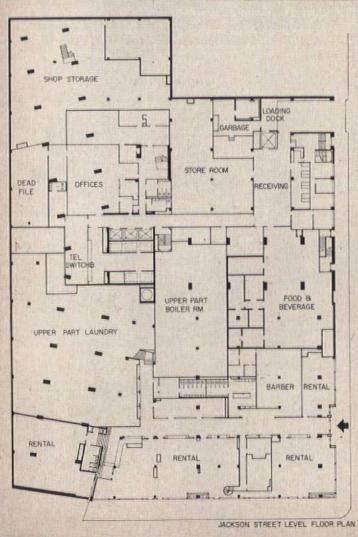
Builder: Robert E. McKee, Inc.

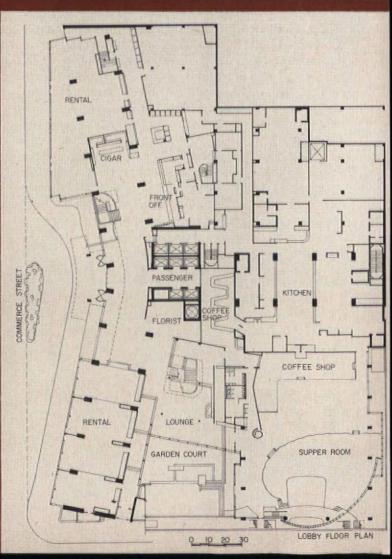


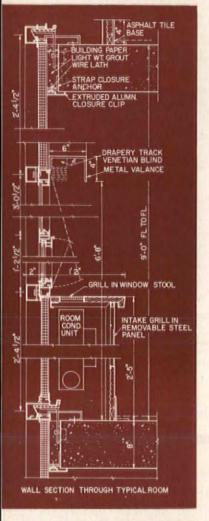
Statler Building Committee: William L. Marcy, Chairman of the Board; Arthur F. Douglas, President; Harold B. Callis, Senior Vice Pres. Decoration: Statler Studios, Inc., Ernest Wottitz, head designer. Food and Beverages: John B. Grande, Vice Pres. Kitchens, Laundry: W. Randolph Leber, Vice Pres. Financing: Robert L. Sussieck, Vice Pres. and Treasurer; financing by Aetna Life Insurance Co.







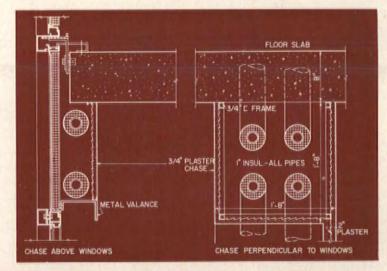




Air supplies, heating and chilling water and returns, all in vertical mullions, supply the individual room conditioners. Midway up building (9th or 10th floor) are piping expansion loops (right)

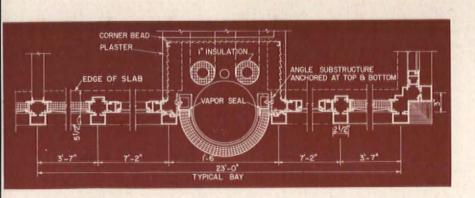


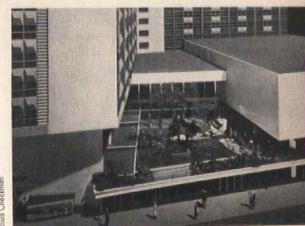
The Statler will be Dallas' only Commerce St. building not built out to sidewalk; landscaped main entrance drive will minimize interference with street traffic. Function floor, up broad stairs from lobby so elevators won't be needed, will provide, with other Dallas facilities, enough space for the largest convention. Main ballroom area is to be a steel-framed, windowless, air conditioned cube with specially designed cold-cathode lighting.



EQUIPMENT: Main kitchen will serve the two restaurants; another, the banquet and function rooms; a third, employee's cafeteria. Kitchen location, equipment and traffic flow are designed for efficiency: raw materials from truck dock in one end, finished meals out the other. Terrace Room dance floor will raise for floor shows, lower to form skating rink. Elevators will be high speed automatic (700 fpm), radio equipped

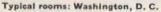
WALL CONSTRUCTION: glass areas (picture windows and vents) hinge at top, swing in as units for washing when unlocked with a key. Solid panels are porcelain enamel backed with glass fiber board and asbestos-cement interior surface, held in light aluminum glazing sections





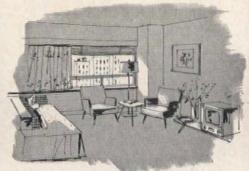
To Charlmar







Los Angeles, Calif.



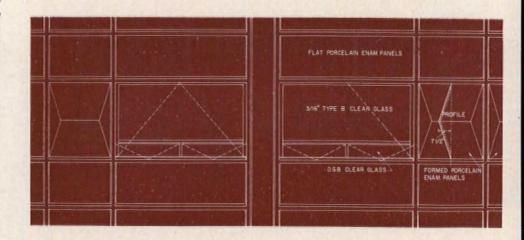
Hartford, Conn.



FAÇADE DETAIL above, pair of rooms emphasized in color; at right, exterior elevation of typical bay fronting a pair of rooms, one single, one double. Square porcelain enamel panels are to be shaped to increase rigidity.

STRUCTURAL SYSTEM is reinforced concrete in guest room wings, with flat slab floors cantilevered from a double row of interior columns. There are to be no exterior columns at all; insulated metal and glass skin is to be hung from slab edges. Rectangular interior columns will increase in thickness on lower floors, are 23 ft on centers, determine placement of thin partitions (see plan g, facing page)

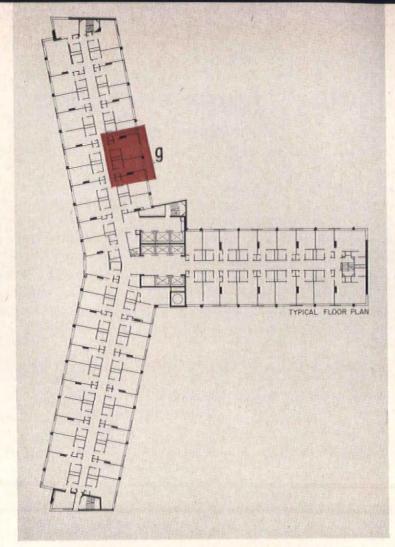
The guest room wings' unusual structural system, exterior skin and air conditioning layout have been studiedly integrated; their flat slab floors, carpeted above and painted on the underside, are both structure and finish. This leaves nowhere to bury utilities, nor do the 2-in. plaster partitions provide room for anything more than electrical conduit. Air conditioning supply lines, then, are literally pushed outdoors where, as previously noted, they look like structural elements. Such a demonstration of ingenuity is forced by the high construction costs encountered today if a reasonable cost per room is to be realized; instead of accepting the smaller rooms which conventional construction might have entailed Statler has chosen to maintain the quality of its accommodations. As now planned, most Dallas guest rooms will have studio beds and furniture designed by Statler Studios, individual air conditioning units, "Servadors", TV-radio sets, venetian blinds, drapes. Bathrooms, like those in Hartford and Los Angeles, will have lavatory-dressing tables, toilets angled to become dressing table seats, wide mirrors, oversized medicine cabinets (backs removable for access to plumbing shafts), incandescent lights, and the Statler towel hook - which the Company expects to cause a saving of \$15,000 a year in laundry and linen replacement.

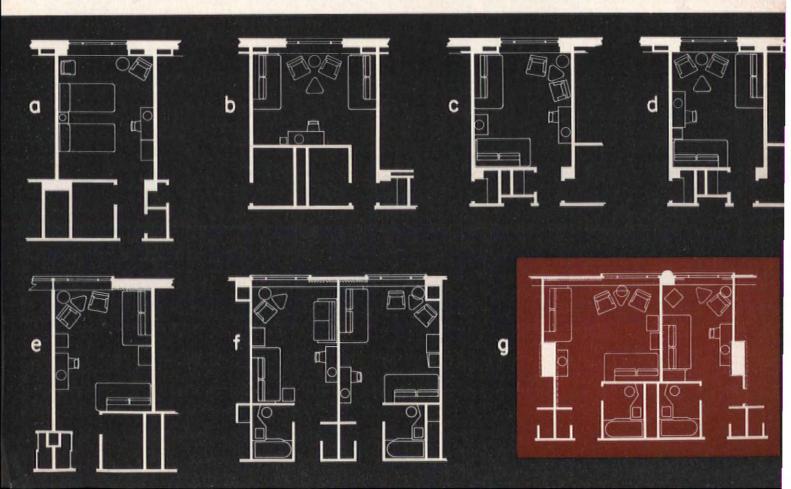




Dallas, Texas

Evolution of Statler studio bedroom: interiors above and left, plans below. Early conventional bedroom (plan a), 11 to 12 ft wide, was cluttered with furniture. Turned 90 degrees (b), furniture arrangement improved but amount of exterior wall increased. c and d show first rooms designed as studios (Washington); e is Los Angeles; f, Hartford where single and double rooms were paired; g, Dallas, where the designers' ingenuity will produce rooms slightly larger than recent examples





WHAT DOES A GOOD HOUSE COST?

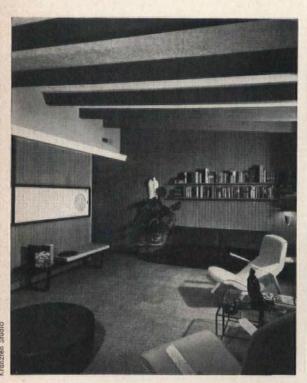
Three Approaches to the Budget Problem

Cost control in house design starts, as architects often have to explain to their clients, with the owner's analysis of his needs, his desires and his budget. If the analysis is thorough, even a low budget can result in a good house.

There are, of course, innumerable ways of keeping the costs down once the requirements have been established. The three houses shown here — all owner-designed — suggest varying approaches to the problem:

- An Irregular Lot in a Good Neighborhood Is Inexpensive Zimmerman House, Ohio
- 2 A Rectangular Plan is the Most Economical Bissner House, California
- For Maximum Space at Low Cost Choose an Open Plan Small House, North Carolina





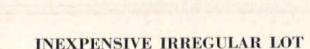


Space-saving built-ins throughout Zimmerman house kept decorating bill (including fee, all other furniture, fabrics, china, crystal, tableware, etc.) to a total of \$1416.93. Dust allergy of one son prompted cork floors, no carpets and no curtains; this helped budget, increased ease of maintenance. Sculpture on living room wall is family group by Bernard Rosenthal



Despite odd shape of lot, architect-owner achieved full privacy for terrace and children's play area. A studiodrafting room is planned for addition at north of lot

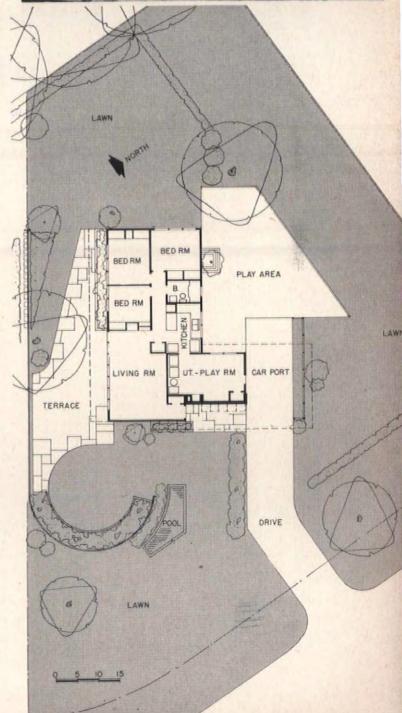


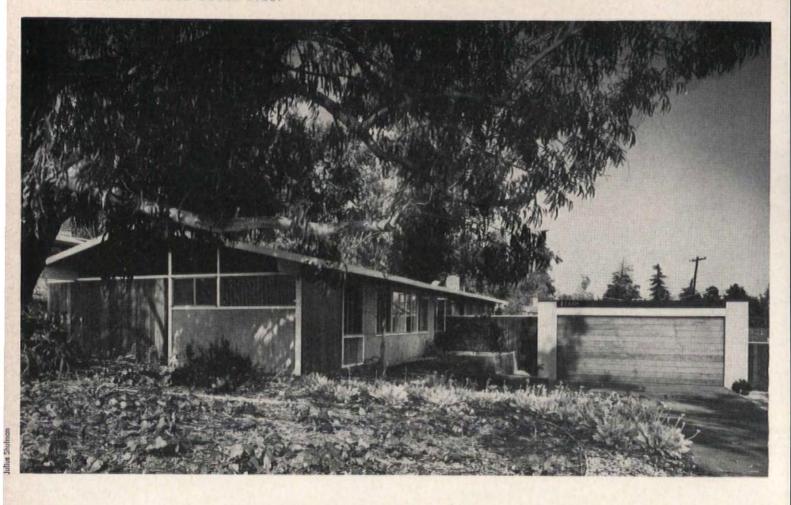


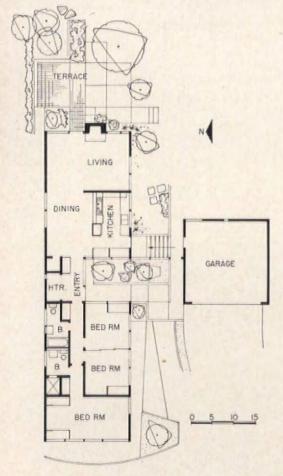
Ralph W. Zimmerman, Architect and Owner A. G. Britsch, Landscape Architect

In a good neighborhood in Toledo, Ohio, a 90- by 131-ft lot, shaped roughly like a wedge of pie, remained vacant because the developer wished to avoid the design problem it presented. Architect Zimmerman bought it for \$1250, \$2550 under the selling price of the adjoining property. He was immediately on his way toward meeting the \$20,000 budget which he had established for the house he and his family desired — a budget which included not only lot and construction, but land-scaping and complete furnishing. Since the Zimmermans' requirements were far from modest (they wanted, for example, a living room with maximum cubic volume and acoustic treatment to allow operation of the record player at concert hall level), the final per-sq-ft cost of \$14.95 was remarkably low.

How did the architect achieve that figure? He reworked his original plans until the area was cut down from 1840 to 1100 sq ft; the children's bedrooms were provided with all built-in furniture, to permit absolute minimum size; the play room and utility room were combined; a shed roof added the necessary cubic volume to the living room. Says Mr. Zimmerman: "Some of this . . . was a sacrifice, but . . . [it] has proved that with study a good house can be designed on a strict budget."





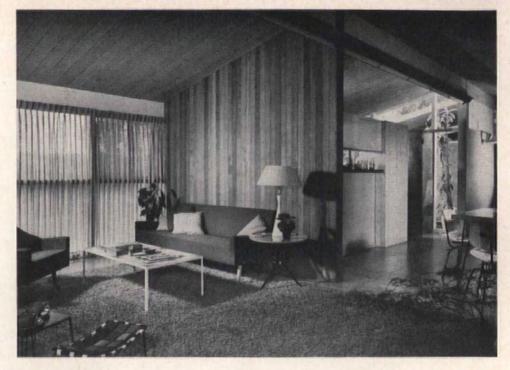


2 ECONOMICAL RECTANGULAR PLAN

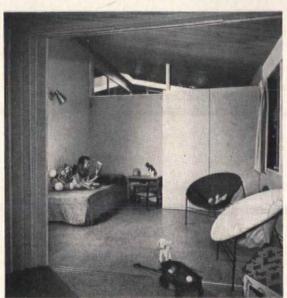
Harold J. Bissner, Jr., Owner and Designer

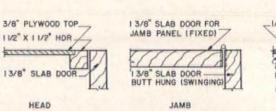
This straightforward small house in Altadena, Calif., its designer-owner reports, "was conceived on the spur of the moment and built in less than three months." The major problem was a limited budget which was met by a combination of economical plan and the owner's ability to serve as contractor and do much of the interior finishing. Result: a per-sq-ft cost of \$8.50 for a total area of 1200 sq ft.

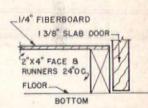
The house is basically a long narrow concrete floor slab with the bedrooms at one end, the living area at the other, and the entrance in the center. All rooms are directly accessible from the entry and all except dining room and baths have southern exposure. The "railroad flat" character which could so easily result from such a plan was eliminated by the central entrance and the liberal use of glass in the living areas. Construction materials throughout are low cost, and the color scheme is simple.



Access to living room from entry is through dining area — not an ideal arrangement, but a small price to pay for advantages of a central entrance and a living room opening to a secluded terrace at rear of lot







House looks and feels spacious despite relatively small size of rooms: living room has large areas of glass; entrance hall is glass-enclosed; children's rooms can be combined into large play area. Cost-saving features include wardrobes built of hinged slab doors (detail above right)







The Smalls "like to have all the protected view possible and prefer to live where it 'feels' high." So, with budget in mind, they chose a medium-sized lot sloping downward toward the east and the view, placed their house at the highest point, and added an enormous screened porch facing the view. Contractor was Frank Walser

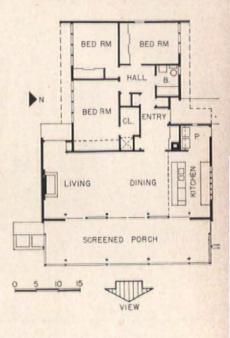


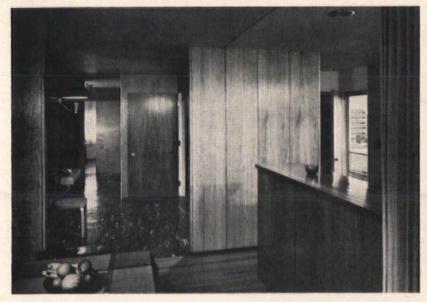
Joseph W. Molitor

3 SPACIOUS OPEN PLAN

G. Milton Small, Architect and Owner

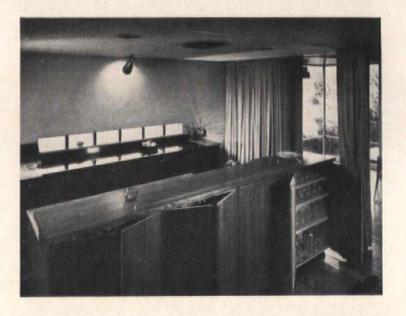
SAYS THE ARCHITECT-OWNER of this house in Raleigh, N. C., "Since cost was a very limiting factor we decided to have space if nothing else and this is the entire key to the low [\$3.00] per sq ft cost." The emphasis on space came from a family liking for informal entertaining and resulted in a completely open living-dining-kitchen area which, of course, cut down the cost of partitioning, wiring, etc. It was the screened porch, however — which the family considers the chief characteristic of Raleigh house architecture — that really gave the house the required spaciousness; for seven months of the year it adds 400 sq ft to the living area, and even when it can't be used it adds space visually.







Mrs. Small does all the cooking for the family. She likes to take part in family activities, and does not want to be relegated to the kitchen. Open plan of living area allows her to participate in family doings even while getting dinner, Built-in cabinets for china and glass separate kitchen and dining areas



MULTI-FAMILY HOUSING

BUILDING TYPES
STUDY NUMBER 211

HUNDREDS OF THOUSANDS, perhaps millions, of American families can afford better housing facilities than those they now occupy, if they choose to spend their money that way." That quotation introduced an article four years ago by Thomas S. Holden, vice-chairman, F. W. Dodge Corp. (Architectural Record, Sept., 1950). He went on to demonstrate with detailed statistics that this idea was not dreamy-eyed, that in fact the average family spent a much smaller proportion of its income on housing than, say, forty years ago. That indeed the average family spent more on "liquor, tobacco and amusements" than on housing. If we want better housing, we can pay for it.

It's as simple as that. Or is it?

Certainly the ability to pay for better housing is Fact One. But it is also true that any individual architect trying to improve multi-family dwellings finds difficulties. No need here to recite the list of those difficulties; suffice it to say that "standards," regulations, codes, street patterns, and habits of thinking are restrictive. The individual family is similarly beset. True, the family may move to the country, buy a half acre, build the house it wants. But if they must live in an apartment, it is pretty

A PLEA FOR PERSPECTIVE

By Charles K. Agle *

We are blessed with an incredible wealth of natural resources and ingenuity to get them out of the ground and put them to use. While much of this has had to be devoted to international conflict, there has been enough surplus to provide us with an abundance of material things, and our greatest domestic prosperity.

However, our living environment has not kept pace. Relative to the progress of other measurable wealth, it has actually receded. Our progress may have been so large and rapid that it has engulfed us, and we have not yet read its full significance or implications. We may be provided with opportunities that we have not yet appreciated and with tools that we have not yet learned how to use. In all humility, it may be wise for all of us soberly to re-examine our opportunities, the shortcomings of our immediate past, the forces at work, and see what to do with them.

THE FORCES AT WORK

An appreciation of the major factors influencing our physical environment includes at least these items: (1) continuing increase in population, and widespread need for small dwelling units; (2) the automobile as the major factor in circulation and land use design; (3) a powerful and prosperous economy, in which it is tragic to accept less than a decent standard of space and living quality; (4) four stages of family life, engendered by our mobility and economic freedom, which require separate types of housing.

1. Population change, both in numbers and composition, requires corresponding change in shelter and circulation.

Our population has doubled in 50 years, and is still going strong (75,000,000 in 1900; 150,000,000 plus in 1950). Medical progress in conquering infectious diseases has lengthened life expectancy from 42 to 68 years — more than one-third — which means that more middle-aged and older couples survive beyond the marriage of their children, and return to a "two person family" status, with special housing needs.

The automobile is here to stay.

The number of automobiles has almost doubled in ten years (30,000,000 in 1943; 53,000,000 in 1953; and possibly 80,000,000 by 1975). It is no longer a vehicle of pleasure and luxury; it is a beast of burden for daily necessities of survival, and the sole significant means of transportation outside the centers of our largest cities. The environment for the automobile is now a large component part of the environment for the whole family. We must design for the automobile's smooth and efficient flow; for its storage; but even more importantly, against its hazard.

3. Our building is permanent. Our physical standard should be based on needs, not merely immediate cost.

The out-of-pocket cost of World War II, which did not hurt us economically, in spite of the fact that it produced no tangible asset, was about \$300 billion. Its total cost, by the time we finish financing it and taking care of the veterans, has been estimated at over \$1 trillion. There are about 50 million dwellings in this

^{*} Chairman, Development Committee, National Association of Housing and Redevelopment Officials; Member, A.I.A. Urban Design Committee

difficult to find such human necessities as adequate space, privacy, contact with the outdoors, healthful environment.

Of course, "healthful environment" is an order of staggering proportions, involving most aspects of urban life. The President's new housing program, now before Congress, contains a proposal for an "Urban Renewal Administration," as part of HHFA, which presumably would address itself to improving our urban environment.

A big assignment, yes, but who if not architects is going to do something about it? Who else, but architects, deals so continuously or so consciously in matters environmental? Who, in his own workaday activities, can do so many things, however small?

And architects have been pretty persistent in their efforts, in spite of FHA regulations, financial strings, scandals, even fee chiseling. Architects are forever trying to sharpen their own thinking, as witness the article, below, by Charles K. Agle. They keep pecking away also in individual buildings, as illustrated by projects in this Building Types Study. Whether dealing with "urban renewal" or single building designs, they will keep their sights high. Always remembering Fact One — we can afford better housing if we decide to spend our money in that way.

Cartoons by Michael Ramus

country. In terms of real property, this means that, had we devoted an effort to housing equivalent to the effort we expended on the war, which we tossed off so briefly and ably, every family could have had a new \$20,000 house, including a one-third down payment.

It seems to me that we have indeed lost our perspective when we absorb astronomical figures for armament without question, and at the same time reduce the space of our shelter, which is a trivial cost consideration by comparison.

It does appear that there is no compelling economic reason for not getting what we want. If we can make up our minds what we want.

4. There is no average family. There are four major groups with different needs.

It has already been noted that the group of people in search of a place to live is not necessarily the average natural family of five and a half people (two parents and three and a half children), but rather a median group of 3.1 persons. But beware of averages and medians.

The economic and geographic freedom noted above has given more practical significance to the fact that the "family" is not at all a constant, but a group of people whose composition and architectural needs change drastically at different stages. A study of census and other data indicates that there are at least four stages:

(a) the formative period beginning with marriage plus about six years, when the couple are deciding where to live, how many children to have, and what they hope their income will be; (b) the production period of perhaps twenty years, when the children are all home and growing up; (c) a dissolving period when the children



marry and leave home; and (d) a static period of around fifteen years when the couple has the means to live well, but lacks the energy and the need for the old mansion. This last stage, of trivial importance only a few decades ago, now constitutes the largest area of need for which no specific solution has yet emerged.

THE SHORTCOMINGS OF OUR PAST

Much of our pre-war heritage no longer fits our changed circumstances. Even much of what we have done in the past ten years, while excusable because of the pressure of post-war population and need for shelter—any shelter, may return to plague us. It is also true that we probably have provided somewhat better shelter for *more* people than was done between 1900 and 1930, but the question still remains, is it as good as we can and should do?

What have been our shortcomings and difficulties?

Room sizes and unit planning

Our room size standards, as promulgated by both the FHA and the PHA in both houses and apartments, are such that it is impossible to walk on both sides of the



"The family is not a constant
. . . but a group . . . whose
. . . needs change drastically
at different stages"

bed to make it. There is rarely any interior space left over for members of the family to get away from each other: in our middle and less expensive contemporary products, the house has virtually been fitted around the family like a corset — here is a tiny room (70 sq ft) you must sleep in, a nook to eat in (maybe) and a 150 sq ft living room where everyone must get together. Rooms are almost the same size throughout the unit and ceiling heights are uniform. In the mass of units, there is little attempt or success in really relating outside space to inside space through fenestration, grade levels, or design and landscaping of a private yard. The end product is a tight and monotonous series of little artificial cells in which there is no escape from social congestion and boredom, short of television or the corner beer parlor with juke box.

Site planning and common space

Most site plans, room placements, and side yards are such that we all live practically in our neighbor's laps. Cities have not kept up in providing parks and playgrounds and other open spaces to compensate for the absence of usable open space for the children on small lots. Any charm that streets once had is blotted out by double lines of parked cars without so much as a bush to hide their collective naked ugliness.

Failure to design a distinction between minor and arterial streets makes survival a sporting proposition with low odds.

Because of the black magic of finance and questions of title, it is ironic that the private housing program seems less conscious of the need for social space than the public housing program. In reducing room sizes and number down to the barest animal essentials, both programs have long since wrung out of the "unit" every inch of usable social space. In the public programs, at least an attempt has been made to provide some space in community halls, day nurseries, and kindergartens, and something in the way of playgrounds. In private developments, whether of single, or row houses, or apartments, this is seldom the case, because of the difficulty of communal ownership.

Misuse of building types

We have a tendency to miss the point of relating

building types to the various family programs. In the center of our cities, we force all families into high rise buildings because of land cost, but in the suburbs or in small towns we are usually forced by archaic zoning to scatter them all in cracker boxes. A clearer appreciation of family programs, and an understanding of the merits and demerits of various building types might help us steer around fallacies and confusion.

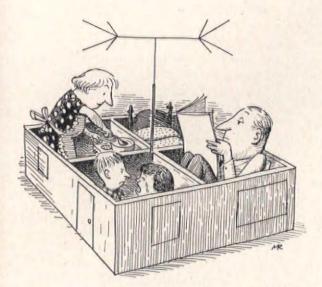
- 1. The High Rise: Both the children and their parents are underprivileged when the children do not have direct and immediate access to the ground, and playgrounds of adequate size and basic equipment and some sheltered play space within attractive range not on the other side of town or down the elevator shaft. Without these facilities, the pressure and tension inside the dwelling is apt to run high if the children are healthy. The provision of these facilities in a high rise structure is just plain impossible. Density and land cost be damned: a child in an apartment is underprivileged, whether on Park Avenue, Lake Shore Drive, or the lower east side. The high rise building does have its merits, but not for active children.
- 2. Row Houses, Garden Apartments, and Walk-ups: We should first define our terms, A row house is an individually owned unit between plane party walls on a separate lot; a garden apartment is a collection of units in common ownership, in which each unit has a private outside door; a walk-up apartment is a group in which two or more units are entered from a common hall and outside door.

Most row-house developments, of which Philadelphia and Baltimore contain perhaps the dreariest examples, are characterized by rigid street patterns, complete waste of front yard space, which is too small for insulation from traffic noise or any private or individual use or landscape treatment, but which, nevertheless, consume enough of the lot area to rob the rear yard of any potential value. Rear yards either serve as junk heaps or are paved for parking off an alley. We thus have traffic and noise, fore and aft, no usable open space, no privacy, no view, and only the joy of ownership; but of what? While it may be acceptable for a sound-sleeping couple, what about children? Where do they play? Where can they even walk in safety?

The garden apartment has some better features than the row house, but generally fails to provide private open space related to each unit. Common ownership does make it possible for parking and garages to be grouped, and achieve some quiet near the living unit. Children at least can walk in the common open space, and some left over space may be available for playgrounds. However, the cost of retiring the owner's mortgage is a heavy price for the tenant to pay for the privilege of parking his car away from his unit and looking at a bit of landscape he can neither dig in nor sit on.

3. Single-Family House: Most fringe or suburban communities still hang on to the romantic fallacy that only a single-family house is good, and force all families into it, regardless of basic need. Proceeding from this vicious premise, it then becomes necessary to prostitute

lot and structure sizes in an attempt to serve families which, because of small size or economy, could be better served by other means.



"The end product is . . . a series of little artificial cells in which there is no escape . . ."

There is not much that can be said in praise of such developments of the minimum two-bedroom single house on a narrow lot, other than that it is a cheap and temporary expedient. Temporary, for two reasons: first, when hemmed in by narrow side yards and standard front and rear yard set-backs occasioned by obsolete zoning practice or lack of imagination on the part of the developer, its appearance can be as deadly as the usual PHA or 608 "Project," and it enjoys the privacy of a goldfish bowl. In standard examples there is little more private use of the open land than in row houses, and it fails to exploit its inherent advantages. Secondly, if we do not give the owner enough land to put up a carport and add a couple more rooms when children start arriving, he will soon have to abandon it. Although he may have had no choice, and was forced to buy in a seller's market, he isn't dumb, and won't spend a nickel on upkeep while he is waiting for something better.

It is therefore my fear that the too-small house on the too-small lot creates an inherently unstable neighborhood from the point of view of cold cash, disregarding quality, and that much of what has been built in the hysterical boom of the past 10 years is potential slum.

City Planning

There have been still other difficulties: the city plan (or lack of one) and the fast-buck subdivision. The first has inherited largely obsolete codes, ordinances, regulations, and concepts. When compounded with the best old-fashioned engineering and real estate thinking, this concoction has nicely supplemented the past neglect and indifference, or helplessness, of the architect, to give us our urban heritage: gridiron streets of uniform dimensions for all purposes in all directions and conceived

only for horses; sugar-lump houses of uniform size, height, set-back, and side yards so narrow that even a cat has trouble negotiating them, all nicely strung together in a tight row, with no outlook — past, present, or future; central business areas that are strangling because the automobile can neither get to them, or park once it gets there, all overlaid with flashing neon signs that give it the calm dignity and charm of a juke box.

Economic fears

Restlessness and insecurity may be aggravated by the mediocre quality of our three-dimensional life. This means more than the design of the house or apartment: we find that the city is no place to raise children because of the lack of play space, the over-burdened schools, congestion, traffic hazards; so we pull up shallow roots and fly to "the country." Then we find that commuting takes so much time and personal wear and tear that one parent is of dubious value to the family. Maybe it works, or maybe we can't find a suitable house in a good neighborhood within our means, and we move on to the southwest, or west coast, and try again. This rolling around may be aggravated because we can't find anything (collectively, house, neighborhood, schools, shopping, transportation to work, "atmosphere") that is good enough for us to want to hang onto.

WHAT TO DO?

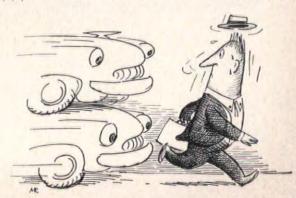
What is quality in living? If occasionally we have stumbled in our quest, what improvement can we make? What opportunities have we missed?

The designers of living environment cannot stop with four walls. A few hundred years ago, when the major and compelling reason was shelter, the igloo plan of the Cape Cod cottage was an excellent solution to the immediate problem, and even the urban huddle was understandable. Today, however, we have the tools to do better.

What do we need? Response to family personal and social programs. This involves more than a listing of spaces of various minimal sizes: a psychiatrist's insight, an understanding of social habits, sleeping space for children, and space for them to lead their private lives.

It boils down to the major consideration of space. When there are a lot of human beings cooped up in one place, they get to be like the molecules of oil in the head

"Failure to design a distinction between minor and arterial streets makes survival a sporting proposition . . ."



of a high compression diesel. The internal pressure is in indirect ratio to the space, and when the space gets too tight the heat and pressure make them explode. If the piston is stuck and the exhaust valves don't open, the head blows off. This is my basic sociologic case for the one-story house on a quarter acre of ground for a full family, with at least one spare room to absorb the pressure on rainy days or winter nights, whether you call it a study, library, hobby shop, or just sparking space, to double for the youngster's jalopy when the roads are icy — and for the small family, at least a pleasant outlook to mitigate the tightness of a still smaller enclosure.

It is also highly desirable, in composing a neighborhood, to provide a balance of facilities for various family sizes. Only in this way can continued residence and the preservation of social ties be preserved as a family progresses from one stage to another. It also provides the best opportunity for architectural variety and interest through the use of proper building types for each family group.

Use of proper building types

The high rise, of course, has certain advantages which the low structure never can get - whether in a row or on an acre lot: fine light, magnificent views, and a feeling of great space. This suggests that it is really a superior building type for small families, whether it is located in the middle of a large city or on the outskirts of a village. Generally speaking, young married couples, either with no children, or children under, say, two, do not need the same access to the outdoors as larger families, and can do well without the worry of individual heat and utilities and the burden of landscape and structure maintenance. Except for differences in economic level and the ability to afford luxurious equipment, the needs of older couples line up quite well with the very young, and there is a legitimate use for high rise for these two groups. I only want to beg a balcony for everyone so that there can be some direct escape from the constant pressure of completely enclosed space.

Where land is not at a premium, a good case can be made for the garden apartment for these same two groups, the young and the old. For both groups, rental tenure has certain advantages over ownership, because no long financial commitment is involved, there is no responsibility or burden in upkeep, and its flexibility offers a good springboard into more permanent quarters for the young, and freedom for travel for the old. When nicely landscaped and built at low density, that type of short, but good, view is a worthy substitute for the distant view of the high rise.

Where the feeling of personal security is enhanced by ownership, or where private landscaping and sitting out terraces are wanted, a legitimate case can also be made for the often deplored row house — properly designed.

This "row house" needs brief explanation. Let us start backwards from the free-standing house and lot. I feel that walls with facing windows should be at least 20 ft apart, or the windows are worse than nothing

and should be somewhere else. This means minimum 10 ft side yards. The average small house that is habitable now has a breadth of about 35 ft, and we have to do something about attaching a car, for another 10 ft. Ergo, any lot narrower than 65 ft is small for a freestanding house, and it appears that about six dwellings to the net acre is tops for the houses that people want to build now. The hiatus between this six and the 15 where we can build an acceptable garden apartment is untenable. The first step in increasing density without losing any of the quality of the free-standing plan is to twin the garages with a party wall and save 10 ft. The next is to put a party wall on the other side and have all the windows front and back, still with the same onestory plan, for a width of 45 ft, but with still no serious loss in quality. With the sacrifice of one-story quality, and going to two, we still can have our car in the structure and have private and usable open space in the rear on a width of 25 ft, or a top net density of about 16. Beyond that the loss in quality is so abrupt that other building types - the garden or multi-story apartment should be used. Thus, with access, parking, and service on one side only, private usable open space related to interior planning on the other, and the superior privacy of a party wall over a narrow side yard, I feel that the row house can be quite acceptable on lots up to 50 or 60 ft wide, but that on lots narrower than 25 ft we ought to forget about it.

In my Utopia, this leaves the field of the three or more bedroom dwelling exclusively to the *free-standing house*, whether the floors are of teak or bare concrete. Quantitatively, this would be appropriate for half of the term of the average family cycle, and should be about half the total supply.

Site selection and full use of site planning opportunities

The architect, regardless of building type chosen, is constrained to design the immediate open space surrounding the shelter as part of it, and to relate his room sizes, shapes, fenestration, and circulation to the larger environment. It is not enough to provide the minimum of light and air essential to physical survival, as apologetically specified in building codes and zoning ordinances. We must have, as well, the variety and interest of something natural to look at, space we can see and sense outside our caves, and room to move about in a

"Both the children and their parents are underprivileged when the children do not have direct and immediate access to the ground . . ."



natural environment. As mentioned before, this presents a case for the honest "picture" windows, as distinguished from the current showcase; freedom of access to the ground; and a balcony for at least one room in every high rise unit.

Even all this is futile if a poor site is chosen, or one in which that ogre, land value, is such that there is pressure to overcrowd people.

With decent transit planning and installation, I see no theoretic, practical or economic reason for using a bad site.

The best site for housing is not flat, even though it may be cheapest to develop. Our thinking is handicapped by our heritage of easy walking on the valley floor. The flat valley floor is for farming, industry and commerce. The opportunity for light, air and outlook lies in the hills or along the water courses. Where neither hills nor water is available, the use of different building types in the same development becomes even more important.

Once we have a good site we must settle for no less than the satisfaction of four objectives: 1. The interrelation of structures so that they do not cut off each other's light, view, and privacy. The close juxtaposition of high rise buildings of equal heights in cities ranks with four foot side yards in the suburbs as being twin inexcusable stupidities; 2. Proper control of scale: specifically, the avoidance of long sight lines along streets where too much can be seen at one time and the visible repetition of many similar structures produces monotony. It is important that we have curved streets to control sight lines and a progression of scales on the way home, and that the last should be a quiet loop or cul-de-sac; 3. A modern articulated street pattern, in which arteries have no parking, limited intersections, and give no access to abutting property; in which collectors have no parking, give no access to abutting property, and serve only to distribute traffic to the minors; and in which minors are short and give the sole access abutting property, and serve only for designation traffic; 4. One or more focal points giving identity to the neighborhood as well as functional convenience: the elementary school, shopping center, the church and social facilities.

The atmosphere of the city

It should not be necessary to labor the point of esthetics with the architects and planners who design our environment. Suffice it to say that composition, variety, interest, and even beauty, are possible in our cities, and the need for these is more practical and compelling than is evident from our neglect. In other commercial fields, it is the practical support for success: the buyer of a car is much more concerned with its appearance than he is with the ratio of the differential. From that hard-headed point of view, again, a "good address" is synonymous with stable property values and atmosphere.

Some useful tools are already at hand, and others can be found, only for the price of looking. Starting at the center, we can have a village green, nicely planted,



"The igloo plan of the Cape Cod cottage was an excellent solution to the immediate problem . . ."

maybe with a fountain and flowers instead of a surplus World War I howitzer; shops with sheltered arcades such as have been standard in Europe for centuries; a pleasant outlook and surroundings for our office or factory; a conveniently located parking lot with screen planting; an arterial parkway without billboards and neon lights.

Thus we can have a variety of changing and pleasant experiences: the view from our office, the shaded arcade (maybe even a cup of coffee at a sidewalk cafe); the green with its flowers; the parkway along the brook; the easy collector where houses begin to appear between the trees, and the small scale peace of our own secluded street. Add to that a private living space where the sheltered and open spaces are both part of a single composition, there is some variety in the scale of rooms, there is a playground nearby, and we have space to live, indoors and out.

While this concept obviously should be accompanied by soft music, it is also possible that is the best approach to a sound long-term investment — regardless of whose money we use, or on what terms.

In all of the foregoing I have tried to outline some of the specific aspects of the quality of total environment, as distinguished from the usual fractional preoccupation with a building. I have also tried to point out some of our past inadequacies as a means of searching for improvement, and have tried to simplify a statement of our problems and opportunities. I have no illusions about the existence of practical obstacles, the cold clammy hand of stratified government and financial interest rates, or the confusion and inertia inherent in specialized interests, professional, as well as business and social.

However, this is America, and we are strong enough to shape our own destinies if we can achieve a common understanding and desire. Our living environment has not kept up with our material wealth. Architects and planners can explain what we can have. We can get what we want. The next 10 years will determine the physical future of the country for a century. With a change of administration, we have a golden opportunity for fresh determination. The time for decision is now, and indifference and inertia are negative votes.

What do we want?



CHICAGO: WIDE VARIETY OF APARTMENT SIZES

The Pioneer Cooperative, Inc.

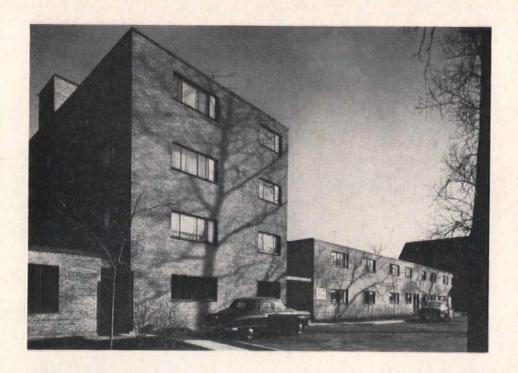
Conceived in an effort to provide better housing at reasonable cost in Chicago's Hyde Park area, near the University of Chicago, this project has proved successful in reaching that goal and in two other respects as well: first, as an example of good apartment house design; and second, in acting as a key factor for the coming redevelopment of an old neighborhood sliding downhill.

With the help of architect and builder, the venture was started by a like-minded group, each owner holding shares in proportion to the size of his apartment. Costs were held to a minimum; there were no promotion fees in the early budget. Although a wide variety of apartment sizes was required, no particular number was specified, the idea being to keep land cost per unit in line with reasonable rentals in a non-profit setup. Study of all factors resulted in a scheme housing 23 families in units ranging from one bedroom suites to 6-room row houses. A typical tenant-owner in a 4-room apartment, for example, made a down payment of \$5470 and pays a \$95 fixed monthly charge, which entitles him to a tax deduction of roughly \$380. The fixed charge covers amortization, taxes, insurance, maintenance and required reserve. Individuals pay for electricity; do their own decorating. As rents rise, the owner-occupants' relative advantage becomes more apparent daily.

The neighborhood is an old one containing pockets of blight and is practically 100 per cent built-up. However, this particular plot was vacant, tax delinquent, easy to acquire and is convenient to public transport, the University of Chicago, an elementary school and a shopping center. In spite of these favorable factors, private financing sources shied away from the generally deteriorating character of the area so that financing had to be arranged through FHA. This caused changes, which, according to the architects' estimates, probably increased cost as much as 10 per cent. However, the project was completed for \$268,000 or \$1.15 per cu ft exclusive of land cost and the architects' fee.

The architects' hope that rebuilding would help reverse the downward trend of the neighborhood has been reinforced by the recent start of a master plan for the area's redevelopment by the University of Chicago together with two neighborhood groups under a Field Foundation grant. The Pioneer project will form an important key in such a scheme.

The two-building, L-shaped arrangement (see plans) covers 32 per cent of the land, provides paved off-street parking for 60 per cent of the tenants, orients to a garden area, and provides both indoor and outdoor play space for the children. The fireproof structures are supported on a combination concrete frame and brick bearing wall system; the floor slabs contain hot water heating coils; sub-partitions are 2-in. solid plaster; finish floors are asphalt tile; ceilings are painted exposed concrete.



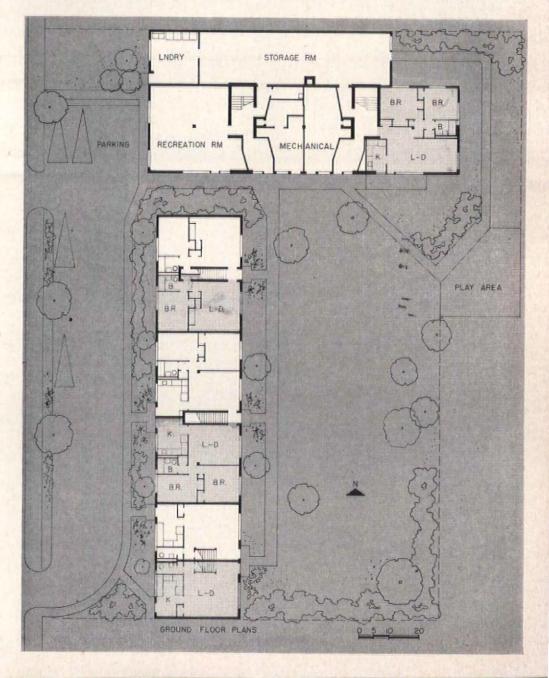
George Fred Keck — William Keck, Architects

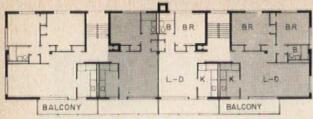
Robert Bruce Tague, Associate Architect

Frank Kornacker & Associates, Structural Engineers

William Goodman, Heating Engineer

Perry Construction Company, Builders

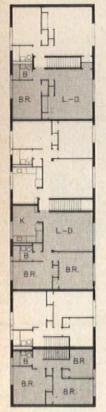




TYPICAL UPPER FLOOR

PIONEER COOPERATIVE, CHICAGO

George Fred Keck - William Keck, Architects



SECOND FLOOR

The upper photo shows the projecting balconies on the north building, which shade the large glass areas in summer but permit the sun to penetrate inside in winter, and provide private outdoor space for each apartment. The railings are of typical chain link fencing, supported on galvanized standard structural sections. The lower photo looks out over a typical apartment balcony





LONG ISLAND: STATE-AIDED SUBURBAN HOUSING

Harbor Homes, Port Washington, L. I. and Spinney Hill Homes, Manhasset, L. I.

William Lescaze, Architect

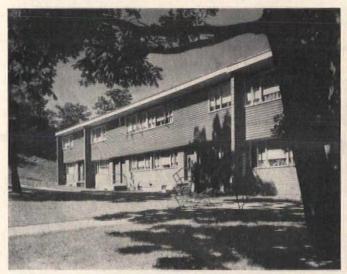
Leo A. Novick, Landscape Architect

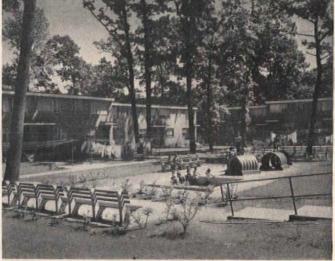
Claude R. Engle, Electrical Engineer
Morris Shapiro, Mechanical Engineer

In these projects, plot coverage is low (13 and 16 per cent), the buildings are judiciously placed among trees and planting, residential scale is emphasized both by the 2-story height and the fire-wall projections at 65-ft intervals. A restful horizontal line is created and carried through all the houses by the device of covering the second floor exterior with redwood siding in contrast to the brick below. The foregoing are some of the factors that lend these 2-story row houses their pleasingly residential character. The projects are designed for low-

income families and are located on Long Island's north shore; were made possible by a combination of local and state funds.

In executing such a project, the first action comes from the local group (in this case the North Hempstead Housing Authority), which is, of course, acutely aware of the need and makes application to the New York State Division of Housing for assistance. The State agency then surveys the situation, verifies the need, and sets up a tentative proposal according to their standards





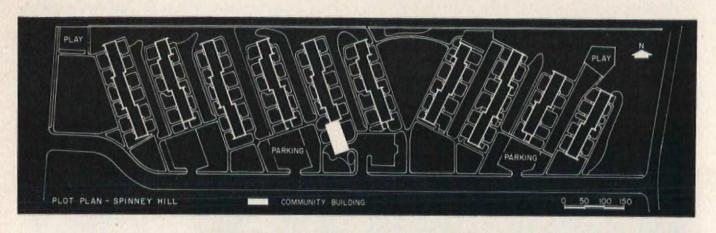


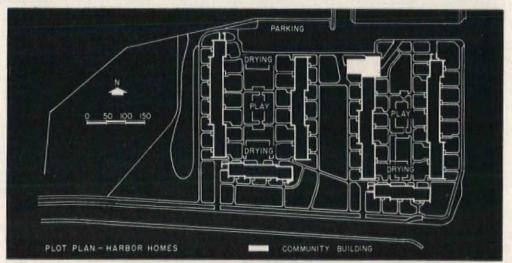
senh W. Molitor

and procedures. Should the two concepts be at variance, the differences are mutually adjusted, agreement reached, and the State is then prepared to lend assistance. There must be a local contribution (usually restricted by the legal limits on borrowing) to which is added the State aid, which assumes the form of part loan, part subsidy. The project then moves ahead, mostly under local supervision, with consultation and advice from the State agency, and with certain approvals required.

Two to three years ago, when these projects were built, the policy was to keep rentals below \$9 per room per month, based upon units averaging 4.2 rooms or less which cost approximately \$10,000, excluding landscaping but including a proportionate share of the community building. In general terms, these figures were substantially maintained in these particular setups.

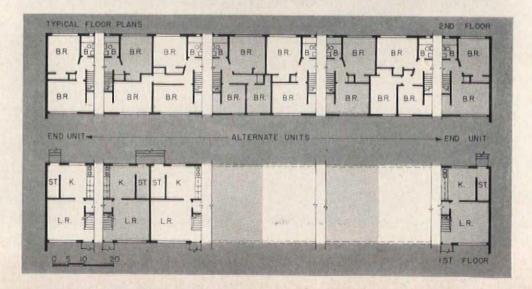
There are a total of 168 units in the two projects; 102 in Spinney Hill and 66 in Harbor Homes. The units range from $3\frac{1}{2}$ to $6\frac{1}{2}$ rooms, a large percentage being $4\frac{1}{2}$ rooms; the density per acre is 58 persons in 14 units at Spinney Hill and 49 persons in 11.8 units at Harbor Homes. The project is designed for families which range from middling to large in size.





The plot plans — Spinney Hill above, Harbor Homes at right — show the relationship of the houses to lawns, play spaces, drying yards, parking areas, and the community building

The alternate arrangements possible within the repeated module of the fire-wall divisions are shown in the unit plans, right. Note how, for economy, plumbing is back-to-back in plan; also "stacked" vertically











NEW ORLEANS: RENTAL FLEXIBILITY AND PATIOS

The Patios Apartment, New Orleans

Curtis and Davis, Architects

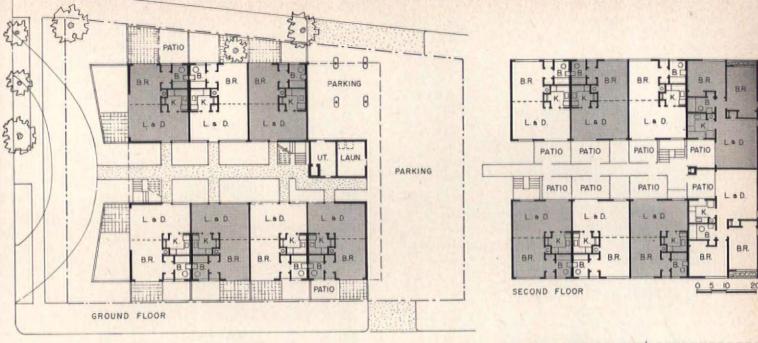
Two interesting features characterize this two-story, 15-unit apartment. There is an unusual three-dimensional concept providing a private patio for each apartment, the second floor opening in, the ground floor opening out. And, rental flexibility is provided by an alternate plan in which two small efficiency apartments — each consisting of living-dining space, kitchen, bath and subdivided sleeping space — can be combined into a suite comprising living-dining space, study or guest room, kitchen, storage, two bedrooms and two baths. As actually built, all the apartments are small units except two, but the provision for possible future change is built-in; planned.

Located on the edge of a high class residential neighborhood, the site is bounded on three sides by streets, on the fourth by houses, and was described by the architects as "very tight." Since few small apartments are available in the area and the demand for them is brisk, this project was aimed at the "luxury-efficiency" rental market, consisting of either young childless or older retired couples of middle income or above. Although not showily expensive, the use of such materials

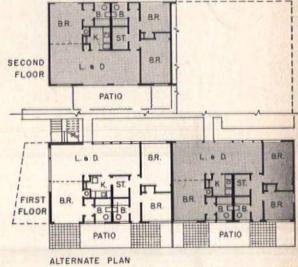
as cork floors, mahogany panelling and acoustic ceilings places the building in the medium or slightly above rental scale. It has been solidly leased at planned rates since completion, yielding the owner a good profit.

The structure was limited to two stories in order to utilize light construction and avoid the requirement of elevators. Economies were effected by duplication of framing, use of standard lumber lengths, and by repetition of standard details, e. g., similar window-wall units assembled in the mill and simply secured in place on the job. The second floor patios are enclosed by corrugated plastic panels which are pleasantly translucent, economical, and easily supported on the light steel frame. Air conditioning was justified only on the basis of individual units, operated or not at the tenant's discretion. In actuality, they are nearly all in use constantly.

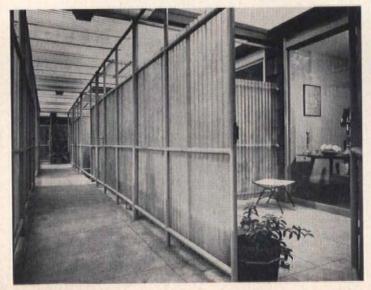
The building cost was slightly less than \$12 per sq ft late in 1952. Maintenance has been very inexpensive, probably due to the natural wood interiors and to an exterior of cedar shakes, brick, natural wood fencing and plastic panels.







The alternate plan, directly above, shows the manner in which two small apartments can readily be converted to a larger suite. At left, entrance from street; bottom left, view of the second floor corridor looking into a private patio; bottom right, typical apartment living area — note natural wood wall finishes







Mizuki

12 STORY BUILDINGS

7 STORY BUILDINGS

6 STORY BUILDINGS

0 50 100 150

ST. LOUIS: HIGH RISE BUILDINGS AND BALCONIES

John J. Cochran Garden Apartments for the St. Louis Housing Authority

Hellmuth, Yamasaki & Leinweber, Architects
John D. Falvey, Mechanical
& Electrical Engineer
Wm. C. E. Becker, Structural Engineer

Horner & Shifrin, Utility Engineers
Harland Batholomew & Associates,
Landscape Architects
Millstone Construction, Inc., Builders

THIS BUILDING GROUP, awarded both the Gold Medal of the St. Louis Chapter, AIA, 1953 and an Honorable Mention, Architectural League of New York, 1953 Exhibition, was designed with the primary idea of trying to achieve a residential quality combined with openness of site and to provide a maximum of social and communal facilities within the economic and planning requirements of the Public Housing Administration. The project was designed for low income families, eligibility being determined by income and number of children.

The architects say, "To achieve our goal we tried to eliminate the stigma often attached to such projects, and it was imperative to avoid a feeling of regimentation. To help accomplish this, the spaces between the buildings were as carefully studied as the units, building heights were varied, design details such as entrances were individually considered, and primary colors were used on balcony doors. This emphasis on residential quality seems to help eliminate some of the institutional aspects common to such projects and appears to justify

a design approach rather than a statistical approach as a basis for planning."

The site, in a blighted area only six blocks from the central business district, was restricted in area so that openness could be achieved only by high-rise units. The land coverage is 11.3 per cent and density is 44.3 families (149 persons) per acre. In addition to outdoor recreation areas, play spaces and drying yards, the plan provides laundries, tenant storage space and storage for wheel toys at either ground floor or basement level.

An opportunity to exhibit a full size mock-up of a typical dwelling unit at a civic exposition resulted in a chance to gather the comments and criticism of the thousands who attended, and consider these in the development of the final scheme. As built, the buildings provide a maximum of privacy by means of the typical in-line plan, and are carefully oriented to catch the summer breezes important in St. Louis. Each apartment above ground level has an individual balcony to serve as a private "front porch."



Samuel Charlen

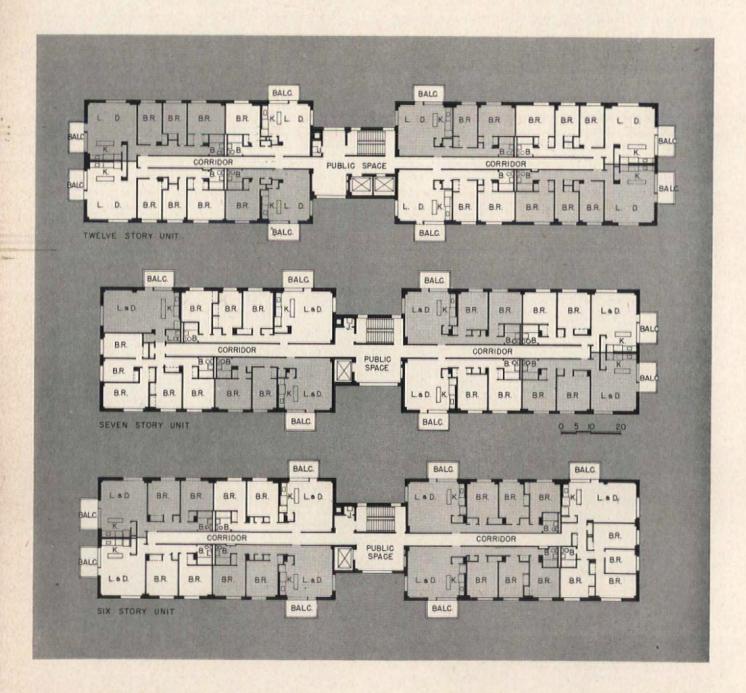
JOHN J. COCHRAN APARTMENTS

Hellmuth, Yamasaki & Leinweber, Architects

Three basic types of buildings 6, 7 and 12 stories high house 3,070 persons in 704 units apportioned thus:

96	1 BR	Unit	13.65%
	2 BR		
276	3 BR	Units	39.30%
36	4 BR	Units	5.13%
	5 BR		

The average dwelling unit contains 4.91 rooms, including 2.42 bedrooms. The project has fulfilled income expectation; has maintained a long waiting list since completion. Bids were received in the spring of 1950; the cost was about \$4.65 per sq ft. No unusual methods or materials were possible under the PHA regulations so economies were sought through planning rather than by other and less orthodox means.



Mac Mizuki





Plaget Studios



High Rise Apartments and Houses Integrated

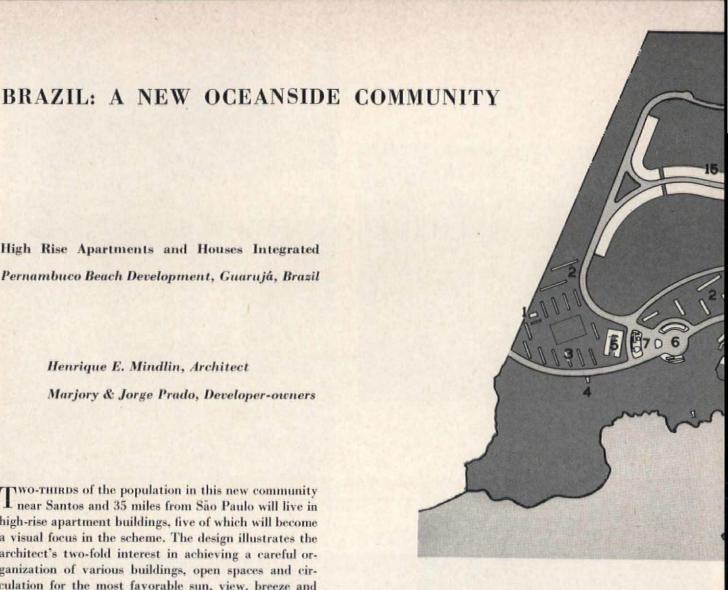
Pernambuco Beach Development, Guarujá, Brazil

Henrique E. Mindlin, Architect Marjory & Jorge Prado, Developer-owners

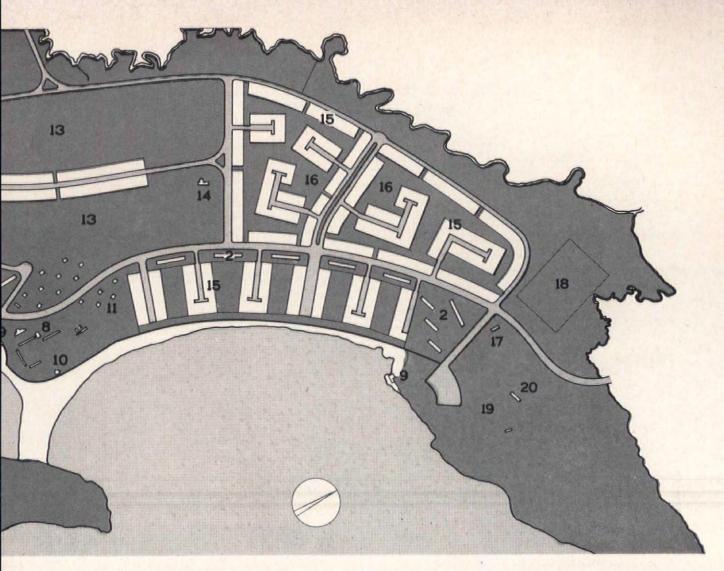
Two-THIRDS of the population in this new community near Santos and 35 miles from São Paulo will live in high-rise apartment buildings, five of which will become a visual focus in the scheme. The design illustrates the architect's two-fold interest in achieving a careful organization of various buildings, open spaces and circulation for the most favorable sun, view, breeze and intercommunication - and in creating a pleasant environment for living. There was in addition a strong concern for preserving the native character of the site - a magnificent one-and-one-quarter mile stretch of beach facing east to the Atlantic and bounded on the west by a river, rugged hills and a wild forest.

The community plan calls for one through highway, located nearly 1000 ft from and parallel to the beach, creating two main areas. The part nearest the ocean is restricted solely to pedestrian traffic and is given over to gardens, beach clubs, hotels, apartments and houses. Toward the hills, a secondary loop-road feeds a larger segment containing a golf course, shooting club, polo field, tennis club and house-building plots. Note that traffic in all residential areas has been channelled into dead-end streets, thereby both restricting and slowing it. The relatively small amount of commercial activity will center about the traffic circle (far left in plan). It is significant that the completed project will be 87 per cent green, 6 per cent buildings, 7 per cent roads.

Note particularly the plan for the development of the five large blocks fronting on the beach. Cul-de-sac roads feed the residential plots (shown white on the plan) which in turn open to a large common garden. The ten-story, 80 unit apartment buildings adjacent to the highway also face this garden and look over it to the sea. The land area between and about the pilotis for



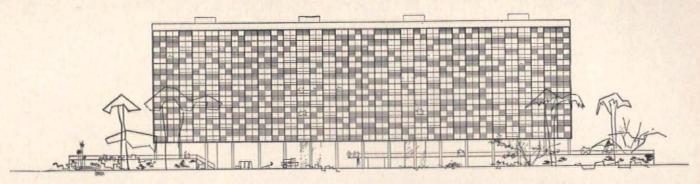






LEGEND

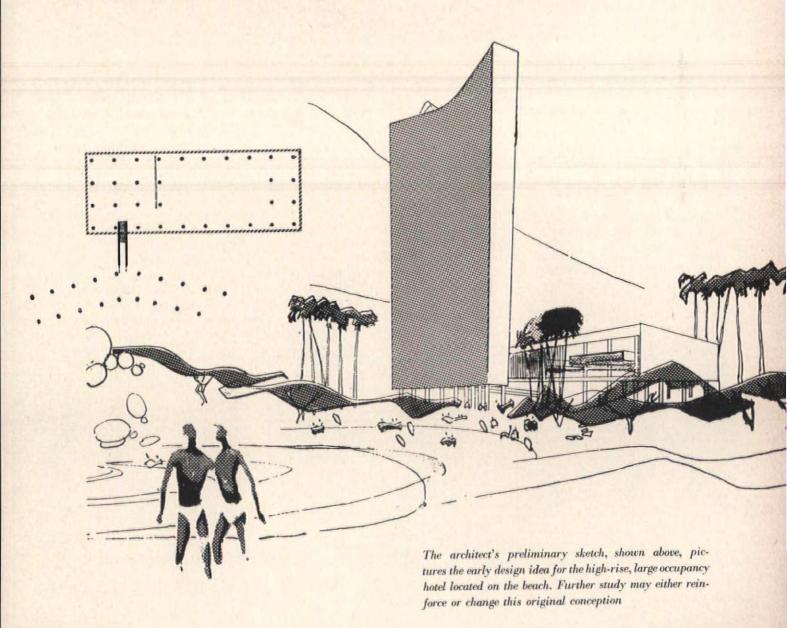
- 1. School
- 2. Apartment Building
- 3. Low Cost Rental Housing
- 4. Church
- 5. Commercial
- 6. Shopping Center
- 7. Community Center
- 8. Hotel
- 9. Beach Club
- 10. Pavilion
- 11. Cottages
- 12. Shooting Club
- 13. Golf Course
- 14. Golf Club House
- 15. Residential Lots
- 16. Tennis Courts
- 17. Tennis Club
- 18. Polo Grounds
- 19. Riding Course
- 20. Riding Club



Elevation from the sea

each of these tall apartments will be devoted to parking, gardens, and playgrounds; will comprise a total area of approximately 90,000 sq ft. The individual plots for houses are small for two principal reasons: first, because each opens to the large communal park — second, to make for easier landscape maintenance.

The restrictions necessary in order to carry out the concept have been readily accepted by the individual lot owners. Everyone concerned seems to understand why the architecture must be modern, that certain required alignments are necessary, and that free spaces next to individual lots must be preserved.





PLANNING FIRE SAFETY FOR HOSPITALS

By Julian Smariga, Structural Engineer and
Fire Safety Consultant, U. S. Public Health Service*

In few types of institutions are people so dependent upon someone else for their safety as in hospitals. Because the illness and treatment of patients may render them helpless, in varying degrees, greater emphasis is necessary to promote fire safety in hospitals than other building types. Therefore, the basic principles of fire safety should be clearly understood and appreciated by every architect, and incorporated in the design of every hospital.

The practice of fire safety begins in the designer's office. Unless adequate provisions for fire safety are considered in the original planning and design stages of a building, they may never be fully realized. The cost of installing safety features, although relatively minor at the time of construction of the building, may be so prohibitive at a later date as to permit only partial compliance with generally accepted standards.

1. PLANNING TO MINIMIZE THE CHANCE OF A FIRE STARTING

The causes of a great many fires undoubtedly lie outside the responsibility of the building designer. Accidental fires which may be abetted by poor housekeeping techniques and the improper maintenance of equipment are certainly

*Prepared under the direction of John W. Cronin, M.D., Chief, Division of Hospital Facilities, Public Health Service, Department of Health, Education and Welfare. factors over which the architect has no control. A sufficient number of fires, however, can be attributed to some feature of the basic construction where the architect does have influence.

Fire-resistive Construction. The greatest contribution which the building designer can make toward minimizing the chance of a fire starting is in the selection of the materials and equipment. All material used in the construction of the hospital building should be incombustible in nature. The necessary fabrics, wood trim and finishes should be properly treated to reduce their combustibility. All structural members should be constructed to maintain their required strength and stability for a specified time in the event of prolonged exposure to fire.

Where local codes may be antiquated or incomplete, the architect should refer to the recommended code of any of the established national organizations dealing with construction and safety.

Equipment. Proper selection and installation of equipment is very important in promoting high standards of maintenance and operation, thereby removing many chances of accidental fires. Sufficient space should be allotted around and above all mechanical equipment and electric services to permit safe operation and encourage good maintenance. It is good hospital design practice, therefore, to increase ceiling heights

in kitchens, laundries, boiler rooms, mechanical equipment rooms, and other areas which may contain such equipment.

Fuel-fired equipment should be properly designed, adequate in size, and correctly installed. Electrical devices, appliances and equipment should be of approved types, and installed and used in accordance with the manufacturers' recommendations.

2. PLANNING FOR DISCOVERY OF FIRE

Almost all large fires start from small ones, so it is important that fires be discovered and extinguished as soon as possible. In areas where someone from the hospital staff is on duty at all times, the fire is likely to be discovered early and prompt action in applying proper extinguishing techniques will put it out with minimum excitement and loss.

Certain hospital areas, however, are not under constant staff supervision. Other hospital areas may be fire hazards due to their content or use. In such cases, it is highly desirable to consider installing automatic fire detection and alarm systems.

Automatic Fire Detection and Alarm Systems. There are several types of automatic fire alarm systems which may be used in hospitals. These include:

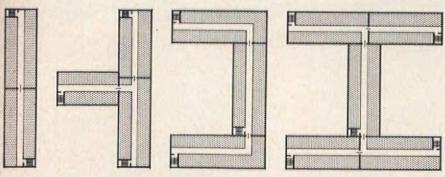


Fig 1: Each floor should be subdivided into two compartments or more by fire-resistive partitions, as in these plans, to prevent spread of fire

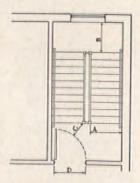


Fig 2: Minimum dimensions of an exit stair: A, B and D = 3 ft B in.; C = 1 ft D in.

- (a) Automatic sprinkler systems with waterflow alarm.
- (b) Automatic chemical extinguishing systems with alarm.
- (c) Heat actuated fire alarm systems.
- (d) Smoke detection systems.

Several factors enter into the selection of the proper type of automatic alarm system. For example, rooms containing intricate machinery or expensive supplies should be protected by a system which will not damage the contents of the room. For conditions which may lead to a rapid spread of fire, an automatic sprinkler or chemical extinguishing system would be very desirable, since it discovers the fire, applies an extinguishing medium and sounds an alarm as well. Table 1 indicates appropriate systems for various "critical" areas in hospitals.

Local Fire Alarm Systems. All hospital plants should be equipped with a local fire alarm system, which is an internal signaling system arranged to sound an audible alarm in one or more places in a building, primarily for the notification of occupants. The minimum fire alarm should be a manually operated, non-coded, internal alarm. For a building consisting of several wings or several stories, however, a coded system is preferred. If possible, the alarm system should be interconnected to transmit an alarm to the municipal fire department in order to eliminate any possible delay in notifying them. In addition, a municipal fire alarm street box should be located adjacent to the main entrance of every hospital building for emergency

Alarm Sending Station. As a general rule, manually operated fire alarm sending stations (fire alarm boxes) should be located so that no point on any floor is more than 100 ft from a station. These stations should be placed in conspicuous positions near main exits in a natural path of escape.

Alarm Sounding Devices. The audible alarm signals should be located so as to be heard in every room above all other sounds. The sounding device should be used for fire alarms only.

Some hospital authorities believe that an audible fire alarm signal may have an adverse effect on many types of hospital patients. Under such circumstances, distinctive visual alarm signals may be substituted for the audible signals in the nursing unit. Enough visual signals should be distributed throughout the nursing unit to provide an adequate warning. Visual signals should be located in the corridors, nurses stations, utility rooms, pantries, and other work rooms where there may be nurses.

3. PLANNING TO RESTRICT THE SPREAD OF FIRE

The most comprehensive protective measures can be incorporated in a hospital, yet fires will still occur because of the human element. It is necessary to make sure that any accidental fires will be controlled in time to avert a major catastrophe.

Confinement of Fire Within a Room. If a fire starts in a room, it should be possible to keep it within that room until it burns itself out or until it is discovered and put out. To accomplish this, all walls and floors should be built of noncombustible materials. Concealed spaces behind finish materials or within the wall construction should be suitably blocked and fire-stopped to preclude the passage of smoke and gases from one room to another, or from one floor to another.

Openings through walls and floors should receive particular attention. Metal door frames are widely used in today's institutional buildings and are highly desirable for fire safety. Wood doors, if of heavy or solid core construction, are suitable for all patients' rooms and other locations where fire doors are not specifically required. The use of louvred panels and ventilating transoms in interior doors should not be permitted since they would allow the passage of

smoke and flames out from a room.

Subdivision of Each Floor into Compartments. It may not be possible to confine all fires to an individual room or other small area before they are controlled by organized fire fighting services, so it is recommended further that the designer subdivide each floor into at least two compartments or separate areas. This may be readily accomplished by simply providing a fire-resistive partition extending across the building from side wall to side wall and from floor to floor.

Where these transverse barriers cut across corridors, a pair of close fitting fire doors of the automatic type should be installed (see definition of automatic type fire door below). At least one such fire resistive partition should be used at each floor level of every building; additional ones should be used for larger buildings so that their spacing would be from 100 to 150 ft apart. Figure 1 indicates how various typical building layouts can be divided into convenient compartments.

Isolation of Each Floor Level. In addition to the hazards due to actual fire itself, there is perhaps as great a danger from asphyxiation on floors considerably removed from the floor on which the fire occurs. Many lives have been lost this way. To isolate each story in an effective manner from the danger of fire, smoke or gases which may originate in another story, it is important to enclose all stairways, elevator shafts,

SUGGESTED LOCATIONS FOR EXTINGUISHING AND AUTOMATIC ALARM SYSTEMS

TABLE 1

SPRINKLERS OR CHEMICAL ACTUATED EXTINGUISHING OR SMOKE SYSTEMS DETECTION

LOCATION WITH ALARMS ALARMS

LOCATION	SYSTEMS WITH ALARMS	DETECTION
Mechanical Equipment Room		6
Fuel Storage Room		
Basement Corridors		
Carpenter Shop		
Paint Shop		
Trash Collecting Room		
Combustible Storage Room		
Laundry Chute		
Accessible Attic		
Range Exhaust ducts		
Gift shop, snack bar, etc.		
A STATE OF THE PARTY OF THE PAR	Balling St. Balling	ALL PRINCIPAL OF THE PARTY OF T

dumbwaiters, and ventilating shafts in properly constructed fire-resistive walls.

Door and access openings into these enclosures should be protected by approved doors of the self-closing or automatic closing type. Similarly, fire stopping should be provided to cut off all concealed draft openings (both vertical and horizontal) and to form an effective fire and smoke barrier between stories and between a top story and the roof space. The following specific locations should be carefully detailed to provide adequate fire-stopping measures:

- At floor and ceiling levels of all stud walls.
- 2. In furred masonry walls.
- Around all edges of sliding door pockets.
- At holes in walls, floors and ceilings where pipes and pipe shafts pass through.
- 5. Space between suspended ceiling

and structural floor on roof construction above.

Fire Doors. These doors are especially designed to resist the passage of fire through the openings in the walls or partitions in which they are installed. They have been classified according to the degree of protection necessary, according to the character and location of the wall.

Class A openings are in division walls separating buildings or compartmentalizing a single building into important fire areas. Doors protecting such openings are generally required on both sides of the wall.

Class B openings are in enclosures to vertical communications through buildings (stairs, elevators, hatchways, etc.), and in walls isolating areas of great hazard from the hospital proper. Doors protecting such openings are required on one side of the wall only.

CLASSIFICATION

Class C openings are in corridor and room partitions.

Class D, E and F openings are those in exterior walls which have severe, moderate or light exposure, respectively, from outside the buildings.

Several types of fire doors are available for each of the classifications listed above. Care should be taken in selecting the type of door acceptable for each location, using, if possible, the consultation service of the inspection department having jurisdiction. Doors should be labeled or otherwise indicated as meeting the standard requirements for the various classifications of openings.

Fire doors on openings which are used as a means of exit should be of the swinging type, and should open in the direction of exit travel in such a manner as not to obstruct the passage or the operation of other doors.

Properly installed swinging doors are easier to operate, especially under emergency conditions, than any other type and offer less resistance to rapid and emergency egress. These doors should be self-closing or automatic types. A self-closing door is one which is normally kept in a closed position by some mechanical device. An automatic door is one which is normally kept open and is arranged to close automatically when released by the action of heat or can be readily closed by manual controls.

Fire doors should be mounted on a labeled door frame and equipped with labeled hardware. Table 2 indicates various locations in a hospital where fire doors may be required.

SUGGESTED LOCATIONS FOR FIRE DOORS

LOCATION

TABLE 2

C Stairways Fire walls **Boiler Room Fuel Storage Room** Maintenance Shop П **Paint Storage Refinishing Shop** Carpenter Shop Mechanical and Electrical Shop Laundry Room **General Storage** Records Storage **Furniture Storage Pharmacy Stores** Anesthesia Storage Kitchen **Alcohol Vault** Elevators 6 **Dumbwaiters** Trash Collecting Rooms

4. PLANNING FOR EXTINGUISH-MENT OF FIRE

Fire Extinguishers. A fire extinguisher is designed to cope with fire at an early stage. The architect should specify the sizes and types of portable extinguishers required, and indicate on the drawings just where each should be located in order to be ready for immediate use.

Several types of fire extinguishers are available, but all are not equally effective upon different kinds of fires. Thus, consideration should be given to the kinds of fires which may occur in the various departments of a hospital and to the proper type of extinguishers required.

Three general classes of fires have been established:

Class A fires may be defined as fires in ordinary combustible materials (wood, paper, fabric) where the quenching and FIRE

TABLE 3

SUGGESTED QUANTITYT FOR **EXTINGUISHER*** CLASSIFICATION 50 BEDS 100 BEDS 200 BEDS SIZE AND TYPE 25 BEDS DEPARTMENT B C 1 1 Administration 21/2 Gal Water 1 ADJUNCT DIAGNOSTIC AND TREATMENT 1 1 1 5 lb CO2 Laboratory ٦ 1 2 5 Ib CO П Radiographic Suite 1 2** X-Ray Therapy Suite 100 5 lb CO 1 п 5 lb CO2 Pharmacy 12 2 4 8 21/2 Gal Water Nursing 1 1 1 21/2 Gal Water Nursery 1 2 2 2 10 lb CO2 Surgical 2 1 2 2 10 lb CO2 Obstetrical 1 1 1 5 Ib CO2 Emergency 1 1 1 2 10 lb CO2 Kitchen 1 1 1 п 21/2 Gal Water Central Storeroom 1 1 1 21/2 Gal Water 200 Laundry SERVICE 1 1 1 10 lb CO: Laundry 1 1 1 10 lb CO2 Maintenance 1 2 2 2

10 lb CO2

21/2 Gal Water

Boiler Room

Outpatient

1

1

1

cooling effects of water or solutions containing large proportions of water, are of first importance.

Class B fires may be defined as fires in flammable liquids and greases (oils, gasoline, paint) where a blanketing effect to suppress combustion does the most good.

Class C fires are fires in electrical equipment (motors, controls, panels, wiring) where the use of a non-conducting extinguishing agent is of major importance.

Table 3 indicates the classes of fire which may be expected to occur in the various hospital departments and suggests the size, type and number of fire extinguishers which may be needed in the different-sized hospitals.

Arrangement of Fire Extinguishers. Fire extinguishers should be located so that a person will not have to travel more than 100 ft from any point to reach the nearest unit, and at least one unit shall be required for each 5,000 sq ft of floor area. Additional units of suitable types may be required for protection against special hazards.

The usual requirement for mounting fire extinguishers states ". . . shall be hung on hangers or set on brackets or shelves so that the top of the extinguisher is not more than 5 ft above the floor."

Because the weight of the unit (about 35 lb each for 21/2-gal. water type, or 10-lb CO2 type) may make it difficult for a nurse to remove it from the wall when hung at the maximum height listed above, some authorities suggest that such an extinguisher be located as low as possible on the wall. If this is followed the extinguishers should be mounted on the wall so that the bottom of the extinguisher is located about 1 ft above the floor to permit uninterrupted operation of the floor cleaning and waxing machines.

5. PLANNING FOR EXITS

Among the leading causes for loss of life in institutional fires is the lack of sufficient and adequate exit facilities. When the fire persists, it may be necessary to remove patients who are endangered. Proper exit facilities should be available to expedite rapid evacuation.

There is one factor which complicates the evacuation problem in hospital buildings. Because many patients are physically incapacitated, normal evacuation methods would be very slow. It is believed by many authorities that proper compartmentation of the building will serve as a means of rapid evacuation from the scene of fire.

Compartmentation. The principle of compartmentation applied to buildings offers a simple and effective means of providing a high degree of safety to the occupants in case of fire. Compartmentation simply means the division of

^{*} This column lists one possible combination of sizes and types. Other types of extinguishers of equivalent size and function may be used.

^{**} These extinguishers may be omitted if the two units sted for the radiographic suite can be available to both adiographic and x-ray therapy.

[†]The number of extinguishers listed is an approximate distribution of extinguishers for an average hospital. The actual number required will depend on the physical layout of the particular hospital, and minimum requirements will be determined by the inspection department having jurisdiction.

a floor area into two or more sub-areas by the use of transverse fire-resistive partitions.

Here is how compartmentation simplifies and speeds up the evacuation process in a hospital. Let us assume a fire originates in a patient's room. That patient is removed and the door to the room is closed to isolate the blaze. All patients within the compartment where the fire originated are evacuated to adjoining compartments. This can be done easily and quickly, since it involves only the horizontal movement of patients for a relatively short distance. They are now safe from immediate danger and may stay there until the fire is extinguished.

If the fire persists or shows signs of spreading, it may be desirable to remove the patients to a lower floor or to a place of refuge outside the building. Then, with the patients in the safe compartment and out of immediate danger, a longer time may be available for an orderly evacuation either by elevator, if it is available or else down the stairs and out of the building.

As mentioned earlier, each floor housing patients should be divided into at least two compartments. The number of compartments would depend upon the size and layout of the individual building. The length or size of each compartment would depend on the conditions which affect the time it takes to evacuate the area, and may vary from about 100 to 150 ft.

For difficult conditions of evacuation, when the majority of patients are bedridden or physically incapacitated, or where a very small night-time staff is on hand, it is necessary to reduce the size of each compartment in order to permit evacuation from the danger area within a reasonable time. On the other hand, with better conditions for evacuation, a correspondingly larger spacing may be used for the compartments.

Exit Stairways. Another important feature relating to exit facilities is the exit stairway. Figure 2 shows the pertinent dimensions in plan of a typical stairway which will permit evacuation by stretcher or mattress. There should be one stairway in each compartment to facilitate evacuation from one floor to another. It is not desirable to move patients laterally through one or several compartments in order to reach an exit

stairway. There should also be a stairway located at the end of each corridor so that there are no pockets or dead ends in which occupants may be trapped. For one-story buildings, an exit would be used at the end of each corridor.

Exit stairways should preferably discharge directly to the outside or they may lead into a safe corridor on the first floor which in turn would have convenient access to an exit doorway leading to the street.

Exit stairways perform an additional function which is sometimes overlooked. They serve as a means of access for firemen, permitting them to fight an interior fire from close quarters within the building as well as by the customary use of outside ladders.

Corridor Widths. A corridor width of 8 ft is usually recommended for hospital structures to accommodate the stretcher, bed and cart traffic within the building. This dimension is ample for evacuation requirements.

Door Openings. All exit door openings should have a minimum clear width of 44 in. to permit the evacuation of patients on beds, stretchers or mattresses.

(Continued on page 326)

PERFORMANCE CHARACTERISTICS OF SEVERAL TYPES OF FIRE EXTINGUISHERS

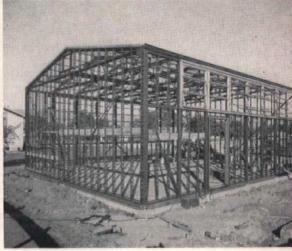
TABLE 4

EXTINGUISHER	CLASS OF FIRE	DESCRIPTION	APPROX CAPACITY	APPROX TIME OF DISCHARGE	APPROX WEIGHT
Chemical Solution	^	Commonly called soda-acid extinguisher, Has powdered chemical (usually sodium bicarbonate) dissolved in water, and liquid chemical (sulphuric acid).	1½ gal 2½ gal	½ min 1 min	20 lb 35 lb
Water	•	Uses hand operated pump or stored pressure cartridge to expel the water through the nozzle.	2½ gal	1 min	35 lb
Foam	А-В	Mixture of foam producing agent with sodium bicarbonate and aluminum sulphate creates pressure to discharge foam through nozzle.	1½ gal 2½ gal	3/3 mln 1 min	20 lb 35 lb
Loaded Stream	A-B	Utilizes a solution of an alkali metal salt.	1 gal 2½ gal	½ mln 1 min	20 lb 35 lb.
Vaporizing Liquid	B-C	Uses specially treated non-conducting liquid (carbon tetra-chloride) which is pumped on the fire and is vaporized by the heat to form a blanket of gas.	2 qt 1 gal	1 min 2 min	16 lb 30 lb
Carbon Dioxide	в-с	Discharges carbon dioxide gas to smother an exposed flame by excluding oxygen from the combustible material.	2¾ lb 10 lb	1/4 min 1 min	9 lb 35 lb
Dry Chemical	B-C	Discharges specially treated sodium bicarbonate which smothers the flame.	4 lb 10 lb	¼ min ⅓ min	10 lb

SCHOOLROOMS MOVE WITH POPULATION

Prefabricated lightweight steel frames are trucked to the site and assembled into self-contained units which can be disconnected from the foundation and hauled intact to a new schoolyard





C. K. Allen, Architect Carl B. Johnson, Structural Engineer

Bakker Construction Company, General Contractors

Movable classroom units, framed by prefabricated lightweight steel and served by above-floor wiring and plumbing, have been designed to alleviate a problem in San Bernardino, California, which no doubt has bothered many school officials and architects. As large segments of the population move to newly developed communities, the mobile schoolrooms are shifted with them so that the school system meets the needs of every area.

The basic schoolroom is a compact 28-ft, 7½-in.-wide unit which can stand alone or be connected in a line of as many other units as are needed. Kindergarten and toilet units are similar to the basic unit in construction and width, differing from it only in length and interior design.

The main requirements in the planning of the 47 San Bernardino school units were: 1. The buildings were to be strong, termite-proof, exactly duplicated and as nearly fireproof as possible.

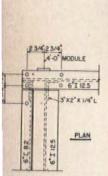
A steel structure seemed to be the answer to most of these requirements. All frames and roof trusses of light-gauge steel were welded at the shop and carried by truck to the school site. Buildings were dimensioned so that the frames and trusses for a complete unit could fit on one truck. At the site the steel frames were lifted off the truck by crane and lowered into position. Almost all field connections were bolted, as shown in the diagrams. At floor level, bolt connections secure the frames to wide-flange steel beams fastened to the concrete foundation.

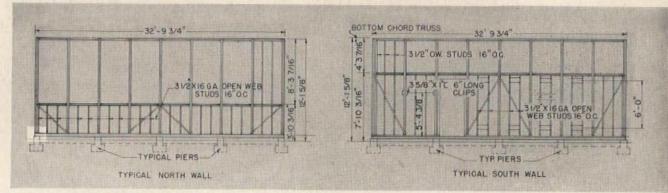
The actual finish floor of a unit is about 10 in. above the exterior finish grade, thus eliminating the need for steps. This type of close-to-ground construction was practical because of the nature of the materials used, which afforded protection from termites and dry rot. The minimum use of wood in the schoolrooms makes them very fireresistant.

Pre-cutting and small assembly work, such as forming of window and door frames, was done in the shop before welding of the wall frames and trusses. Once this preliminary work was accomplished, units could be delivered from the shop at the rate of two a day. Actual job-site erection of a unit, with a crew of five men, required only about 1½ hr.

2. Each building was to be completely self-contained and independent of the others, with its own electricity and plumbing, so that it could be moved without disturbing the other units.

All wiring and plumbing is above the roof trusses and in the walls, so that they





White circles on gray drawings indicate enlarged vertical sections; white rectangles indicate horizontal sections. Strap connection at typical end is shown in elevation (right). Connection to foundation beams between straps is shown in vertical section at far right. Plan view (left) is typical for any corner. Truss below is typical

can be left intact when the building is moved. Nothing is run below floor level.

A service entrance for electric power is located at the end of each unit, as shown in the photograph of the five completed units. Connection is made at the service entrance either by a riser from an underground power cable (as in the photograph) or by a service drop from an overhead supply. Conduits are run from the service head through the roof trusses of the unit to supply the various panelboards, electrical outlets, bell systems and fire alarm systems. Actually only one power connection is made for a series of units, with connections between service heads of adjoining units continuing the conduit from the power source. When a unit is moved, the connection at each service head is severed, and the first unit in the new series is supplied from the power source. When the unit is added to a group of units on another site, the service head is

connected again without any additional wiring.

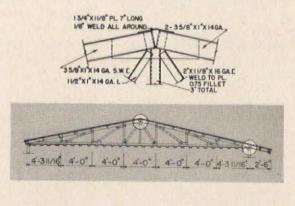
Separate connections for water, gas and sewerage are made at the north side of each unit. Self-contained gas-burning steam radiators are supplied from the gas connections. All connections are made when the unit is erected and simply disconnected when the unit is moved, without any disturbance to the other units.

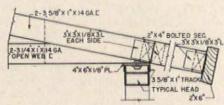
3. Each building was to be of such dimensions that it could be moved with a minimum of difficulty, and yet was to incorporate the maximum number of features found in permanent schoolrooms.

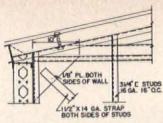
The standard width of all units is 28 ft 7½ in., a size which can be moved easily through all streets in the vicinity of San Bernardino. Disconnections are made very easily when a unit must be moved. After the electricity and plumb-

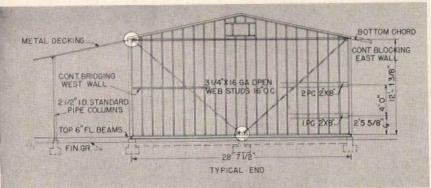
ing are cut off and the galvanized iron closures which are fastened to adjacent units are removed, the steel straps projecting from the concrete piers are unbolted from the steel floor beams. Steel angles, with one vertical leg and one horizontal leg, are then bolted to the beams and jacks placed under the horizontal legs. When the unit has been raised high enough, a set of dollies and movable beams are inserted under the steel beams. Cables for pulling the unit are attached to the dollies, and the complete unit is rolled away, with floors, wiring, piping and furniture undisturbed.

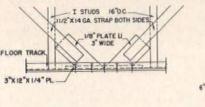
The interior and exterior walls enclosing the steel frames are plaster, with all-metal interior lath and exterior lath of a welded wire fabric with waterproof paper backing. Steel floor decking is welded to the steel floor beams and is topped by plywood and the finish flooring of asphalt tile. Ceilings are of acous-







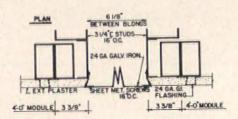


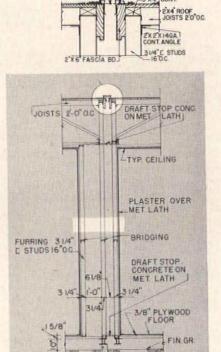


11/2"X 14 GA. STRAP
1/6" PL U
1/4" PL 12" LONG
6" I 1256" C 82
2-3-4" Ø ANCHOR
80LTS

tical tile and are insulated with rockwool. Awning-type windows are high on the north side of the unit to take full advantage of the daylight. On the south side, windows are raised above eye level, thus removing the possibility of distractions from the covered passageways outside. The passages, roofed with steel decking, are in sections and can be demounted and moved with the units. Built-up composition roofing and gravel are used on roofs.

Kindergarten and toilet units can be added in any series of units if there is a need for them. The same basic construction is used for these units, with slightly different window and door arrangements. The length of a toilet unit is 24 ft 6¾ in., and of a kindergarten unit 40 ft 6¾ in. Toilet units contain girls' and boys' toilet rooms and a janitor's room. Kindergarten units include, besides the classroom, toilets for boys and girls and a teacher's workroom.





GRADE BEAM

24 GA GALV



Steel frames are welded at shop



Hoisted onto truck and hauled to school site in complete units



Then lowered to foundation

Materials / Equipment / Furnishings / Services

A SURVEY OF COMMERCIAL FOOD

New concepts are emerging in the design of commercial food service equipment which are bound to affect planning and layout of kitchen and serving facilities. A survey of available equipment indicates these trends:

- · Automatic operation and mobility of equipment are industry's answer to increasing costs of food preparation and service. "Pushbutton" operation, in such units as coffeemakers and dishwashers, pays off in valuable time savings. Mobile equipment replaces many pairs of human legs.
- · More and more people shoppers, travelers and business people - want to eat quickly and well. The resulting need for handling greater numbers with less labor by eliminating every duplication of effort possible has produced equipment which is more compact and

which provides easy access to stored foods and utensils. "Integrated" series of units are being offered to utilize every available inch of space. Food warming by infra-red heat speeds up service, since ready-to-serve plates of food can be set out as they are prepared without danger of cooling.

- · Food preservation is more efficient with "controlled temperature" refrigeration units, which can freeze food, barely freeze it, or just keep it cool in separate sections. A variety of icemaking and ice-crushing machines can produce plentiful supplies.
- · Sanitation, the bugaboo of the kitchen, is a subject that must be kept in mind both by the equipment designer and by the architect in order to comply with public health standards. The National Sanitation Foundation has done much

to standardize sanitary codes and to improve equipment design to meet sanitary requirements (see box, page 202).

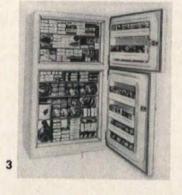
On these and subsequent pages is presented a cross section of some recent developments in commercial food service equipment. It has not been possible to include every type of equipment. The scope has been limited to products which the architect would normally specify or would have to consider in his design of a food service area.

Institutional feeding, extending not only to schools and hospitals but also to churches and industrial plants, presents problems entirely different from those of commercial feeding. With the high cost of help, and large numbers of patients and pupils to feed, hospital and school kitchen facilities are becoming more mechanized. Churches, assuming the responsibility in many areas

VENTILATION ESSENTIAL TO SANITATION

Ventilating hoods in modern commercial kitchens feature filters and interiors that are easily cleaned, satisfying rigid sanitation codes

1. Nathan Straus-Duparquet Inc. claims that 83 per cent of kitchen grease and oil vapors is extracted by baffles in Gaylord ventilating hood. Grease deposit is removed by wiping out grease trough. Front panel can be lifted out so that inside air exhaust system can be cleaned. (33 East 17th St., New York 3, N. Y.) 2. Dunhill Soda Fountain Corp.'s refrigerated equipment stand is topped by ventilator with removable louvers for cleaning filters. Trough catches grease. (79–85 Walworth St., Brooklyn 5, N. Y.)





MAXIMUM STORAGE SPACE OFFERED IN REFRIGERATORS AND FREEZERS

With the large volume of food output in today's eating facilities, refrigerated and frozen products require much storage space

3. United Refrigerator Co.'s "Refrig-N-Freez" features refrigerator space above and freezer space below. Each compartment has a separate door, which is also utilized for storage. (Hudson, Wis.) 4. La Crosse Cooler Co. presents a two-door model reach-in refrigerator with adjustable shelves. (2809-17 Losey Blvd. S., La Crosse, Wis.) 5. McCray Refrigerator Company Inc.'s twin-door freezer stresses accessibility of foods—and removable middle shelf for large-package freezing. (Kendallville, Ind.) 6. Sherer-Gillett Co.'s walk-in cooler is planned for maximum utility and volume storage. Manufacturer says that it provides largest and most efficient storage space per sq ft of floor space. (Marshall, Mich.)



1. Kitchen Hoods





SERVICE EQUIPMENT

of community centers, require wellequipped kitchens usually in very small spaces and on very tight budgets. Mobile cafeterias have been designed for in-plant mass feeding in industry.

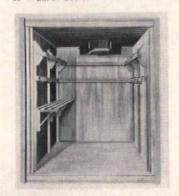
Even with the best equipment, however, kitchen and serving facilities are only as productive and sanitary as their layout is practical. The planning, from the receiving of the bulk food products to the handling of the refuse, is of utmost importance for an efficient, wellintegrated feeding center.

The RECORD is grateful for advice and assistance in the preparation of this round-up to Mr. Ned Greene and Miss Florence Leuthardt, Editors of Reslaurant Equipment Dealer; to Mr. Arthur W. Forbriger of The John Van Range Company; to Mr. Ivan Stern and Mr. Ben Perlstein of H. Friedman & Sons; and to Mr. Harry Blumberg of Nathan Straus-Duparquet Inc.

- 3. Double-duty Refrigerator
- 4. Two-door Reach-in
- 5. Twin-door Freezer



6. Walk-in Cooler



Automatic Equipment Conveyor Belt Units Dishwashers Display Equipment Food Cutters and Shapers Food Warmers Garbage Disposers Ice Machines Liquid Dispensers Mobile Equipment Ovens, Ranges Portable Cafeterias Refrigerators, Freezers "Short-order" Equipment Ventilation Hoods

p. 216 pp. 212, 213 pp. 202, 212 p. 238 p. 220 p. 234 p. 250 pp. 246, 250 p. 228 p. 232 p. 201 p. 242 p. 201 pp. 224, 228 p. 200



7. Bake and Roast Oven

8. Gas Range



OVENS, RANGES ARE EASY TO REACH—AND TO CLEAN

Manufacturers of ovens and ranges cognizant of the tight space conditions in many kitchens and also of sanitary requirements, are producing equipment that utilizes every inch of space-and makes every inch accessible for cleaning

7. Griswold Mfg. Co.'s newest "Aristocraft 54" bake and roast ovens are independently controlled, with possible preheating temperatures of 450 deg in 1/2 hour. Smoke and steam deflectors over oven doors aid sanitation, (1053 West 12th St., Erie, Pa.) 8. Magic Chef, Inc. offers a gas range which includes six burners, an oven, a griddle-broiler and storage space. (1641 So. Kingshighway Blvd., St. Louis 10, Mo.)

AE

VARIETY OF DISHWASHING EQUIPMENT

"Hands Off" is a practical rule of sanitation in eating establishments, and manufacturers are adapting as many devices as possible to it, especially in washing equipment

9. The Jackson dishwasher, with a mechanical capacity of 1200 dishes per hour, requires only 2 sq ft of floor area. The completely automatic washer can be supplemented with a pre-rinse sink complete with garbage disposal and booster heater. (3700 E. 93rd St., Cleveland 5, Ohio) 10. The newest Kewanee dishwash model is recommended for cities and states whose health laws require a prewash or third tub operation in dishwashing. Available in both left-to-right and right-to-left operations, the washer comes with stainless steel or galvanized tubs. (Kewanee, III.) 11. The Steril-O-Matic silver basket complies with the "Hands Off" principle in three ways: carries soiled silver to kitchen, through the dishwasher and back for serving, (4530 No. Keystone Ave., Indianapolis 5, Ind.) 12. Speedy Electric Glass Washer Co. manufactures a portable electric rotary brush which can be used not only for washing glasses but also for scrubbing dishes, cups, etc., removing lipstick and caked material. (1920 W. Columbia Ave., Chicago 26, III.) 13. The Beaver two-tub dishwasher has a self-contained unit which heats water with manual or automatic gas controls or electric controls. (Beaver Dam, Wis.) 14. The Cunningham Model B-50 glasswasher, with three-compartment sink for pre-washing, brush-scrubbing and rinsing-sterilizing, uses a minimum of floor space for large hourly production. (500 So. Thropp St., Chicago 7, III.) 15. Gordon Hatch Co. produces the "Hatco Electric Booster" to provide ample quantities of 180° F water for the sanitizing rinse of commercial dishwashers. A space saver (26 in. in diameter and 31 in. high), it has a 25-gal storage capacity. (531 W. Wisconsin Ave., Milwaukee 3, Wis.)



9. Automatic Washer

11. Silver Basket





12. Glass Washer

10. Three-tub Washer







14. Three-compartment Glass Washer





FOOD SERVICE EQUIPMENT STANDARDS

The National Sanitation Foundation, an independent non-profit organization, is the sponsor of a program for standardizing, testing and approving food service equipment. The Foundation, which has headquarters at the School of Public Health of the University of Michigan, has already issued three standards on food service equipment and has three more in the planning stage. The three available standards are:

- 1. Soda Fountain and Luncheonette Equipment
- 2. Food Service Equipment
- 3. Spray-type Dishwashing Machines

The three standards being planned are: Commercial Cooking Equipment, Hot Water (a supplement to Standard No. 3) and Steam Tables.

The standards specify materials that can be used, design, construction, installation and maintenance.

The Foundation operates a testing laboratory similar to underwriters' laboratories for analyzing equipment submitted by manufacturers for approval. If the equipment meets the qualifications specified in the standards, permission is granted to use an NSF seal.

Before development of new equipment or design changes in standard equipment, manufacturers are urged to introduce their plans to the Foundation for discussion with business, industry and health authorities. The NSF acts as a clearinghouse for new ideas and coordinator of sanitary codes to help ensure that food service equipment incorporates the latest in sanitary and technological developments.



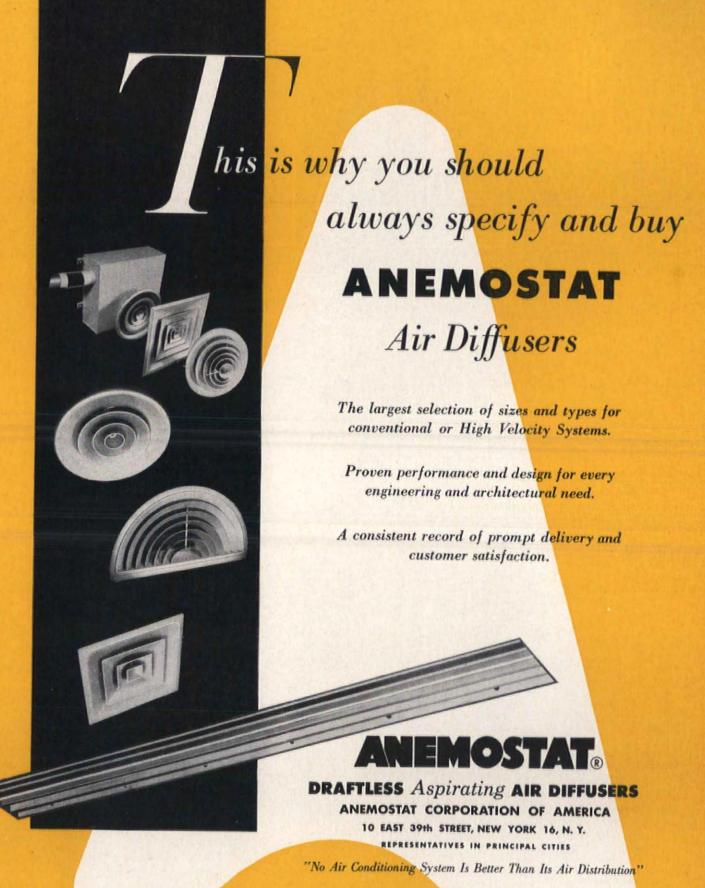


17. Kitchen Sink

16. Semi-automatic Washer

All corners, joints, connections, legs, etc., must be accessible for sanitary upkeep, Manufacturers are producing equipment with smooth surfaces and cove corners to make cleaning easy

Insinger claims that its newest semi-automatic dishwashing machine is "as easy to clean as a kitchen sink." (6245 State Rd., Philadelphia 35, Penna.)
 The Active Tool & Manufacturing Co. shows the kitchen sink itself—with stainless steel surface and cove corners. (Detroit, Mich.)



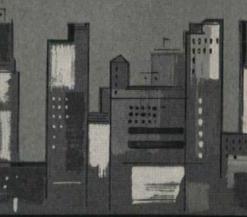
proved in big buildings for than years!

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GYPSUM PARTITION





Chicago Housing Authority apartments Holabird & Root & Burgee, architects S. N. Nielson, general contractor McNulty Bros., plastering contractors

for low-cost, fireproof masonry partitions

In apartments, offices, schools, institutions — big buildings of all types — PYROBAR Tile has been jobtested, job-proved during half a century. Here's why PYROBAR is the accepted material for non-loadbearing partitions—why you'll want to specify PYROBAR for your big buildings:

fireproof—fire ratings from 1 to 5 hours, depending on thickness of tile and method of plastering

G G G G

lightweight-30 to 50 per cent lighter than other commonly used masonry units

plaster band—natural affinity of plaster for PYROBAR gives bond a safety factor of 173

saves plaster—large size machine-moulded units lay up accurately; grounds are ½ inch instead of 5% or 34

sound resistant—up to 42.8 db. sound transmission loss rating (up to 57.6 db. rating with one side furred with resilient clips and metal lath.)

low cost—material cost is low; large units lay up fast; lightweight; fewer joints; cutting ease reduces waste

For additional information, see your U.S.G. Architects' Service representative . . . or write Dept. AR-3, 300 W. Adams St., Chicago 6, III.

*T. M. Reg. U. S. Pat. Off.

u

the greatest name in building



TIME-SAVER STANDARDS



STRUCTURAL CLAY MASONRY-1: CHEMICAL-RESISTANT TILE AND BRICK

Presented through the courtesy of Structural Clay Products Institute*

Chemical-resistant clay masonry is used extensively in many industries for floors, vats and tanks, where conventional materials would deteriorate when subjected to acids, alkalis, petroleum products, vegetable oils, fats, etc.

Chemical-resistant or "acid-proof" brick and tile will withstand mild alkalis and all acids except hydrofluoric.

"Carbon" brick may be necessary for strong alkalis and for hydrofluoric acid and its salts.

MASONRY UNITS

Acid-proof brick or tile must be structurally strong and free of laminations. There should be no pores, and the surface texture should be sufficiently roughened to insure a strong bond with the joints.

Size. The brick and tile range in thickness from approximately 1 to 4½ in.; in width from 1¾ to 6 in.; and in length from 7½ to 12 in.

JOINTS

The life of a chemical-resistant installation depends greatly on the proper jointing material. For example, there are few chemicals which do not attack regular portland cement mortars. Although the bricks or tile may not be affected by acids or alkalis, the joints may be attacked, causing disintegration of the joints, and eventual loosening of the masonry units.

In the table on sheet 2 (page 207) are the types of chemicals to which the masonry might be exposed and the most common joint treatments recommended. Joints should be as narrow as possible to minimize exposed joint area and to reduce the amount of jointing material required. Instructions and limitations of any material, as recommended or noted by the manufacturers, should be observed explicitly.

* Information in these sheets originally appeared in "Technical Notes on Brick and Tile Construction," November 1953.

MORTARS

Type 1—Waterproofed Portland Cement.

Application. Can be used in joints of masonry floors, vats or tanks subjected to excessive moisture or liquids which do not attack portland cement.

Resistant To: Lactic acid (milk or milk products), petroleum and vegetable oils, molasses, etc.

Preparation: Cement is available with waterproofing medium already in it, or the mortar can be made waterproof by addition of the correct amount of integral admixture. Also there are surface treatments which will make the joints more impervious to moisture.

Type 2—Special Admixtures for Portland Cement.

Application: Often used in dairies, breweries, etc., where the solutions do not appreciably attack portland cement mortar, and where there is little abrasion.

Resistant To: Very mild acid solutions and some other chemicals.

Preparation: Admixtures can be added on the job in either powder or liquid form.

Type 3—Sodium Silicate Cements.

Application: Used for acid-resistant mortar setting beds and joints of brick or tile-lined chemical structures—vats, tanks etc.

Resistant To: Hot and cold acids of all strengths except hydrofluoric, and temperatures as high as 1800 F.

Not Resistant To: Alkaline solutions; may be soluble in water. Impractical for ordinary floors. Should not be applied directly to setting beds of portland cement (attacked by alkalis), unless it is coated with asphalt first.

Preparation: Such cements should be quick-setting and self-hardening. They are usually prepared by mixing the sodium silicate binder with a dry powder or filler.

Type 4—Synthetic Resin Cements.

Application: Excellent for setting beds and joints of masonry lined apparatus, as well as for floors and walls in chemical plants, pulp mills, oil refineries, food and beverage packing plants, dairies and breweries.

Resistant To: Acids (except nitric and chromic), water, steam, oils, fats, and weak alkalis. Highly resistant to abrasion and washing action, thermal shock and temperatures up to 300 F. The cements are quick-setting and self-hardening. When used with units laid in a bed of portland cement mortars, the open joints should be washed with dilute hydrochloric acid to neutralize the alkalinity of portland cement.

Preparation: Resin solution mixed with dry powder, and applied cold.

Type 5—Sulfur Base Cements.

Application: Used primarily for joints of masonry lined chemical apparatus, floors, tanks, etc., subjected to severe deterioration due to acids.

Resistant To: All acids.

Not Resistant To: Weak alkalis and oils. Limited to temperatures less than 200 F.

Preparation: Available in powder or brick form and must be heated to molten state and poured into joints while hot. As the joint cools and hardens, it is tooled to smooth finish.

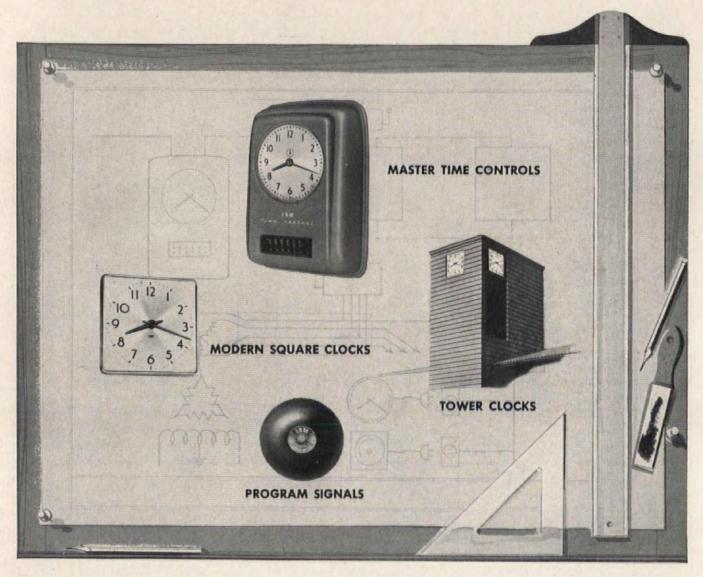
Type 6—Bituminous Mortars, Asphaltic Mixtures and Emulsions.

Application: Used as membranes, setting beds, grouting, and poured joints for certain types of chemicalresistant masonry installations.

Resistant To: Acids and certain alkalis.

Not Resistant To: Oils, fats, greases, and some organic solvents.

Preparation: Applied either hot or cold. Contain fillers such as portland cement, sand, asbestos, gypsum etc.



Simplify Planning ... No Special Wiring Needed

- IBM Electronic Time and Program Signaling Systems eliminate need for special clock and signal wiring . . . synchronize clocks, recorders and audible signals . . . control utilities . . . all automatically.
- Easy, economical to install...clocks and signals connect with regular AC lighting lines ... are supervised electronically.
- Self-regulating on 12-hour basis...master control automatically checks—and corrects as much as 12 hours, if necessary—all clocks twice daily. Automatic self-regulation assures coordination of all time units.
- Can be altered with little cost or effort...
 system may be expanded, units relocated, without expense of additional controls or special wiring.

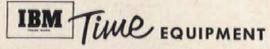
Control Utilities Automatically

IBM Electronic Time and Program Signaling Systems can save costs, conserve natural resources by automatically scheduling utility functions...

sound audible signals • open and close ventilators • turn heating and air conditioning systems on and off • switch light circuits on and off • open and close water flow valves.

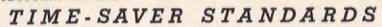


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INTERNATIONAL BUSINESS MACHINES · 590 Madison Ave., New York 22, N.Y.

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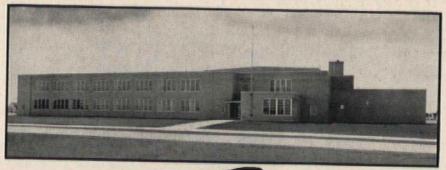
STRUCTURAL CLAY MASONRY-2: CHEMICAL-RESISTANT TILE AND BRICK

Presented through the courtesy of Structural Clay Products Institute

	Type of Chemical	Action on Regular Portland Cement Joints	Suggested Type of Joint or Joint Treatment
ACIDS	Acetic Acid Waters Carbolic Carbonic Humic Hydrochloric Hydrofluoric (1) Lactic Muriatic Nitric Oxalic Phosphoric Sulphuric Sulphurous Tannic	yes yes yes yes Conditional yes	2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 3, 4, 5, 6 3, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6 2, 3, 4, 5, 6
N.	Carbonates of: Ammonia Potassium Sodium	Conditional	2, 4, 6
	Chlorides of: Calcium Potassium Sodium Strontium	Conditional	2, 3, 4, 5, 6
	Chlorides of: Ammonia Copper Iron Magnesium Mercury Zinc	yes	2, 3, 4, 5, 6
S	Fluorides	Conditional	2, 4, 5
SALTS AND ALKALIES	Hydroxides of: Ammonia Potassium Sodium	yes	2, 6
	Nitrates of: Ammonia Calcium Potassium Sodium	Conditional	2, 3, 5, 6
	Potassium Permanganate	no	2, 3
	Silicates	no	2, 4, 6
	Sulphates of: Ammonia	yes	2, 3, 4, 5
	Sulphates of: Aluminum Calcium Cobalt Copper Iron Manganese Nickel Potassium Sodium Zinc	yes	2, 3, 4, 5, 6
OILS	Heavy oils below 30° Baume	no	1, 2, 3, 4
NO	Light oils above 30° Baume	Penetration	1, 2, 3, 4
PETROLEUM OILS	Benzine Gasoline Kerosene Naptha	Penetration	1, 2, 3, 4

	Type of Chemical	Action on Regular Portland Cement Joints	Suggested Type of Joint or Joint Treatment
COAL TAR DISTILLATES	Alizarin Anthracene Benzol Carbozol Cumol Xylol	no	2, 3
	Paraffin Pitch Toluol	no	2, 3, 4
	Carbolineum Creosote Cresol Lysol Phenol	yes	2, 3
	Cotton seed	yes	1, 2, 3, 4
	Rosin	no	1, 2, 3, 4
VEGETABLE OILS	Almond Castor China-wood Cocoanut Linseed Olive Peanut Poppy seed Rape seed Soy-bean Tung Walnut	Conditional	1, 2, 3, 4
	Turpentine	Penetration	1, 2, 3, 4
FATT ACIDS (animal)	Fish oil Foot oil Lard and lard oil Tallow and tallow oil	Conditional	1, 2, 3, 4
MISCELLANEOUS	Alcohol Ammonium hydroxide Baking soda Beer Bleaching powder Borax, Boric acid Brine (salt) Buttermilk Charged water Caustic soda Cider Cinders Coal Corn syrup Electrolyte Formallin Fruit juices Glucose Glycerine Honey Lye Milk Molasses Niter Sal Ammoniac Sal Ammoniac Sal Soda Saltpeter Sauerkraut Silage Tanning liquor Vinegar Washing soda Whey	no Conditional Conditional Conditional Conditional Conditional Conditional yes Conditional yes yes yes Conditional yes yes Conditional no no yes Conditional Yes Conditional	2, 3, 4 2, 3, 6 2, 3, 4, 6 3, 4, 5 2, 3, 4, 5, 6 2, 3, 4, 5, 6

⁽¹⁾ Special carbon resinous or carbon sulphur cements are recommended for use with hydrofluoric acid and its corrosive salts.



There are 16,880 sq. ft. of Loxit-laid maple floors in this Pierre Navarre School, South Bend, Indiana.

N. Roy Shambleau, Architect Harry H. Verkler,

General Contractor

DO IT Right THE FIRST TIME!

The Loxit-laid maple floors in the Pierre Navarre School will stay permanently beautiful with minimum maintenance.



THE HEART OF THE LOXIT

All classrooms in the Pierre Navarre School benefit from maple floors laid with Loxit wood Floor Laying System. Three basic parts form the heart of a Loxit-laid floor: a channel with turned-in edges, the anchors which secure it to the concrete, and a uniquely-designed clip which fastens ordinary tongue and groove strip flooring permanently together and to the channel. Everything locks together! No nails, wood sleepers or adhesives are used. A Loxit-laid floor is easy to install. It is beautiful! It is permanent! Maintenance is simplified! The Loxit System limits expansion and compensates for contraction; vertical movement is eliminated and squeaking avoided. For a floor that is right—from the start, and stays right—always specify Loxit!

Literature, samples and catalogs are available. Write Today!

FLOOR-LAYING SYSTEM

LOXIT SYSTEMS, INC.

1217 WEST WASHINGTON BOULEVARD, CHICAGO 7, ILLINOIS

Floors are important, If you are not familiar with the Loxit wood Floor Laying System, consult your architect. His advice can save you money, time and trouble.



OFFICE LITERATURE

AE

BEST IN BUILDING PRODUCTS LITERATURE ANNOUNCED

Three Certificates of Exceptional Merit and 49 Merit and Honorable Mention winners will be announced this month out of about 180 entries in the Annual Building Products Literature Competition sponsored by the American Institute of Architects and the Producers' Council, Inc.

The jury of five A.I.A. judges, headed by Chairman Ben John Small, A.I.A., New York, increased the number of winners by 17 over last year because of the quality of the material presented. This fact indicates the success of the purposes of the competition, which are as follows:

(1) to recognize excellence in product literature directed to the architect, and

(2) to aid manufacturers in increasing the technical and informative value of descriptive product literature of assistance to the architect in the selection and specifying of building products for specific uses.

The following awards will be presented on June 14 as part of the one-day Spring meeting of the Producers' Council during the Annual Convention of the A.I.A.

in Boston:

Class I (Manuals, Handbooks, Basic Information)
Certificate of Merit: CRSI Handbook — Concrete
Reinforced Steel Institute; Manual of Automatic
Controls — Minneapolis-Honeywell Regulator
Co.; Reinforced Brick Masonry and Lateral
Force Design — Structural Clay Products Institute.

Honorable Mention: Thermopane Manual — Libbey-Owens-Ford Glass Co.; Suggestions for Design Radiant Panel Heating with Copper Tube — Chase Brass & Copper Co.; A Catalog of Building Stone — International Cut Stone Contractors' & Quarrymen's Association; Design and Construction of Lintels for Concrete Masonry Buildings — National Concrete Masonry Association.

Class II (Literature on Particular Products)
Certificate of Exceptional Merit: Armstrong's Floors
and Walls — Armstrong Cork Co.

Certificate of Merit: Armstrong's Acoustical Materials — Armstrong Cork Co.; Cofar Product Manual — Granco Steel Products Co.; Fiberglas Series — Owens-Corning Fiberglas Corp.; Folding Gate Catalog — Acorn Wire & Iron Works; Fenestra Blue Book of Drafting Room Standards — Detroit Steel Products Co.; Truscon Metal Windows and Doors — Truscon Steel Div., Republic Steel Corp.; X-Ray Protection — Light Proofing — Ray Proof Corp.

Honorable Mention: Richmond Engineered Tying
Devices — Richmond Screw Anchor Co.; PC
Glass Blocks — Pittsburgh Corning Corp.;
Builders Hardware Specialties — Glynn Johnson Corp.; Structural Insulation — The Celotex
Corp.; Foamglas-Rigid Insulation — Pittsburgh
Corning Corp.; Fiberglas Industrial Insulations
— Owens-Corning Fiberglas Corp.; Fenestra
Steel and Aluminum Building Panels — Detroit
Steel Products Co.; Mills Metal Partitions —
Mills Metal Compartment Co., Div. of The Mills
Co.; Mills Movable Metal Walls — The Mills



Certificate of Exceptional Merit winners are pictured here for three of the four classes. No top award was made in Class I

Co.; Fiat Precast Receptors — Fiat Metal Mfg.
Co.; Drinking Fountains and Coolers — Catalog
— The Halsey W. Taylor Co.; Chase Copper
Roofing for Roofers and Architects — Chase
Brass and Copper Co.; Architects and Engineers
Handbook of Lighting Glassware — Corning
Glass Works; Ceco Steel Windows, Aluminum
Windows, Hollow Metal Doors — Ceco Steel
Products Corp.

Class III (General Promotional Literature)

Certificate of Exceptional Merit: Ideas for Wall Patterns with Concrete Masonry — National Concrete Masonry Association.

Certificate of Merit: A New Concept in Retail
Merchandising and Ceiling Design — OwensCorning Fiberglas Corp.; Type of Workmanship
Recommended for Concrete Block Walls —
Louisville Cement Co.; Mosaic Series — The
Mosaic Title Co.

Honorable Mention: Portfolio of Interiors — Armstrong Cork Co.; Modern Door Control — LCN Closers, Inc.; Curtis Kitchens — Curtis Companies Service Bureau; Brick and Tile Series — Structural Clay Products Institute; A Collection of Glen-Gery — Glen-Gery Shale Brick Corp.; Design of the Month — Pittsburgh Plate Glass Co.; Redwood News — California Redwood Association; Roddiscraft Architectural Plywoods — Roddis Plywood Corp.; Alcoa Architectural Achievements — Aluminum Company of America; Remotaire Systems Book — American Radiator & Standard Sanitary Corp.

Class IV (Space Advertising Directed to Architects)
Certificate of Exceptional Merit: New Pittco No. 17
Recessed Sash — Pittsburgh Plate Glass Co.

Certificate of Merit: Fiberglas Sonofaced Acoustical File — Owens-Corning Fiberglas Corp.; Honeywell Customized Temperature Control — Minneapolis-Honeywell Regulator Co.; Advertising Series — Stone — International Cut Stone Contractors' & Quarrymen's Association.

Honorable Mention: Bruce Strip Hardwood Floors

— E. L. Bruce Co.; Pittsburgh Glass in Recent
Construction — Pittsburgh Plate Glass Co.;
Not How Thick But How Thermal — OwensCorning Fiberglas Corp.; SCR Insulated Cavity
Wall — Structural Clay Products Institute;
Here's Proof — Ceco Steel Products Corp.



New Pillco
No.17
Recessed Sash

The second s

IV.

WINDOWS AND DOORS

- * Gate City Wood Awning Windows, AIA File No. 16-L is a filing folder containing a brochure giving specifications and sectional drawings of wood awning windows, a sheet of installation suggestions and five detail sheets on metal horizontal weatherstripping, vinyl jamb weatherstripping, thermopane glazing, extension jambs and multi-unit assembly material. Gate City Sash and Door Co., Box 901, Fort Lauderdale, Fla.
- * Fenestra Slock Products describes Fenestra products for residential and commercial builders including casement windows, residential projected windows, installation accessories for windows, the outside-inside metal trimmed units, steel window wall units, basement and utility windows, sliding closet doors, hollow metal doors. 12 pp, illus. Detroit Sleel Products Co., 3113 Griffin St., Detroit 11, Mich.
- Roly-Door contains illustrations and complete specifications of Roly-Door installations in various styles, sizes and types of homes, 8 pp, illus. Morrison Steel Products, Inc., 601 Amherst St., Buffalo 7, N. Y.

(Continued on page 254)

^{*} Other product information in Sweet's Architectural File, 1954

PAN AMERICAN MOTEL Miami Beach, Fla. Architect: Carlos B. Schoeppl General Contractor: C. R. Clark Co. Rotary Oildraulic Elevator installed by Miami Elevator Co., Inc.



UNITED BANKERS
LIFE BUILDING
Dallas, Texas
Architect:
W. W. Ahlschlager
General Contractor:
T. C. Bateson Const. Co.
Rotary Oildraulic Elevators
installed by HunterHayes Elevator Co.

Rotary Oildraulic





elevator for modern buildings

The Rotary Oildraulic Elevator is moved and controlled by the smooth, dependable, economical power of oil under pressure.

No penthouse or heavy sidewalls—The elevator car and its load are supported by the hydraulic system—not by the building structure. This eliminates the costly, unsightly penthouse that interferes with modern architectural design. It also makes possible a substantial lightening of the hoistway structure.

Flexibility in power unit location—Rotary's compact power unit can be placed in any convenient location where a pipeline can be run from the unit to the hoistway. Thus it can be located in an area with other machinery for convenience in servicing and to save space. Or it can be

placed in a small machine room built to accommodate the power unit being used on the installation.

Smooth starts, accurate landings—The revolutionary Rota-Flow oil hydraulic power system gives velvet-smooth starts and cushioned stops. Oildraulic automatic floor leveling positions the car to each landing with exactness— 1/4" accuracy guaranteed! The new patented Oildraulic Controller handles the functions of seven separate control valves...simplifies adjustments and maintenance.

Coast-to-coast service—Over 75,000 Oildraulic elevators and lifts have been installed and are serviced by Rotary's nation-wide distributor organization. Our Engineering Department will be glad to assist you on plans and specifications for passenger or freight elevators.



Write for new catalog RE-307 and complete architectural data

ROTARY LIFT CO., 1109 KENTUCKY, MEMPHIS 2, TENN.

SEE OUR CATALOG IN SWEET'S

How to acquire high acoustical value at low cost with Q-DECK



Without further treatment, the exposed fluted undersurface of Robertson's strong, long-span roof deck has a recognizable noise reduction effect. However, consistent demand for higher noise reduction in institutional, industrial and commercial applications has led Robertson engineers to develop a highly effective, low-cost acoustical treatment. Acoustical material (such as glass fiber) is placed in the cells of the Q-Deck and held in place by means of an adhesive. The ceiling may be repeatedly spray painted without impairing its value. The noise reduction coefficients shown in the table below were obtained through tests conducted by Dr. Paul H. Geiger at the University of Michigan, using accepted laboratory equipment and procedure.

	NOISE REDUCTION COEFFICIENT
Type 3 or UK Deck with 1" of sound absorbent material	.60
Type 12 or FK Deck with 2" of sound absorbent material	.72
Type 12 or FK Deck with 4" of sound absorbent material	.90

For areas where the more costly suspended ceiling is desired, any standard method of application can be used. For details concerning this or the new low-cost Robertson method of roof deck engineering data and structural details, use the coupon below.

Robertson Q-DECK

a product of H. H. Robertson Company

2404 Farmers Bank Building

Pittsburgh 22, Pennsylvania



Please send the following free file material from Robertson's

Technical Library: Roof Deck Catalog Acoustical Data Book

NAME

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A PRODUCTS

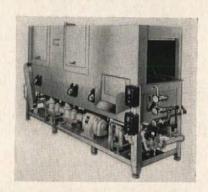
(Continued from page 202)

CONVEYOR-BELT DISHWASHERS

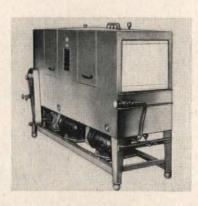
Conveyor-belt dishwashers ensure sanitation from washing through drying and reduce valuable stacking time and loss through breakage in large output kitchens



18. The G. S. Blakeslee & Co. conveyor washer includes 18-in. pre-wash compartment. Molded nylon links hold dishes upright so that they do not touch metal. (1844 S. Laramie Ave., Chicago 50, III.)



19. The Toledo Scale Co. dishwasher also features a pre-wash compartment. A "dwell" control permits dishes to be held in wash chamber a longer time if desired. (Toledo 1, Ohio)



20. In The Fearless Dishwasher Co., Inc. rack conveyor, a safety disconnect clutch works automatically in case of jamming of racks. 175–179 Colvin St., Rochester 2, N. Y.)

A 1 PRODUCTS

CONVEYOR BELTS HAVE OTHER USES

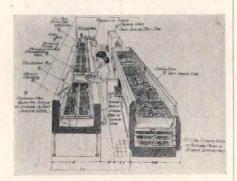
Conveyor belts have other applications in food service in addition to their use in dishwashing machines. With increasing attention being given to speed and efficiency as well as sanitation, conveyor belts are specified for many uses, especially in hospitals



21. Samuel Olson Mfg. Co., Inc. has installed a tray make-up conveyor in the Swedish American Hospital in Rockford, Ill. Patients' meals are prepared on a production line basis on a conveyor leading to a subveyor unit at the back. (2418 Bloomingdale Ave., Chicago 47, Ill.)



22. The S. Blickman, Inc. tray assembly is planned for rapid loading of patients' trays from nearby refrigerators and serving tables. (Weehawken, N. J.)



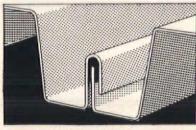
23. Hussman Refrigeration, Inc. produces a refrigerated packaging table on which food is carried over gravity conveyors under constant refrigeration. (2401 N. Leffingwell, St. Louis 6, Mo.)

(Continued on page 217)

Quickly erected Q-Deck helps lower roof fire hazard



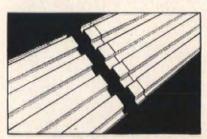
The many unique features of Robertson Q-Deck make it of special interest to the architect and engineer who is concerned about the fire hazard aspect of his flat roof design. To begin with, Robertson Q-Deck is designed with tight side and end laps to eliminate the need for an inflammable vapor seal. Its two-foot width and long span characteristics mean fewer joints, and its zinc-coated surface (or basic Galbestos) eliminates the need for field painting.



Robertson Q-Deck side laps are designed to form a standing seam. A seal in the form of a continuous caulking material assures a vapor-tight joint.



A special Robertson clamping tool mechanically fastens the side laps together, forming a steel fire barrier that remains intact as long as the structural supports are in place.



Ends of Robertson Q-Deck are sized and countersunk to produce a tight, smooth, two-inch lap joint. This lap, along with the tight side laps, provides a vaporsealed roof construction.



Excessive amounts of asphalt are eliminated on Robertson Q-Deck because the adhesive is applied to the *insulation*... not to the steel deck. This also results in a better bond between the steel and the insulation.

Robertson Q-DECK

a product of H. H. Robertson Company



2404 Farmers Bank Building • Pittsburgh 22, Pennsylvania
In England—Robertson Thain Limited, Ellesmere Port, Cheshire

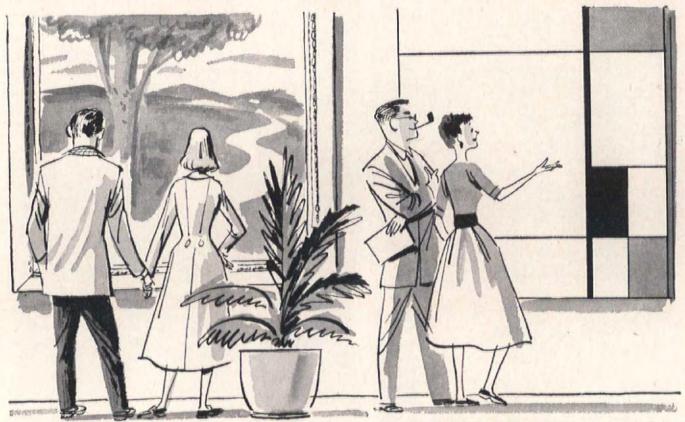
In Canada—Robertson-Irwin Limited, Hamilton, Ontario

World-Wide Building Service



They like children. But they'll still be bound to appreciate the quiet and privacy that Carrier air conditioning brings with it. Their windows will be closed to neighborhood noises. And their children can romp about the playroom in perfect comfort, with the door shut.

New ideas interest this family. They recognize the advantages of the Weathermaker Home idea. They know that air conditioning allows you to develop a floor plan that's compact, to group windows, to eliminate them on some walls, to arrange the whole house for convenience.



These are nature lovers. They admire trees and sunsets in paintings. Give them big windows. Let them look at nature to their hearts' content. And include the Carrier Weathermaker so they can do their looking comfortably—whether the weather is scorching hot or biting cold.

No gee-gaws for this couple. They demand logic and simplicity. If it isn't functional . . . out with it. They'll be fond of the Weathermaker Home idea of designing the house around the air conditioning. It lets them eliminate wings, screens, breezeways, porches and attic fans.



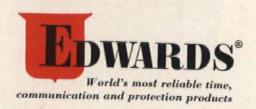
Well! Comfort is everybody's favorite! And this Carrier Weathermaker really delivers comfort. It heats and cools, keeps you comfortable in every season. Just 3 feet square and 5 feet high, it fits in basement, closet or utility room. It burns gas or oil, cools with electricity.





appearance. In overall measurement, it's the smallest coded station available today! Single-action operation is simple, dependable, foolproof. One pull of the handle places the call-never the chance of a non-alarm!

Why not equip your buildings with the alarm station styled and developed in consultation with fire protection authorities, architects and electrical engineers...for use in any popular fire alarm system and for municipal connections ... the Edwards Fire Alarm Station! Write for free illustrated bulletin. Dept. AR-6, Edwards Co., Inc., Norwalk, Conn. In Canada: Edwards of Canada, Ltd., Owen Sound, Ont.



New Streamlined Non-Code Station Now Available



Listed by Underwriters' Laboratories

In line with its policy of providing the most modern signaling equipment for every purpose and condition, Edwards announces its new streamlined non-code fire alarm station No. 271.

Like the now famous coded station shown on the opposite page, this non-code station has the exclusive Edwards single-action mechanism that eliminates any possibility of non-alarm due to haste or panic. Just one motion actuates the alarm. No key to turn, no door to open before pulling handle. Also available in break-glass Model No. 270. Has tamper-resistant break-glass feature... the glass breaks when the lever is pulled.

Testing and resetting after alarm is easily accomplished with dropfront type of construction.

Station is die-cast in rugged zinc and finished in Fire Alarm Red. Small size and wall-hugging shape makes it suitable for any location. Only 31/8" wide, 45/8" high. Projects only 1" from wall.

Installation is a simple matter. Station mounts on standard square box with plaster cover. For surface mount, special Edwards conduit box No. PP. 27193 is available. Box is cast aluminum finished in red to match the station.

For complete information on Edwards Fire Alarm Systems write for Bulletin FA—or see Sweets Architectural File. Edwards Co., Inc., Norwalk, Conn. In Canada: Edwards of Canada, Ltd., Owen Sound, Ont.



protects .. everywhere!

A PRODUCTS

(Continued from page 213)

"PUSHBUTTON" OPERATION PAYS
OFF IN LABOR SAVINGS

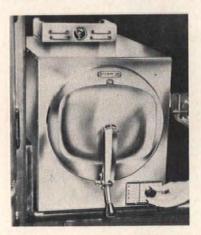
Automatic operation shows positive savings in labor and costs, reduces waste and obviates time-consuming training of personnel



24. The Hill-Shaw Co.'s "Vaculator" automatic coffee brewer makes a decanter of coffee every 3 min. with the push of a button. (311 N. Desplaines St., Chicago 6, III.)



25. The Silex Co. automatic coffeemaker (left) is a space-saving unit said to deliver 12 cups in a 4-min. cycle. (80 Pliny, Hartford 2, Conn.) 26. The Steel Products Co. automatic "E-Z Way Coffeemaker" (right), equipped with two pushbuttons, dispenses coffee from one spigot and hot water from the other. (Cedar Rapids, lowa.)



27. The Market Forge Co.'s automatic offering is a self-contained pressure cooker with automatic timer. (Everett 49, Mass.)

(Continued on page 220)

4 EXCLUSIVE ADVANTAGES

WAL-LOK

Masonry Wall Reinforcing Mesh

DEFORMED — Gripping qualities are increased 4.6 times over plain wire. In pull-out tests, the 3/6" dia., 100,000 psi. tensile strength longitudinal bars break, under extreme stress, rather than pull out.

KNURLED—150 indentations per foot .002" in depth grip the mortar like thousands of tiny claws. Improves bonding stress 3.2 times over plain wire.

CROSS BARS PROJECT
Welded across Stretcher Rods,
Cross Bars project for maximum anchorage in mortar.
Cross Bars are welded over
Stretcher Rods without annealing Stretcher Rods or impairing
tensile strength. THICKNESS
AT THE WELD ONLY 7/32"



CORROSION RESISTANT

Cross Bars are galvanized for lifelong durability but only that section which is exposed.

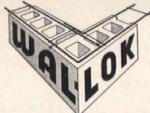
POSITIVE PROOF

Tests conducted by the Research Foundation of the University of Toledo offer positive proof of these statements. To our knowledge, Wal-Lok is the only masonry Wall reinforcing based on scientific research.

WAL-LOK COMPLIES

Wal-Lok reinforcing now complies with the recommendations of the National Bureau of Standard Bulletin 3079, Requirements for Concrete Masonry Construction (Rev. of NBS Report 2462).

WRITE TODAY for your copy of the Adrian Peerless 4-page folder on Wal-Lok. It contains the data from the Research Foundation tests, specifications, additional advantages and further information about Wal-Lok masonry wall reinforcing mesh.

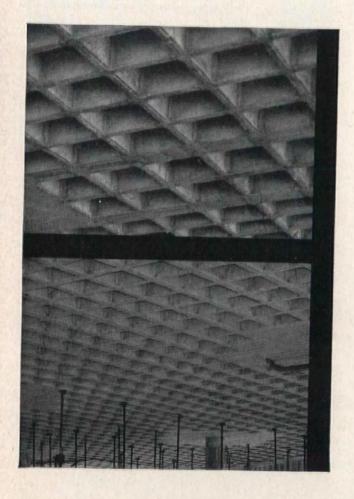


ADRIAN PEERLESS, INC. 1480 E. Mich. St., Adrian, Mich. Case history
of CECO on-the-job
performance

Architect: Victor Gruen Associated Architects & Engineers, Inc. General Contractor: Bryant & Detwiler Company



waffle construction Dus Ceco-Meyer Steelforms



How Ceco methods saved materials

■ When architect Victor Gruen developed the original concept of Northland Center, world's largest shopping district in suburban Detroit, he had an eye for beauty and function. Beauty that would make the center a pleasant and even inspiring place to shop. Function that would make shopping as convenient and effortless as possible.

J. L. Hudson Company's branch department store is the core of the development—and here one of the major requirements was providing the greatest amount of usable space by keeping interior columns few in number and small in size. Typical spans were 29'-1" each way, and a waffle design using 14" deep Ceco-Meyer Steelforms provided a ceiling clear of beams, and kept steel, concrete and dead weight to the minimum. The saving in steel alone was 16% when compared with solid flat slab construction.

In other areas of the Hudson store and in the tenant and the service group buildings, one-way Ceço-Meyer Steelform floor



"lazy" concrete 16% steel savings-

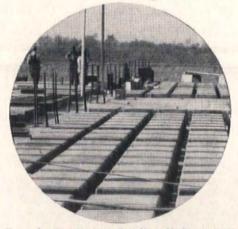
construction accounted for similar steel savings, eliminated "lazy, non-working" concrete, and kept dead load low.

Overall result in all buildings: wide areas of uninterrupted space—clear ceilings—a pleasing effect—highly functional. Ceco Engineering Service detailed placing plans for Ceco-Meyer Steelforms and reinforcing bars. This was a big project—5,000 tons of Ceco reinforcing steel delivered by truck to the job site—1,000,000 square feet of steelforms placed and removed by Ceco—a job requiring the service of a company skilled in its field and geared to deliver as the need dictated.

Here is another example of Ceco performing on the architectowner-contractor-supplier team. On your next project call Ceco Product Specialists. They will help you save through product engineering. Consult Sweet's File for address.

In construction products
exec encinements
j makes the big difference

Offices, warehouses and fabricating plants in principal cities • General Offices: 5601 W. 26th Street, Chicago 50, Illinois



Two-way waffle design using Ceco-Meyer Steelforms permits longer spans, resulting in larger uninterrupted floor areas.



One-way Ceco-Meyer Steelforms also save steel and concrete, thus reducing dead load.

PRODUCTS

(Continued from page 217)

Automatic operation extends to the timeconsuming area of preliminary food preparation also. Gone are the days of employee time wasted over potatoes or vegetables

28. The Qualheim, Inc. electro-cut vegetable slicer and cutter slices, slaws, rough- and finechops, and cuts French fries and juliennes. (1228 Racine St., Racine, Wis.)





PLASTIC LAM

Whatever the job - residential, commercial, or industrial - you (and your clients) will be better satisfied if you specify FARLITE when you plan new construction or remodel present facilities. It's the very best in plastic laminates for partitions and paneling . . . for counter, table, desk, bar, and soda fountain tops...for decorative interior treatments...for a host of other uses. Its glass-smooth, non-porous surface is sanitary, easy to clean, permanently beautiful . . . resists heat and burning cigarettes . . . is not affected by alcohol, grease, fruit acids, mild cleaning solutions . . . will not chip or fade.



SUPERIOR CONSTRUCTION .. FULL RANGE OF COLORS AND DESIGNS

Farlite's superior 5-ply construction means extra smoothness and warp resistance. Over 50 new standard colors and patterns give you full decorative range... edges can be supplied with metal trim or natural wood finish. Also available in standard sbeet stock or can be made up to your specifications.

Write for descriptive folder and name of nearest distributor.

PLASTICS DIVISION FARLEY & LOETSCHER MFG. CO., DUBUQUE, IOWA





29. John E. Smith's Sons Co.'s "Buffalo" food chopper (left) chops raw or cooked meats, vegetables, fruits or nuts to any degree of fineness in a few minutes and then empties the batch. The machine can be cleaned by removing the top plate. (50 Broadway, Buffalo 3, N. Y.) 30. Colt's Manufacturing Co.'s "Autosan" vegetable peeler (right) is designed to force vegetables to roll. Waste-free, fast peeling is assured by manufacturer. Flexible hose flushes every part of machine. (Hartford 15, Conn.)



31. The Veg-A-Peel Co., Inc. potato peeler cuts all shapes and sizes of potatoes simultaneously. An automatic timer can be set to turn the machine off at any time. (213-219 N. Walnut St., Creston, Iowa.)



32. The Hollymatic Corp. patty-molding machine makes round, square or chop-shape patties in any thickness. Said to produce 2100 patties an hour, the molder is completely automatic, eliminating time-consuming manual paper feeding. (433 W. 83 St., Chicago, III.)

(Continued on page 224)

REMOTE ROOM AIR

ROOM AIR CONDITIONERS

for existing buildings or new construction



for use with chilled water or freon systems

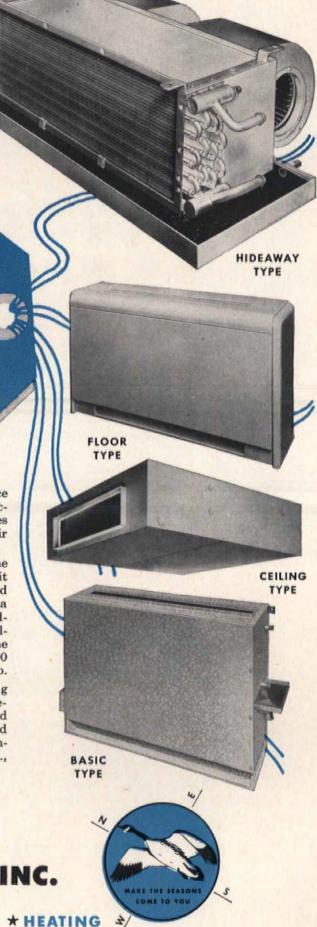
For hotels, tourist courts, apartment houses, office buildings, hospitals or residences—new or old construction, the famous family of McQuay Seasonmakers gives you widest flexibility in planning individual room air conditioning.

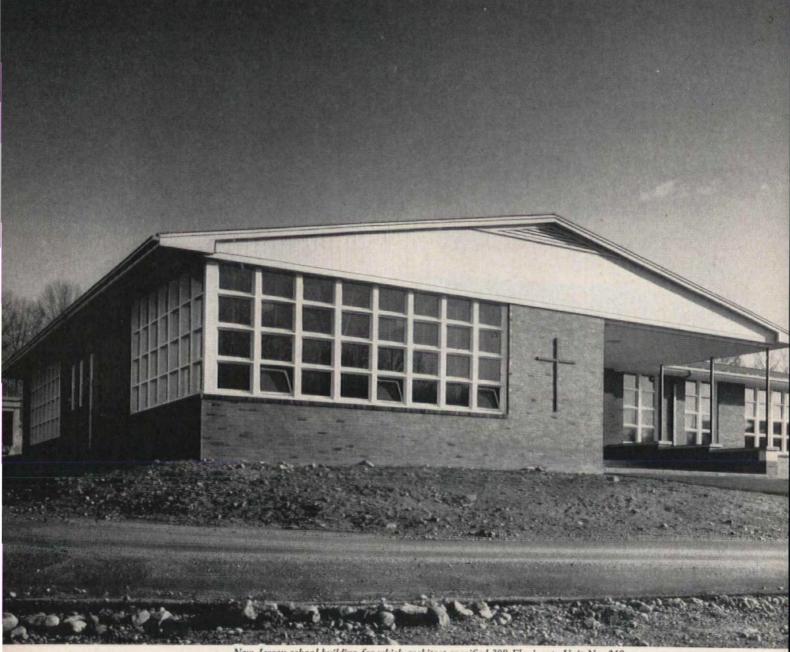
The popular HIDEAWAY, newest member of the Seasonmaker family, meets the requirement for a unit especially designed for concealed mounting, in furred ceilings, closets, vestibules and wherever space is at a premium. Available also in Floor type, for free standing mounting; Basic type, for fully recessed wall installations; and Ceiling type, for suspended mounting. The four types in three different sizes, 200, 400 and 600 CFM, simplify selection of the right unit for the job.

Exclusive Ripple-Fin coil construction assures long life and dependable service. All Seasonmakers are designed for quiet operation and for easy installation and maintenance. Get complete details on features and specifications in Bulletin 703. Representatives in principal cities or write McQuay Inc., 1605 Broadway N.E., Minneapolis 13, Minnesota.

M. Quay INC.

* AIR CONDITIONING * REFRIGERATION * HEATING





New Jersey school building for which architect specified 388 Flexivents Unit No. 218.

Versatile Andersen prove ideal for school

Combination of bright, airy classrooms contained in a building of pleasing design has been achieved through effective use of Flexivents in Holy Rosary School at Erskine Lakes, New Jersey. Flexivents were specified by Architect, Brother Cajetan J. B. Baumann, O.F.M., A.I.A. Builder David Stokem finds Flexivent's "price is right, installation is simple and there are no window failures." In Holy Rosary School the architect has used

large, 32-sash groupings of Flexivents with bottom and third row vented hopper style, alternate rows fixed glazing. Dimensions of the Flexivent No. 218 used here adapt perfectly to the architectural style of the building. Utilization of both operating and fixed sash provide for the fresh air and sunshine so desirable in school rooms. WINDOWALLS sold by established millwork dealers throughout the United States including the West Coast.

FLEXIBLE IS THE WORD FOR

Awning position

opper position

Casement position

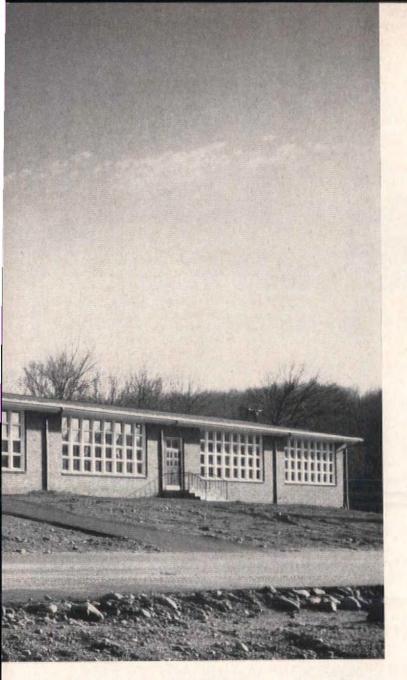


New optional Roto Lock Underscreen Operator...



Optional Andersen Double Insulating Glass...





FLEX/VENT units construction

Andersen Windowalls

Andersen Corporation

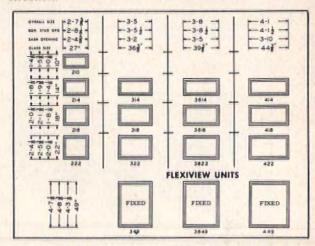
TRADEMARK OF ANDERSEN CORPORATION

BAYPORT, MINNESOTA

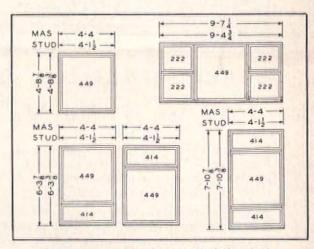
New FLEXIVIEW picture units... new 3'8" width make FLEXIVENT more versatile than ever!

Even greater design possibilities now stem from the versatile Flexivent. New Flexiview Units, picture window partners to the Flexivent, can be combined with either fixed or operating Flexivent Units to form WINDOWALLS of remarkably low over-all cost per square foot.

Addition of the new 3'8" width to the Flexivent line, including the Flexiview Picture Units, makes the Flexivent perfectly adaptable to 4' modular panel systems of construction.



New table of sizes shows complete new Flexivent line. Flexiview Picture Units are glazed either DS with quality window glass or with Andersen Double Insulating Glass.



Suggested combinations particularly adaptable to schools, indicate the wide range of picture window possibilities available with addition of new Flexiview Picture Units to the Flexivent line.

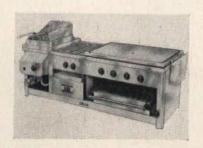
	Andersen Corporation AR-Gayport, Minnesota
	Please send me detail information on Andersen Flexive Windows including new Flexiview Picture Units.
	Please check
	Name
1	Firm
	Address
	CityZoneState

(Continued from page 220)

COMPACTNESS FEATURED IN "SHORT-ORDER" COOKERY

In soda fountains, cafeterias and luncheonettes, quick-service equipment is needed to provide the "quick bite," Compact, rugged construction and maximum accessibility are stressed in this "short-order" equipment

33. The Cecilware-Commodore Products
Corp. "Fourway Broiler" combines in a single unit
a fryer, a grill, an infra-red broiler and a cooker
with time controls. (206 Canal St., New York 13)





MILLS RESTAURANT . COLUMBUS, OHIO

ARCHITECTS . BENHAM RICHARDS AND ARMSTRONG

eager appetites satisfied 42 years by Van customer

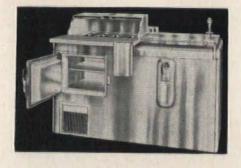
- When The Greenfield-Mills Restaurant Co. decided to rebuild their restaurant at 77 South High, Columbus, it was natural that Van, who had installed their other restaurants at Columbus, Detroit, Cleveland and Cincinnati, should furnish all the equipment.
- Evolved after careful study of self-service restaurants all over the country, limited only by the lot size, every idea for lower food costs, less food waste, greatest customer appetite satisfaction was incorporated.
- In the uniquely arranged single fast-serving salad counter and two hot food counters as in the heart of the restaurant . . . the kitchen . . . Van's gleaming stainless equipment serves as it has in this chain for a quarter of a century.
- Whatever your food service equipment problem, use Van's century of experience.



Branches in Principal Cities

429 CULVERT STREET

CINCINNATI 2, OHIO



34. Howard Refrigerator Co., Inc.'s "Bain-Marie Elite" includes in a 60-in. length, eight stainless steel salad pans in a refrigerated compartment, a 4-cu ft refrigerator, stainless steel waste container, wood carving board, double electric receptacle, beverage cooler, water faucet, bottle opener. (4745 Worth St., Philadelphia 24, Pa.)



35. Dunhill Soda Fountain Corp.'s combination 48-in. bain-marie contains 10 salad pans, stainless steel refuse hood and drawer, maple cutting board and electric outlet over refrigerated storage. (79–85 Walworth St., Brooklyn, N. Y.)





36. The Hotpoint Inc. "Quintette" (left) is a 30-in. cooking center — with oven, broiler, surface cooker, fry kettle and griddle. (227 So. Seeley Ave., Chicago 12, III.) 37. The J. C. Pitman & Sons, Inc. "Friolator" (right) is a small counter model deep fat fryer which can be used with manufactured, mixed natural or liquefied petroleum gas. (Concord, N. H.)

(Continued on page 228)

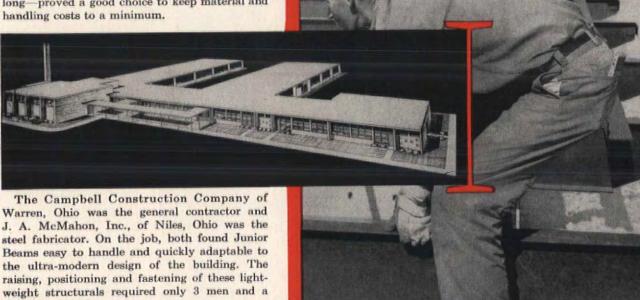


Junior Beams

fit modern design and building budget of Bascom Elementary School

Today's new school must be functional, permanent, safe and economical to build.

To realize these features in the Bascom Elementary School, Leavittsburg, Ohio, Architect Arthur F. Sidells specified J&L Junior Beams for purlins throughout the entire roof area. These 12 in. Junior Beams—11.8 lbs. per ft., 29 ft. long—proved a good choice to keep material and handling costs to a minimum.



portable gin pole.

At the eaves, the pre-fabricated Junior Beams were fastened atop the masonry walls and lintel beams and cantilevered four feet beyond the outside walls to support an attractive overhang as well as the main roof. Thus Junior Beams solved a difficult problem in modern design.

There are many other ways versatile J&L Junior Beams can help solve your design problems and facilitate construction. They're easy to install, rigid, vibration resistant, shrink proof, and have the lowest deflection factor of any structural section of equivalent weight.

Find out! Write today for our new booklet "J&L Junior Beams." It shows how Junior Beams are used as floor joists and roof purlins with loading and spacing tables for various spans.



Jones & Laughlin Steel Corporation Dept. 466, 3 Gateway Center, Pittsburgh 30, Pa.

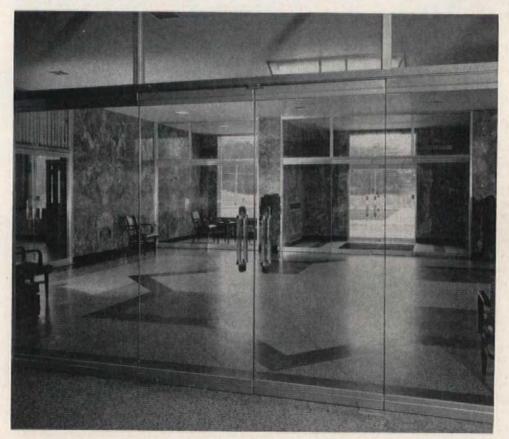
Please send me a copy of the booklet entitled "J&L Junior Beams."

Name Company

Address

Utica Mutual Insurance Company's in New Hartford, N. Y.,







HERCULITE DOORS, surrounded by large panes of Herculite Tempered Plate Glass, and the clear Plate Glass windows beyond, give this reception room a cheerful, open atmosphere.

new headquarters building features PITTSBURGH GLASS





THIS NEW, MODERN building of the Utica Mutual Insurance Company is glazed with approximately 400 large Pittsburgh Polished Plate Glass Twindow units—"the windows with built-in insulation"—for maximum efficiency, good employee morale and adequate lighting. The high insulating value of Twindow reduces the load on the air conditioning and heating system. Among the other Pittsburgh products utilized in this building are Polished Plate Glass interior partitions and doors, Pittsburgh Doorways, Mirrors, Pittco De Luxe Metal, Gunmetal Carrara Structural Glass for the reception desk, Architects and Engineers: Childs & Smith, Chicago, Illinois.

THIS PARTIAL VIEW of the private dining room shows the use of Twindow units. Here, as in the other areas of the building, Twindow is set in Pittco Metal. Summer or winter, employees can eat, relax and enjoy the outside view, because of the exceptional insulating properties of Pittsburgh's Twindow.

Design it better with Pittsburgh Glass



Your Sweet's Catalog File contains detailed information on all Pittsburgh Plate Glass Company products . . . Sections 7a, 13e, 15b, 16b, 21.

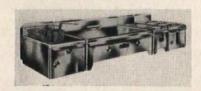
PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

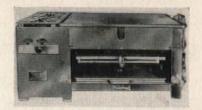
IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

A 1 PRODUCTS

(Continued from page 224)



38. The Anetsberger Bros. Inc. complete matched counter unit includes a fryer, grill, hot plate and food warmer, all within 61% in. (166 N. Anets Dr., Northbrook, III.)



39. The Lyons-Alpha Products Co., Inc. "Welsbach Hotzone" two-burner broiler-griddle is equipped with combination food rack with grease deflector pan and grease pan, a handle that stays cool and an external adjustable device for raising and lowering food rack. (469 Broome St., New York 13, N. Y.)



40. The Baker's Pride Oven Co., Inc. 2-ft counter pizza oven turns out four 16-in. pies in 5 min., according to the manufacturer. (1641 East 233rd St., New York 66, N. Y.)

You get what you specify

NOW — floor, shower, roof drains and expansion joints

- Specifically labeled
- Individually packaged



Mª Donald

when you specify M©Donald

When you want a certain size and type drain or expansion joint, there's one sure way to get it. SPECIFY McDONALD. McDonald pre-assembles, packages and labels them at the factory. They go through the wholesaler to the plumber and on the job factory fresh. Each assembly is packaged and clearly labeled so there can be no mistake. So be sure you specify McDonald drains on your next job. And make sure you get exactly what you asked for.

A. Y. MSDONALD MFG. CO.

DUBUQUE, IOWA

Plumbing Drainage Products Division



41. The Glascock Bros. Mfg. Co.'s 27-in. sandwich bar, with eight salad pans under a roll-down lid, a maple work top and detachable crumb box, covers refrigerated storage area. (Muncie, Ind.)

LIQUID DISPENSERS MODERNIZED

No longer is it necessary to open a bottle or mix ingredients for every beverage order. A flick of the wrist and a ready-made milkshake or soft drink is in the glass





42. The Norris Dispensers Inc. "Deluxe" milk dispenser (left) eliminates the need for individual bottles of milk—saves labor, time and storage space. (Minneapolis, Minn.) 43. The Bastian-Blessing Co.'s line (right) includes a "Coldpoint Cooler Draft Station" with four draft heads—usually two for ready mixes and one each for soda and water. (4201 W. Peterson Ave., Chicago 30, III.)

(Continued on page 232)







Powers No. 11 Self-Operating Regulator widely used for water storage heaters, heat exchangers, fuel oil preheaters and many industrial processes.

WATER Temperature CONTROL?

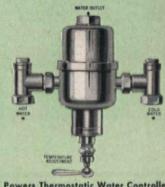


POWERS FLOWRITE V-Port-Characterized Diaphragm Control Valve.

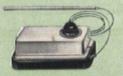
Powers Series 100 Recording Controller. Compressed Air Operated.







Powers Thermostatic Water Controller for regulating temperature of mulitple type showers, hydro-therapy and in-dustrial processes. Capacities 22 to 125 gpm. @ 45 psi.



Powers Remote Bulb Type D Thermostat for Unit Air Conditioners.



POWERS PACKLESS VALVES



For controlling chilled, or heated water in unit air conditioners. No leakage No packing maintenance



Powers MASTROL Control for regulating forced hot water heating systems.

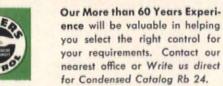
Call POWERS

Most Complete Line of Controls Made Only a few are shown here

for All Types of Baths, Water Heaters and Heat Exchangers

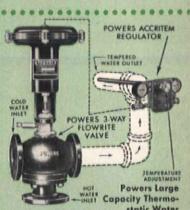
- Forced Hot Water Heating Systems
- Radiant Panel Heating Systems
- Air Conditioning Units using Chilled and Heated Water
- · Cooling Water for Air Compressors, Diesel, Gas Engines, and Cyclotrons
- Many Industrial Processes: Photo Developing, X-Ray, Color and Ordinary Film, Lens Polishing and Grinding, Chocolate Enrobers, Plastic

Molding Presses, etc.



THE POWERS REGULATOR CO.

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static Water Mixing Valve Controlled by an ACCRITEM Temperature Regulator. Capacities 20 to 1200 gpm. @ 45 psi.



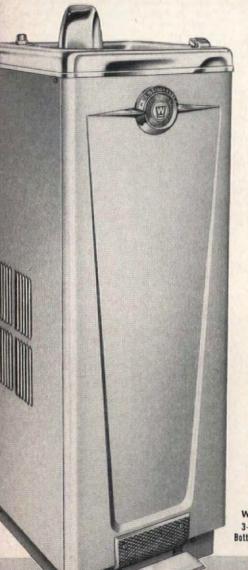




owers Room Type Pneumatic Controls Radiant Heating-Cooling Panels, Convectors and Unit Ventilators. Valves are packless. No more packing mainten-ance. No leakage.



The Beacon Publishing Company's new plant in Wichita, Kansas.



From the roaring presses beneath this roof the latest news is hurried to the citizens of Wichita by The Beacon Publishing Company. The graceful structure offers the utmost in contemporary planning. Its design is distinctive; its appearance clean and efficient.

The architects have chosen Westinghouse Water Coolers to contribute to the health and morale of employes of the Wichita Beacon because Westinghouse gives you more cold water per dollar of investment. This is due to the increased cooling capacity and lower operating costs that the 1954 Westinghouse Water Cooler line provides.

Model WS5B... with a 5-gallon per hour capacity this unit is ideal for small commercial or industrial establishments. Has static air-cooled condenser which eliminates fan motor and fan noise.

WSB3B 3-Gallon, Bottle Cooler



WS5B 5-Gallon, Static Air Cooled



WSBB 8-Gallon, Static Air Cooled



WA13B 13-Gallon, Air Cooled



WA17B 17-Gallon, Air Cooled



WW14B 14-Gallon, Water Cooled The Westinghouse Pay-Way Plan is a simple formula based on time and motion studies which proves that proper placement of water coolers in relation to work areas can save many payroll dollars every year.

right now little thought is given to the many dollars being expended on unnecessary employe steps caused by improperly placed water coolers. Much time is wasted, therefore efficiency is correspondingly decreased.

waste and its causes. Let us demonstrate to you how utilization of this Pay-Way Plan can prevent this waste.

the number of water coolers you now plan sufficient? Are they efficiently located? By using the Pay-Way Computer and Application Chart we can help you make specific recommendations on your client's water cooler requirements.

Pay - Way has been used by many industries of all sizes and types with great success. They would be the first to tell you that it is worth your time to drop us a card for more information on this absolutely free Westinghouse Pay-Way Plan.

FREE PAY-WAY COMPUTER

Send for this handy computer to help you select the proper number, type and location of water coolers which you now plan. Write today!



YOU CAN BE SURE ... IF IT'S Westinghouse

WESTINGHOUSE ELECTRIC CORPORATION
Electric Appliance Division • Springfield 2, Mass.





WSE8B 8-Gallon, Static Air Cooled Explosion-Proof



WWE14B 14-Gallon, Water Cooled Explosion-Proof



WAC2 Compartment Pressure Cooler



WAP7A 7-Gallon, Remote Cooler



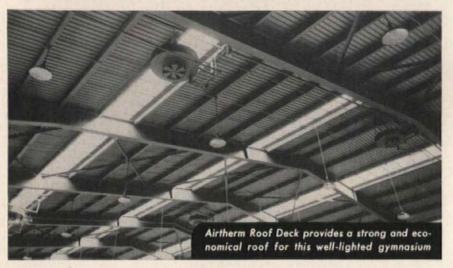
WWP13 13-Gallon, Remote Cooler



WBC1 Compartment Bottle Cooler



WIDER Airtherm ROOF DECK



designed for a wide range of applications

Airtherm Steel Deck Sheets are furnished in 30" widths (the widest in the industry) with five ribs spaced on 6" centers. These ribs, 15/8" deep, have a bearing surface of 5/8" and a top opening of only 3/4" wide. These wider, self-aligning sheets mean fewer longitudinal laps with resultant savings in construction time and costs.



In this church the attractive appearance of painted Airtherm Roof Deck adds functional beauty to the clean design

Airtherm Decking provides a strong, safe and durable steel roof in flat, pitched or arched construction. It has been proved in installations as side walls, partitions, canopies, and as a sub-base for concrete or aggregate flooring. This versatility, plus its attractive appearance, has led to many unique applications in a wide range of structures.

18-GAUGE AIRTHERM ROOF DECK	PROPERTIES
Section Modulus (in.) 3	.220
Moment of Inertia (in.) 4	.263
Resisting Moment (in Ibs.)	3960

To care for all contingencies relative to geographical areas and various purlin spacing, Airtherm Decking is also manufactured in No. 22 Gauge and No. 20 Gauge metal thicknesses.





For more complete information consult our catalog in Sweet's 2dAi, or write . . .

747 South Spring Avenue St. Louis 10, Missouri

Member: Metal Roof Deck Technical Institute

PRODUCTS

(Continued from page 228)

EQUIPMENT DISPENSERS, MOBILE RACKS SAVE STEPS

An important and effective development in the food service field has been the design of equipment on wheels and mechanized dispensing units. Portable equipment of all types saves restaurants and institutions miles of unnecessary travel in kitchens and dining rooms, reduces labor and breakage costs



44. The W. H. Frick Inc. "Dispensator" is loaded in dishwashing section and wheeled to dining area or to serving counter. Dishes, glasses, bowls, etc., can be stacked at comfortable working height. (1808 Union Commerce Bldg., Cleveland 14, Ohio.)



45. McClintock Mfg. Co.'s "Pan-L-Karts," equipped with foot brakes, rubber bumpers and tie bars for positive rigidity, hold pans for storage of meat and food products for space-saving and low-cost handling. (2700 So. Eastern Ave., Los Angeles 22, Calif.)





46. The American Machine & Foundry Co. manufactures easily installed "Lowerator" dispensers. Calibrated spring action raises racks of dishes, cups, glasses, etc., automatically to counter level. Bread or sandwich "Lowerator" has a slideout crumb tray for easy cleaning. (485 Fifth Ave., New York 17, N. Y.)

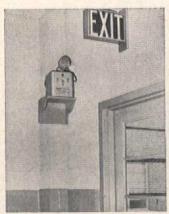
(Continued on page 234)

POSITIVE PROTECTION FOR PERSONNEL AND PROPERTY

... with new Exide Lightguard emergency lighting units!



CAFETERIAS



FIRETOWERS AND CORRIDORS



DANGEROUS OPERATIONS



LABORATORIES



TELEPHONE SWITCH BOARDS



DISPENSARIES



CONTINUOUS OPERATIONS



CONTROL PANELS

ALL OF THESE SPOTS need emergency lighting protection for workers and property in the industrial plants you plan to design or modernize. There are many more . . . in fact, large plants have required as high as 200 units to supply adequate protection against an interruption to the normal electrical supply brought about by storms, floods, accidents, fires or other causes beyond the control of the utility



THE NEW MODEL M has a two-rate charger—high rate or trickle. After the emergency, automatic controls recharge the Exide battery specially developed for dependable operation, long life, less maintenance. UL-approved. Plugs into any 115 volt outlet. Single and double lamp units are available; each lamp illuminates up to 10,000 sq. ft.

companies. When lights go out, Exide Lightguards go on, instantly, automatically! They guard against injuries; they minimize property damage, pilferage, and enable control of vital processes to be maintained. For maximum emergency lighting protection, for long range economy of operation with a minimum of maintenance, specify genuine Exide Lightguard protection.

WRITE for full details and specifications about new Model M Exide Lightguard units . . . the best automatic emergency lighting unit on the market. Write Dept. AR, Exide Industrial Division, The Electric Storage Battery Co., Phila. 2, Pa.

Your best buy for...
EMERGENCY LIGHTING



Exide INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa. . Exide Batteries of Canada, Limited, Toronto



This bank is indebted to

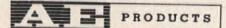
Terrazzo

... for a good-looking, long-wearing, serviceable floor. This bank is also indebted to its architect for specifying Terrazzo, the versatile floor (or wall, wainscot or stairs) with these advantages:

- 1. **ECONOMY** Moderate initial cost is followed by freedom from repairs, replacements, and excessive upkeep over a period of years. This is usually far less than the long-range cost of other types of floors, for which repairs, replacements, and upkeep substantially add to cost.
- 2. COMFORT Finished Terrazzo is easy to walk on, less slippery than any waxed surface.
- 3. CLEANLINESS Terrazzo can be sealed so as to be practically non-absorbent. Its smooth, unbroken surface cleans easily, harbors no accumulation of germs, paves the way to aseptic cleanliness.
- 4. COLOR AND DESIGN Terrazzo has warmth and beauty. Specify any design, pictorial or geometric, in virtually any combination of colors.
- 5. DEPENDABLE INSTALLATION This Association's objective is to see that Terrazzo installations turn out exactly as wanted. Write us today for complete information on the above points, or see our catalog in Sweet's.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION, INC.

711 14th St., N.W.	Washington 5, D. C.
Kit about Terrazzo	to
Zone	State
	Kit about Terrazzo



(Continued from page 232)

"DRY" HEAT KEEPS FOOD WARM

To meet the demands of rush hours and heavy order loads, more emphasis is being placed on mass food output and efficient warming. "Dry" heat keeps food palatable and eliminates need for time-consuming scrubbing of steam tables



47. In The Star Mfg. Co.'s matched counter line, electric food warmers help prevent food from thickening, discoloring or drying out. (6300 St. Louis Ave., St. Louis 20, Mo.)



48. The Merco Ray Corp. utilizes infra-red heat in its food warmer, offered in stainless steel or aluminum. Added uses include plate warming and silver drying. (726 Charles St., Seattle 4, Wash.)



49. The Mealpack Corp. turntable dish heater can warm Pyrex dishes for meal packing at the rate of up to 480 per hour. Of particular value in hospitals, heaters are available in two types for gas operation. (2014 Ridge Ave., Evanston, III.)

(Continued on page 238)



Westinghouse Micarta® made this fine office design outstanding!

Here is an excellent illustration of the message we've been sending to architects and designers on the subject of Westinghouse MICARTA. This subdued and quietly efficient office in Pittsburgh's new Gateway Center Building features MICARTA for both tasteful decoration and practical work surfaces. The smart appearance of MICARTA will survive years of the heaviest work sessions.

This versatile decorative plastic has already proved itself in hundreds and hundreds of prominent installations like the UN Building, Waldorf Astoria, Pittsburgh's Carlton House, and the Hotel New Yorker. There is a whole range of colors, patterns and wood grains for the creation of attractive, lasting interiors. Furniture with MICARTA tops is available from the most prominent designers and manufacturers in America.

Just fill out the coupon below for the complete MICARTA story.

and U.S.-MENGEL PLYWOODS - INC.

Westinghouse Carta distributed by 1 UNITED STATES PLYWOOD CORPORATION

UNITED STATES PLYWOOD CORPORATION 55 West 44th Street, New York 36, N. Y.

Please send color guidebook and full application information on MICARTA. (1118)

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ADDRESS	

CITY____ZONE_STATE_

AR-6-5

ALFOL TYPE II

BUILDING BLANKET INSULATION

Big 3-reflective-air-space Efficiency

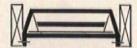
Plus a positive, continuous Vapor Barrier —All in one product, a single operation!

and-kraft backing provides continuous moisture protection sheets provide 3

reflective air spaces

NOW! USE THE COMPLETE ALFOL LINE

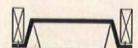
TO "PINPOINT" YOUR SPECIFICATIONS



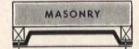
ALFOL Type IV-Four reflective air spaces for the utmost in thermal and vapor barrier efficiency.



ALFOL Type III-Three reflective air spaces-ideal for crawl space work, "exposed" ceilings.



ALFOL Type I-Two reflective air spaces-Low cost efficiency, ideal for mild climate use.



ALFOL Type IA-Two reflective air spaces-specially designed for masonry construction.

Here's B-I-G insulation value in a clean, compact "package"-ALFOL Type II. Just 2 aluminum foil sheets and a heavy kraft-and-duplex backing. Yet on down-flow heat, for example, its thermal value surpasses that of even full-thick bulk materials! (Authority: U. S. Bureau of Standards.)

And that heavy vaporproof backing, by which ALFOL is applied across stud or joist faces, provides a positive, continuous vapor barrier . . . the finest condensation "insurance" obtainable.

Application is rapid, positive: the aluminum foil sheets space themselves automatically. And ALFOL usually costs less! No wonder it's becoming America's "mostspecified" insulation-for commercial, industrial and residential use.

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BUILDING BLANKET INSULATION

"FIRST IN REFLECTIVE INSULATION"

REFLECTAL

A Subsidiary of 155 EAST 44th ST.



CORPORATION

Borg-Warner NEW YORK 17, N.Y.



IRON FIREMAN Selectemp CENTRAL HEATING

Continuous Modulated Heat with Individual Room Control, for Gas, Oil, or Coal

FOR OFFICE BUILDINGS

The temperature of every office can be regulated to suit individual needs. Temperature stays at thermostat setting regardless of varied heat loss from glass areas, or from cold and warm sides of the building.



FOR APARTMENTS, HOTELS AND MOTELS

Occupants of each room can have the temperature they select without affecting the heat delivered to other rooms. The steam heat is continuous. Room units circulate warmed air, modulated automatically to balance heat loss from each room and maintain the individual temperature selected. No gas or combustion in rooms—no venting required.



FOR HOSPITALS, SCHOOLS, INSTITUTIONS

The varying needs of patients rooms, of service and operating rooms, of offices and public lounges, are met with extreme precision and with almost immediate response to any desired change of temperature. Filtered outside air for ventilation can be introduced when desired. Positive circulation of air within each room but no circulation between rooms.



FOR EVERY SIZE AND TYPE OF HOME

Any temperature desired is available in any room, at any time. For example: bathrooms at 75°, living room at 72°, work and play rooms at 65°, and grandmother's room or baby's bath at 78°. Air is warmed by steam, quietly circulated by steam driven fans and cleaned by efficient air filters. Room units have no electrical connections.

A COMPLETELY NEW CONCEPT IN HEATING

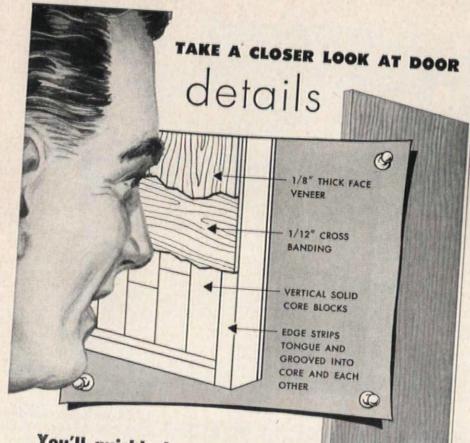
Iron Fireman SelecTemp is the only heating system that combines individual room control with continuous, modulated heat, yet initial and maintenance costs are *substantially less* than other zone control systems, with complex electrical equipment. No other system can accomplish these results in such a simple and practical way, or be so easily installed in either old or new construction. Added to this economy is the exceptionally low operating cost. Unused rooms can be kept at low temperature and then heated to a higher temperature, when desired, within a few minutes.

SelecTemp heating gives many important and unique advantages, not only to occupants but to owners and builders as well. For full information, mail the coupon.



Selectemp
PRODUCT OF IRON FIREMAN

162 W. 106th	N MANUFACTURING CO. Street, Cleveland 11, Ohio.
Please send l	iterature on Iron Fireman SelecTemp heating.
Vame	



You'll quickly learn why
HARDWOOD MASTER-FLUSH DOORS
with 1/8" veneers over solid cores-

- ✓ Give stronger, more permanent functional performance
- ✓ Resist bruises cost less to maintain and refinish
- ✓ Provide better sound insulation assure more privacy
- ✓ Permit hardware, louvre or light applications in any area.

When you want the best for institutional requirements specify Hardwood Products' MASTER-FLUSH Doorsespecially where unusually hard usage and abuse are expected. They feature Hardwood Products' solid core construction for exceptional strength and rigidity. This consists of vertical core blocks in alternate random lengths

with edge strips tongue and grooved into the core and into each other. Cross banding for stability and additional strength — plus ½" thick face veneers hot plate press bonded, makes exceptionally solid unit. A full range of wood veneers is available. Consult Sweet's 15c or write for further details.



NEW YORK BOSTON . CHICAGO CLEVELAND



HARDWOOD PRODUCTS CORPORATION . NEENAH . WISCONSIN

A PRODUCTS

(Continued from page 234)

EFFECTIVE DISPLAYS SPEED SALES

A big boost is given to the "quick-bite" eating places by well-arranged food displays. Glass-enclosed cases, refrigerated and unrefrigerated, show foods that are available and thus speed up orders



50. The Stainless Food Equipment Co. offers a refrigerated display case with refrigerated area below. Sliding glass doors and sloping backdrop mirrors supplement display. (272 New St., Newark 4, N. J.)



51. The Bloomfield Industries Inc. line of display cases can be wall-mounted or placed on a counter. Of stainless steel construction, the cases can use the backing wall as part of the case or a mirror can be installed. (4546 West 47th St., Chicago 32, III.)



52. J. J. Connolly, Inc. adds eye appeal to the frankfurter with its roller grill. A "No Waste" switch enables the operator to keep some rollers hot and others cold, without interruption of rolling. (457 W. 40th St., New York, N. Y.)

(Continued on page 242)

Whatever You Build

Build it Better with

BRAPAC Block



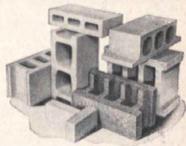
Perform Modern Masonry Miracles on Both Exteriors and Interiors

A half century of scientific progress in quality control has won universal respect for VIBRAPAC Block. The functional qualities of these Modern Masonry Units, plus their wide range of practical adaptability, have inspired the most advanced creative construction. Many years of research have paved the way for lightweight aggregate and perfected VIBRAPAC manufacturing processes. As a result, structural loads are reduced without sacrificing rugged, constructional security.

Firesafety — stormsafety — insulation against heat and cold acoustical and soundproofing qualities - low initial cost - low upkeep. All these are added advantages. Yes, you'll be proud of the modern masonry miracles you can perform with VIBRAPAC Block.



Ask for FREE copy of bulletin illustrating the complete line of standard modular building units available and giving technical guidance in their many structural uses. Contact your local VIBRA-PAC Block Plant or write direct to the Besser Manufacturing Company, Box 173, Alpena, Michigan, U.S.A.



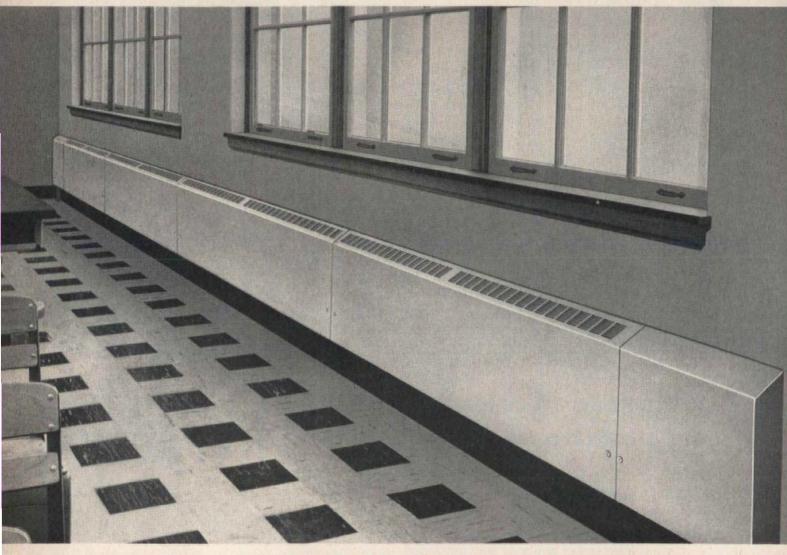
A few of the many standard modular building units engineeringly sound, architecturally beautiful, for top quality construction at low cost.



BESSER VIBRAPAC - the fully outematic concrete block machine. Produces high quality masonry units, of any desired texture and density, at the lowest possible cost. A 7737-1PB

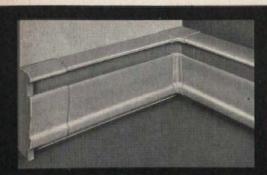
.. a Half Century of Concrete Masonry Progress!

VEW Trane Wall Line low-cost

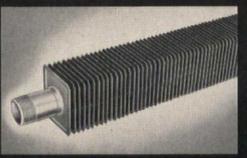


At last . . . low-cost wall-to-wall radiation with an attractive, streamlined cabinet that blends with the beauty of modern architecture . . . yet meets tight budget limitations. New Trane Wall Line Con-

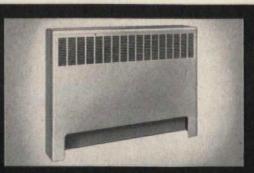
vectors are ideal for schools, institutions, office buildings . . . available in a wide range of sizes. Cabinet heights 14", 20" and 26" . . . depths of 4" and 6" . . . high heat capacity for wall-to-wall installations.



BASEBOARD CONVECTORS—Clean, trim design. Nonferrous heating element, free-hanging for quiet operation. Preassembled, easy to install. 81/4", 12" heights. Dampers optional.



WALL-FIN—Ideal for long runs with low capacity requirements. Steel or nonferrous, 11/4" or 2" dia. tube. Expanded metal and heavy gauge cabinets available.



TYPE A CONVECTORS—Attractive units for steam or hot water. Can be installed freestanding or recessed. Wide range of applications. 57 sizes. Dampers optional.

Convector...for rugged, wall-to-wall radiation

Meets tight heating budgets . . . blends with beauty of modern buildings . . . costs less to install.

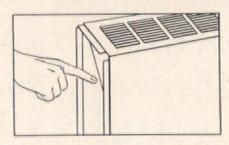
Ideal for wall-to-wall applications . . . under windows.

Here's the lowest-cost type of wall-to-wall radiation you can specify . . . yet secure all the streamlined beauty of modern, clean-cut cabinet design. New Trane Wall Line Convectors are available in a wide variety of sizes to meet your requirements . . . have rugged strength to withstand roughest treatment.

Greater comfort — more efficient "stack action" of convector cabinet creates gentle air flow that distributes warmed air evenly throughout room.

"Decorator" beauty—slim, streamlined cabinet matches design of modern buildings . . . overlapping front panels form smooth wall-to-wall cabinet. Sloping top has attractive, integral outlet grille.

Heavy-duty strength — top, front edge of Trane Wall Line Convector cabinet is reinforced by evenly



spaced, welded 16 gauge steel gussets (above)...eliminates flattening out from rough treatment. Cabinet front available in 18, 16 or 14 gauge steel...back piece in 20, 18 or 16 gauge.

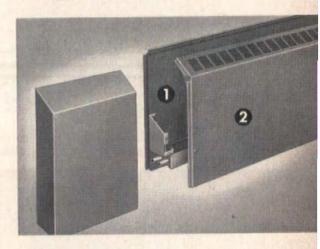
Child-proof safety—heating element is completely enclosed in cabinet. Integral top grille has turned edges to protect probing fingers.

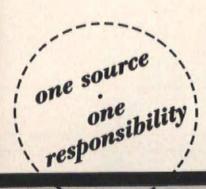
For full information on the new Trane Wall Line Convector or on the complete line of Trane radiation products, call your nearby Trane Sales Office or write Trane, La Crosse, Wisconsin.

Designed for fast installation—only two major components to install—

- One-piece back with nonferrous heating element attached;
- (2) Front panels.

No cover strips except on one end piece. No complicated pitching . . . back piece and heating element come assembled . . . adjusting screw on element support bracket controls pitch.





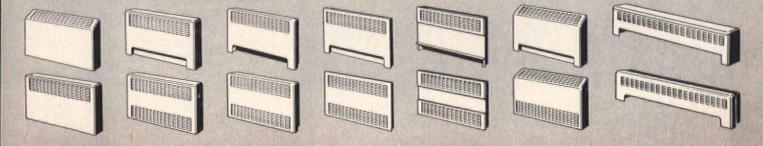
TRANE Wall Line Convectors

Manufacturing Engineers of Air Conditioning, Heating, Ventilating and Heat Transfer Equipment

The Trane Company, La Crosse, Wis. • East. Mfg. Div., Scranton, Penn. • Trane Co. of Canada, Ltd., Toronto • 90 U.S. and 14 Canadian Offices

Industry's most complete convector line . . .

wall hung or free-standing...full or semi-recessed...flat or sloping top. Code Rated!



A PRODUCTS

(Continued from page 238)

CAFETERIAS ARE PORTABLE NOW

Cafeterias are lining up for the customers these days instead of the other way. With important applications in industry and hospitals, the portable cafeteria is wheeled to the assembly area or to the patients' room



53. The Rehco Corp. mobile food train, designed for in-plant feeding, can serve approximately 300 persons. Consisting of a tow truck, a cold-food car and a hot-food car, the entire electrically operated train is wired so that the refrigerating and heating equipment can be operated separately or as an assembly. (Los Angeles, Calif.)



54. The Swartzbaugh Mfg. Co. tray conveyor has adjustable tray guides to accommodate all sizes of trays. A feature of the rubber-tired conveyor is a temperature control for exact temperatures or cold compartments. (1336 W. Bancroft St., Toledo 6, Ohio.)



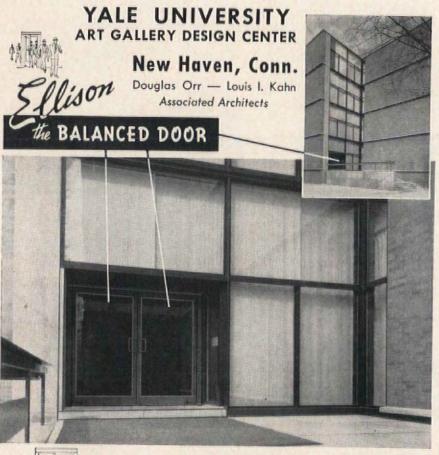
55. The Silvercraft Inc. portable cafeteria counter, made up of three of the company's standard units bolted together and riding on swivel rubber-tired casters, includes hot and regrigerated units said to reach desired operating temperatures from 3 to 5 min. after the switches are turned on. (Louisville, Ky.)



56. The Mealpack Corp. portable tray cart includes an insulated food jar, a pop-up toaster, three beverage dispensers and built-up utility compartment in addition to insulated tray storage area. (2014 Ridge Ave., Evanston, III.)

(Continued on page 246)

IN THE ENTRANCES TO



The Door that lets

TRAFFIC through QUICKLY



ELLISON BRONZE CO.

Jamestown, New York

representatives in 78 principal cities in the United States and Canada

te BALANCED DOOR



SCHOOLS & CHURCHES

Exposed concrete block classroom walls save costs in new cluster, loft, and other economy school designs.



SHOPPING CENTERS

Store fronts and interiors are made more inviting with new block wall patterns and textures.



OFFICES & WAREHOUSES

Sound-absorbing concrete masonry walls hetp reduce noise level in busy offices and warehouses — make reception areas more inviting.



HOMES & APARTMENTS

New sizes, styles, colors in concrete masonry units give contemporary appeal to both interior and exterior walls,



This modern church in Plainfield, lowa, designed by Schweikher and Elsing of Roselle, Ill., achieves pleasing wall pattern with 8"x8"x16" concrete block in stacked bond pattern. Photos by Hedrich-Blessing Studio.

Concrete Masonry

offers these important advantages

Design versatility: Concrete masonry units today offer unexcelled flexibility of design — both in imaginative use of "standard" 8"x16" face-size units, as well as the many new sizes, styles, textures, and colors now available in many areas.

Installed-in-the-wall economy: Concrete block construction usually costs less than any other permanent material; modular units eliminate costly cut and trim —— permit attractive, cost-saving, sound-absorbing exposed interior walls.

NATIONAL CONCRETE :

38 South Dearborn Street





3-core

8" high, 8" high,

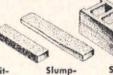
2-core



3-core

A FEW TYPICAL

4" high, Split-



Scoredblock

HELPFUL DESIGN AIDS

available from your local NCMA member

Both are award winners in the 1954 A.I.A. — Producers' Council Product Literature Competition.



IDEAS for wall patterns with Concrete Masonry



What does it take to start a

Some of the attractions in the Manhattan Manor Project, Tampa, Florida



G-E AUTOMATIC WASHER with Activator® washing action. Finest washing and damp drying available today.



G-E SPACE MAKER REFRIGERATOR that provides one-third *more* refrigerator space than old-style models.



G-E AUTOMATIC DISHWASHER that saves time, work and hands. Also: G-E Disposall® and G-E Automatic Water Heater.



 G-E RANGE with EXTRA-Hi-speed Calrod® unit. Faster, safer cooking.



house-buying stampede today?

6500 people visited Manhattan Manor, Tampa, Florida on opening day; many signed firm contracts. Record to date: 225 houses (each equipped with a G-E Kitchen-Laundry) sold, with 375 more planned!

"Unless a person was on the scene with us opening day, it is difficult to imagine the enthusiasm of the people, and their eagerness to sign up for one of our houses with General Electric Kitchen-Laundry equipment. It was like a stampede," says M. H. Foster.

"We feel the sales record is even more impressive when one considers that other builders' homes in the area remained unsold, although the structures were erected before ours. "We just wouldn't think of erecting houses today without a General Electric Kitchen-Laundry."

Opportunity for you. Not just in Tampa, but in scores of cities, builders are reporting phenomenal sales results with G-E appliances. Why not get all the facts through your G-E distributor today?

Home Bureau, General Electric Company, Appliance Park, Louisville 1, Kentucky.



Left to right: D. H. Foster, secretary; George Nipper, G-E distributor-builder representative; and M. H. Foster, president of Manhattan Manor. Ask your G-E Major Appliance distributor builder specialist about promotional plans for your market.

REGARDLESS OF PRICE RANGE, your houses can have a G-E Kitchen-Laundry

(See your G-E distributor for answers to your builder problems.)



IN YOUR \$9,995 HOUSES
Include G-E Refrigerator, G-E Range,
G-E Dishwasher, G-E Disposall and G-E
Cabinets. Adds as little as \$3.26 monthly
to mortgage payments.



IN YOUR \$12,500 HOUSES
Include G-E Refrigerator, G-E Range,
G-E Dishwasher, G-E Disposall, G-E
Automatic Washer, G-E Cabinets. Adds
as little as \$5.31 monthly to payments.



IN YOUR \$16,000 HOUSES
Include G-E Refrigerator, G-E Range,
G-E Dishwasher, G-E Disposall, G-E
Automatic Washer, G-E Dryer, G-E Cabinets, Adds as little as \$6.31 to payments.



A PRODUCTS

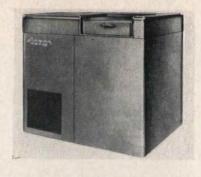
(Continued from page 242)

ICE IS ALWAYS IN DEMAND

Ice is a commodity in demand for a multitude of uses. And there are many forms and containers in which it is available

57. The American Automatic Ice Machine Co. manufactures a unit which makes and stores "Crystal Tips." (4th St. & Park Ave., Faribault, Minn.)





58. Yates-American Machine Co. manufactures the Lipman "Ice Boy," which has a mechanical control for size of the ice tip. The machine can make up to 1700 "King-Size" ice tips per day and can store 900 tips. (Beloit, Wis.)









59. The Ice Appliances, Inc. "Krusht-Ice" machine (left) is a counter model which provides uniformly sized crushed ice for soft drinks, iced tea and coffee, sea food, etc. (1775 Broadway, New York 19, N. Y.) 60. Franklin P. Miller & Son, Inc. offers a "Supreme" ice cube crusher (right) for heavy institutional use. The unit will crush up to 25 lb of ice cubes at one time and can also handle solid 25-lb cakes of ice. (36 Meadow St., East Orange, N. J.)





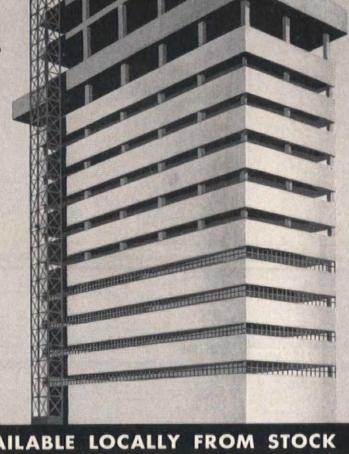
61. The Carrier Corp.'s automatic icemaker (left) supplies cubed or crushed ice. Storage bin collects cubes in one half and any of three grades of crushed ice in the other half. When bin is full, thermostat shuts machine off. (300 So. Geddes St., Syracuse 1, N. Y.) 62. The American Gas Machine Co.'s automatic "Super Cuber" (right) produces up to 9000 ice cubes per day. Storage compartment will store up to 400 cubes. (505 Front St., Albert Lea, Minn.)

(Continued on page 250)



start sooner. go up faster!"



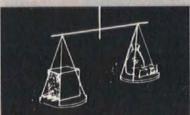


111111

All Materials are AVAILABLE LOCALLY FROM STOCK

There are no delays in starting a reinforced concrete job. All the necessary materials can be delivered in a matter of days from local stocks. These faster starts, plus the faster erection made possible with reinforced concrete, save months of delay . . . months which will mean reduced interest charges and extra rental income that could run into thousands of dollars.

Furthermore, reinforced concrete offers lower over-all costs, rugged strength, rigidity, and flexibility of design found in no other method of construction. On your next job, design for reinforced concrete.

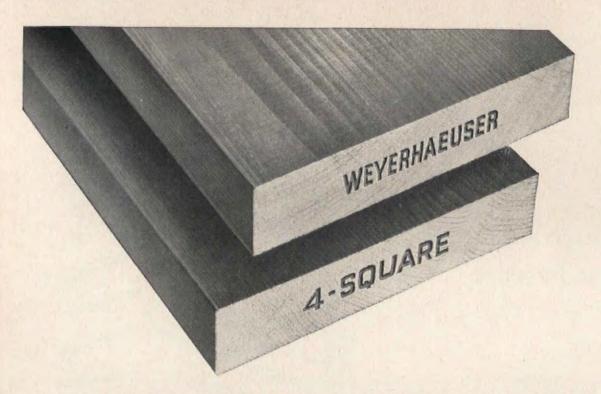


Compare ... YOU'LL SAVE WITH REINFORCED CONCRETE



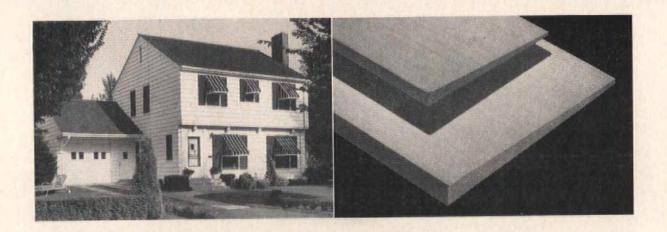
38 South Dearborn Street, Chicago 3, Illinois

CONCRETE REINFORCING STEEL INSTITUTE



THIS BRAND NAME ON LUMBER ALSO BRINGS YOU...





Bevel and Bungalow Sidings

IN A VARIETY OF GRADES AND SPECIES

Known for generations as a manufacturer of quality lumber products, Weyerhaeuser has developed the production of bevel and bungalow sidings to a fine art.

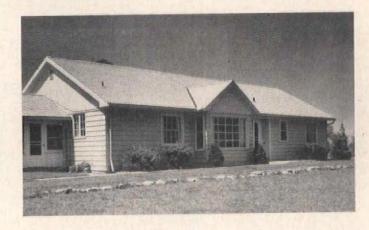
Weyerhaeuser Bevel and Bungalow Sidings are among America's most popular native exterior wall coverings. Their bevel design provides an overlapping, water-shedding pattern which increases their value as an exposure material. Offered in a variety of durable Western Softwoods, Weyerhaeuser 4-Square Bevel and Bungalow Sidings are proved, weather-resistant products.

In addition to their high functional value, bevel and bungalow sidings are easily adaptable to many styles of architectural design. They highlight the structural mass with form, texture and color. The deep shadow lines amplify the width, which is the most striking characteristic of rambler houses. The decorative schemes of homes built with Weyerhaeuser 4-Square Bevel and Bungalow Sidings are easily altered with each new paint job.

Your needs for exterior wall coverings

of unusual beauty and durability can be completely satisfied with Weyerhaeuser 4-Square Bevel and Bungalow Sidings which are manufactured in a variety of grades and sizes from Idaho White Pine, Western Red Cedar, West Coast Hemlock, Ponderosa Pine and Sitka Spruce.

Ask your Weyerhaeuser 4-Square Lumber Dealer to give you full details of these popular sidings . . . or write for descriptive literature.



Weyerhaeuser Sales Company

(Continued from page 246)

63. The Liquid Freeze Corp. "Instant Ice Machine" can freeze from 600 to 5000 lb of ice flakes per 24 hr for use in salads, ice drinks, etc. Shown here with stainless steel storage bin. (1133 Twenty-Fourth St., Oakland 7, Calif.)



FACTS FOR ARCHITECTS ABOUT "CONSTRUCTION BY ADDRESSON" *

HERE ARE NEW METHODS
WHIGH MEAN SUBSTANTIAL
SAVINGS IN LABOR AND

MIRACLE
ADMESIVES CORP.
214 E. 53 St. • New York 22, N. Y.
"CONSTRUCTION BY ADHESION"
*Reg. U.S. Fat. Off.

MATERIALS FOR MODERN CONSTRUCTION

in both NEW building and MODERNIZATION

WRITE TODAY FOR RECOMMENDED SPECIFICATIONS ON 1. Setting Genuine Clay Tile. 2. Insulating Ducts. 3. Insulating walls and ceilings either by Direct Adhesion or in conjunction with Surface Anchors. 4. Installing floor runners; bonding furring strips.



Today it is normal procedure to install clay tile in hotel bathrooms without losing a night's revenue. This illustration shows one of the 144 rooms in the White Plaza Hotel, Dallas, Texas, in which MIRACLE ADHESIVE was used to do the job from the time the guest left his room in the morning until he returned that afternoon.



Plaster applied over wire and cork which has been attached to aluminum ducts using MIRACLE AD-HESIVE and MIRACLE SPINDLE ANCHORS at John Hancock Mutual Life Insurance Co. Building, Boston, Mass. ARCHITECT, Cram and Ferguson. BUILDER, Turner Construction Co.



FIBERGLAS insulation, Type PF-613, 2" thick—bonded to concrete ceiling using MIRACLE PRONGED ANCHORS at Radio City Studio 6B, New York, N. Y. CONTRACTOR, William J. Scully, Inc., New York, N. Y.



WOOD RUNNERS installed on concrete floors with MIRACLE ADHESIVE and MIRACLE ANCHOR NAILS to support 2" solid partitions. Washington Circle Apartments, Washington, D.C. GENERAL CONTRACTOR, Charles H. Tompkins Company.

VISIT MIRACLE EXHIBIT AT ARCHITECTS SAMPLES CORP. 101 PARK AVE., NEW YORK CITY

Obstributed Coast to Coast and in Canada

GARBAGE DISPOSAL MECHANIZED

After the meal is over, what happens to the scraps? More and more garbage disposal units are appearing on the market, especially in areas in which sanitary codes require them. The keyword seems to be speed, combined with sanitary, labor-saving methods





64. The Salvajor Co. "Waste-X-It" food disposer (left) removes waste, by means of directional jets, out of the salvage basin into a grinder. (Kansas City, Mo.) 65. The Given Mfg. Co. "Waste King" pulverator (right) comes equipped with a pre-rinse overhead spray assembly and features a high-speed jet flushing action. (3301 Fruitland Ave., Los Angeles, Calif.)

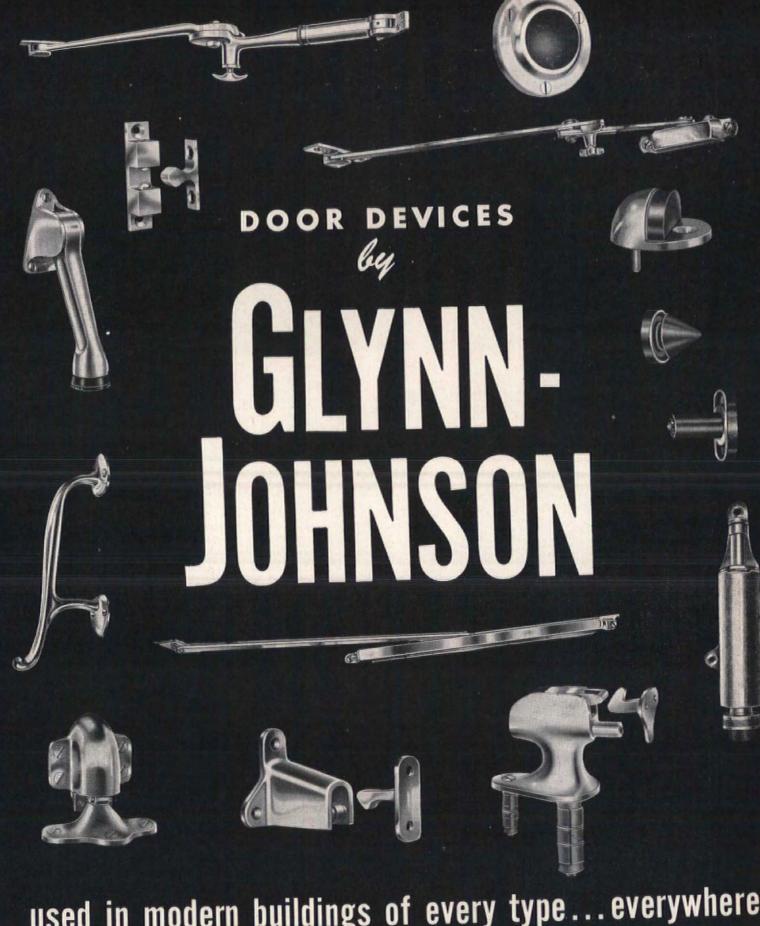




66. Kitchen Engineering, Inc.'s "Kitchen Pig" encloses three different sets of grinders working simultaneously, which are said to dispose of bones, heavy fibrous material and even pieces of wood. (9930 Santa Monica Blvd., Beverly Hills, Calif.)



67. The Jamison Cold Storage Door Co. produces a stainless steel, easily cleaned cold storage door which can be used for refrigerated storage of bulk heavy garbage before disposal. (Hagerstown, Md.)



used in modern buildings of every type...everywhere

Refer to G-J Catalog for complete line of door holders, bumpers, and specialties...for all types of doors in public and commercial buildings.

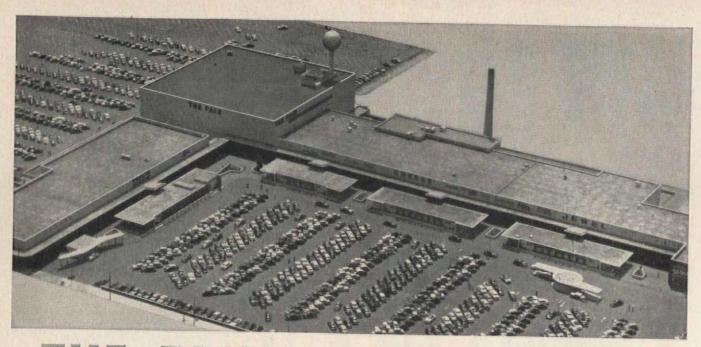


Builders' Hardware Specialties for over 30 Years

4422 N. Ravenswood Ave., Chicago 40, Illinois

ORPORATION

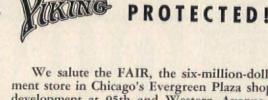
See Catalog 17e in Sweet's File



THE FAIR in Chicago's new Evergreen Plaza

Address.

shopping development IS PROTECTED!





We salute the FAIR, the six-million-dollar department store in Chicago's Evergreen Plaza shopping development at 95th and Western Avenue. Willard Brown, Managing Director at the Plaza states, "VIKING SPRINKLERS were chosen to protect the FAIR because of their insurance, safety and design features. The VIKING Flush Type Sprinkler Heads blend perfectly into the overall decorating plan. They give positive fire protection as well as complementing the interior beauty of the FAIR."

Arthur Rubloff originated and developed Evergreen Plaza — Holabird & Root & Burgee were the architects, and George A. Fuller Company, the general contractor.

The FAIR is Chicago's first department store in this type of shopping development, and the Evergreen Plaza is Chicago's first, major one-stop drive-in shopping development within the most rapidly growing section of the metropolitan area.

Whether your problem concerns new design or remodeling, VIKING has the Sprinkler System engineered for your plans.



THE VIKING CORPORATION, Hastings, Michigan
Without obligation send me the new 16 page Brochure
"FIRE AND YOUR BUSINESS" ().
Have my nearest VIKING REPRESENTATIVE call ().

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These VIKING Representatives Are Ready To Serve You . . .

CRAWFORD and SLATEN CO. Mr. J. Cousart, Atlanta, Ga.

VIKING AUTOMATIC SPRINKLER CO. Mr. J. M. Cashman, Boston, Mass.

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SPRINKLER CO. Mr. J. E. Bush, Mr. Rainey West-berry, Dallas, Texas

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Mr. J. B. Manning, Houston, Texas

TEXAS AUTOMATIC SPRINKLER CO. Mr. J. H. Westberry, San Antonio,

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Mr. F. E. Westberry, Memphis, Tennessee TEXAS AUTOMATIC

SPRINKLER CO. Mr. T. J. Kainz, Jackson, Mississippi

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VIKING SPRINKLER CO. Mr. A. C. Rudin, Hillside, N.J. VIKING SPRINKLER CO. J. H. Keelan, Jr., Philadelphia,

VIKING SPRINKLER CO. Mr. T. F. Smith, Washington, D. C.

VIKING AUTOMATIC

SPRINKLER CO. Mr. R. L. Thorsdale, Mr. L. R. Carlson, Seattle, Washington

VIKING AUTOMATIC SPRINKLER CO. Mr. J. W. Larson, Portland, Oregon

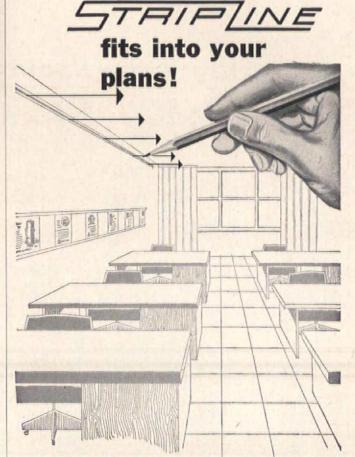
VIKING AUTOMATIC SPRINKLER CO. Mr. H. McDonald, Vancouver, B. C.

HUDSON VIKING SPRINKLER CO. H. A. Westenburg, St. Paul,

VIKING AUTOMATIC SPRINKLERS (CANADA) LTD. Mr. R. G. Wallace, Toronto, Ontario

THE VIKING CORPORATION Mr. J. W. Radford, Mr. Frank A. Rider, Hastings, Michigan

See how inconspicuously



Unlimited air distribution provided by slender continuous diffusers .another AGITAIR first!

Stripline diffusers offer complete application versatility. They are ideal for installation in shallow lighting coves... window stools for air curtaining of glass windows or exposed wall areas...side of furred beams... or as a decorative border blanketing the entire area with noiseless, draftless air distribution. Custom built with AGITAIR's patented diffusing vanes, Stripline diffusers create maximum mixing and aspiration.,. quick temperature equalization and correct air distribution over any desired length.

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AIR DEVICES INC.

185 Madison Avenue, New York 16, N. Y. AIR DIFFUSERS . FILTERS . EXHAUSTERS

"...rich appearance helped sell houses"

- W. P. "Bill" Atkinson Oklahoma City Builder-Developer

... that's the beauty of Higgins Block



No wonder builder after builder is chalking up big selling successes with Higgins Block. Just look at the blocks themselves, with all the well-loved grain and texture effect of oak. And just look at the specifications:

- 9"x 9" net face hardwood blocks easy to install
- 3-ply cross-grain constructionwhen properly installed will not warp, buckle, cup or crack
- Selected oak face-comes with final finish
- Pressure bonded with marine-type glue-water-repellent, climateproof
- Deep-impregnated with famous "Penta"- rot-proof, termite-proof
- Grooved back anchors into adhesive-quiet and comfortable
- Can be laid without special preparation directly on concrete slab-ideal for radiant heat
- · Blocks fit flush-without large, visible V-grooves

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City......Zone....State......

LITERATURE

(Continued from page 209)

HEATING, COOLING AND VENTILATING

- · Heating and Cooling Equipment gives specifications, illustrations and descriptions of Coleman Blend-Air gas and oil furnaces, air conditioning, water condensing unit, cooling section and gas and oil floor furnaces, gas wall heaters. oil and gas water heaters and accessories. 31 pp, illus. The Coleman Co., Inc., Wichita, Kan.
- · The first set of ARI Standards includes 31 individual standards covering a wide range of air-conditioning and refrigeration products. The standards cover year-round residential air-conditioners, room air-conditioners, compressors and condensing units, heat transfer products and central-station air-conditioning and refrigeration equipment. Air-Conditioning and Refrigeration Institute, 1346 Connecticut Ave. N. W., Washington, D. C.
- · Vent Installation Handbook tells how to vent gas appliances, explains the basic principles of gas venting and how these principles affect the task of proper installation. 79 pp, illus. Metalbestos Division, William Wallace Co., Belmont,
- · Infra Accordion Insulation, a 4-page illustrated instruction folder, demonstrates installation techniques between wood beams, on steel beams and trusses, around ducts and pipes, on masonry walls, cement and wood floors and other shallow spaces. This booklet covers problems such as insulating damp cellar walls and crawl spaces, ventilation and vapor formation. Infra Insulation, Inc., 525 Broadway, New York 12, N. Y.

GAS REGULATORS

· Cylinder, manifold and pipeline regulators are illustrated with complete descriptions covering specifications and operating data in Catalog 806, Gas Regulators. Each type of regulator has a chart showing types of gauges used with it, inlet and outlet connections, maximum flow and maximum working pressure. The catalog is cross-indexed so that a particular regulator may be located by its uses and by its gas service. 36 pp, illus. Air Reduction Sales Co., 60 E. 42 St., New York 17, N. Y.

(Continued on page 258)



"A salute to those who made it possible" 🗶



Saves \$26,000 in New School! Look at this paragraph from the Magazine of

Building article entitled, "Structural Economy"! "Light-gauge, welded acoustic steel deck, a double-duty, factory-built material, saved 59c per sq. ft. (\$26,000 in all). It was erected in only ten working days, replaced separate roof deck and framing and eliminated acoustical ceilings and plastering."

The structure was the Central High School in Kenosha, Wisconsin. The architect was Lawrence Monberg.

And the "factory-built material": Fenestra* Acoustical "AD" Panels! A Fenestra Structural-Acoustical "AD" Panel is a box beam with a flat surface top and bottom. The top surface of the panel is the subfloor or support for finished roofing. The perforated bottom surface forms the ceiling. Inside the box beam is glass fibre insulation.

Why not cut your own building costs with a Fenestra combination structural-acoustical ceiling. It goes up fast-the panels lock together simply and quickly, saving days of labor and a lot of money. It is practically indestructible. Bumps and knocks can't hurt it. The acoustical efficiency is not affected by washing or painting. And these panels are noncombustible!

For further information call your Fenestra Representative. Or write Detroit Steel Products Company, Dept. AR-6, 2252 E. Grand Boulevard, *Trademark Detroit 11, Michigan.

Your need for a maintenance-free, noncombustible, built-in acoustical treatment encouraged us to develop Fenestra Structural-Acoustical Building Panels—a great advancement in building products.



G-E Packaged Units Give Low-cost Air Conditioning in AAA Building

What's the best way to air condition the large building that was never designed for it?

Flexible new General Electric Packaged Air Conditioners provide the answer for A.A.A.'s newly remodeled building in Washington, D.C. Just three G-E units on each floor cool this 30-year-old building. 5, 7½ and 10 horsepower models are used—depending on the space each handles—representing 180 tons in all.

Here's why G-E Packaged Units were selected and why more and more buildings of all kinds are being cooled in this way.

low First cost. Equipment is priced surprisingly low. Installation costs are low, too, for remodeling can be held to a minimum. Duct runs are shorter than would be required for a central system. In many applications they are not required at all. No machinery rooms, either.

FIT EVERY APPUCATION. The adaptability of G-E units is unmatched. 3 different sizes were used in the AAA Building, and G.E. makes even more—enough to fit any situation, in-space or out-of-space. They take little floor-space, can be squeezed into corridors and little-used areas.

PARTIAL OPERATION. Zoning is simplified. When only part of a building is in use, units in other areas can be shut off, saving money.

G-E 5-YEAR WARRANTY is another advantage over central systems. G.E.'s sealed-in-steel cooling unit is so trouble-free that G.E. provides 5 years' protection (including labor) on the entire refrigeration cycle. Don't forget, with G-E no expensive maintenance crews are needed.

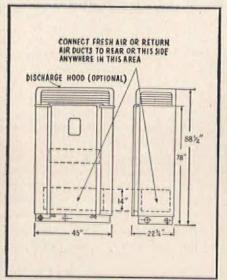
To find out how you can use G-E Packaged Air Conditioners profitably, write General Electric Company, Sec. AR-5, Air Conditioning Division, Bloomfield, N. J.



NEWLY REMODELED American Automobile Association Building in Washington, D. C., is air conditioned by 3 G-E Packaged units on each floor. Architect for remodeling was A. R. Clas; George H. Riggs, Jr., associate. Consulting engineers: Lanier & Levy. General contractor: Wm. P. Lipscomb Co. Mechanical contractor: Morris and Eagan Co.



RECESSED IN CORRIDOR WALL, this 7½ton G-E unit sends conditioned air to surrounding offices. Air returns through louvers in doors to unit.



DIMENSIONAL DRAWING of Model FD 75G-71/2-ton-G-E Packaged Air Conditioner.

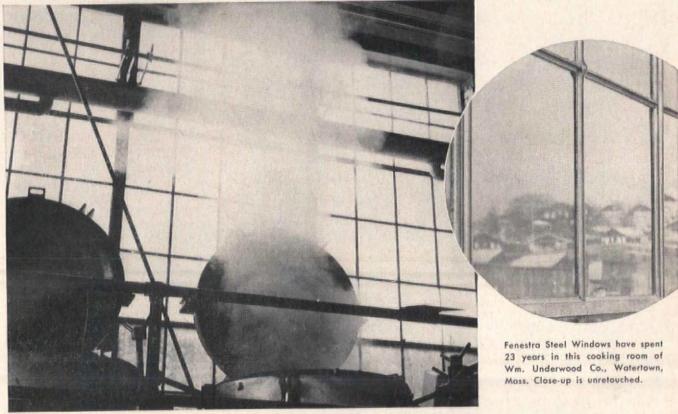


FOR BIG DRAFTING ROOM and other areas, G-E 10-ton unit provides quiet, steady cooling. Individual units like this can be turned off when not needed—others can be left on.

AIR CONDITIONERS GENERAL & ELECTRIC



"A salute to those who made it possible"



How to make a habit of saving \$3,600

Despite 23 years of steam-dousing, the galvanized Fenestra* Steel Windows in this "cooking" room have never rusted.

Now Fenestra offers you Super Hot-Dip Galvanized Steel Windows that cost no more than regular steel windows with two inside-outside field coats of paint! And these windows never need painting. That's a saving of over \$3,600 in paint and painting labor-every few years-for the life of your building . . . if yours is an average-sized plant,

Fenestra has the only plant and equipment in America especially designed for the tricky job of window galvanizing. For details on Fenestra Super Hot-Dip Galvanized Steel Windows, call your Fenestra Representative listed in the phone book yellow pages-or write Detroit Steel Products Company, Dept. AR-6, 2252 E. Grand Blvd., Detroit 11, Michigan.



BEND TEST shows why Fenestra Steel Windows are called Super Hot-Dip Galvanized. When two pieces of galvanized steel are bent, then straightened, some types of galvanizing crack open, leaving the steel vulnerable. The Fenestra piece stays protected.



Your desire for windows of strong material that would resist rust, resulted in Fenestra Super Hot-Dip Galvanized Steel Windows—a great advancement.





In Kempster Hall a 50 KW U.S. engine-generator guards against dangerous power failure.

Should the regular source of power fail the dependable U.S. plant will start automatically and carry the emergency load.

Before you decide on a stand-by unit, ask for data on U.S. Engine-Generators. There are over 300 models with a power range of from ½ to 300 KW to meet your most exacting needs. Write for complete information. There is a United States Motors Representative near you.



UNITED STATES MOTORS CORPORATION

351 Nebraska Street, Oshkosh, Wisconsin

A III LITERATURE

(Continued from page 254)

TILE

- The 1954 Asphalt Tile Color Classification Charl, listing some 27 colors of tile available, indicates what colors are included in each manufacturer's line, and also shows various tiles that give the same general color tone or effect. The current release covers Armstrong, Azrock, Congoleum, Goodrich, Hachmeister, Johns-Mansville, Kentile, Mastic, Moultile and Tile-Tex asphalt lines. 2 pp. Asphalt Tile Institute, 101 Park Ave., New York 17, N. Y.
- The Mosaic Tile Co. has issued three new clay tile "work books" showing the three types of Mosaic Clay Tile in full-color. Bulletin No. 161, Mosiac Everglaze Hard Glaze Tile, describes a new glazed tile with tough matte-finish surface for walls, floors, counter tops and drain boards. 4 pp, illus.

Bulletin No. 162, Mosaic Velvelex Ceramic Mosaics tells about an unglazed clay tile which, the manufacturers claim, is vitreous, impervious to moisture, grease and stains, as well as being frost-proof and wear-resistant. 4 pp, illus.

Bulletin No. 163 covers Mosaic Bright Glaze Wall Tile, developed to harmonize with colored bath fixtures produced by leading plumbing-ware manufacturers. 4 pp, illus. The Mosaic Tile Co., Zanesville, Ohio.

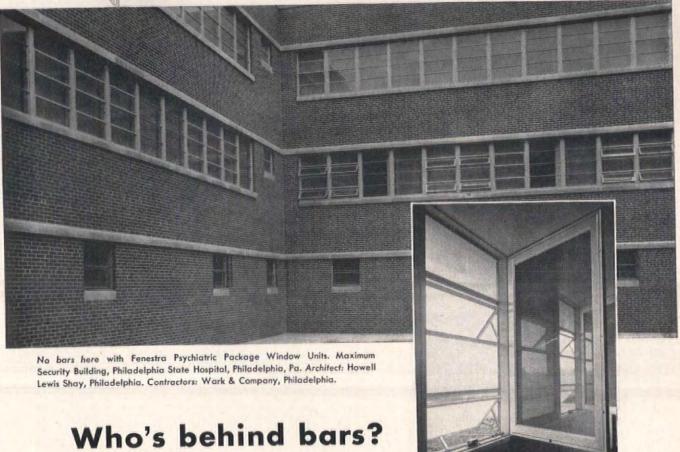
STEEL: STAIRS AND SUPPORTS

- The National Association of Architectural Metal Manufacturers has published Bulletin No. 17, Steel Stairs, one of a series of Architectural Metal Bulletins published to provide assistance in preparing plans and specifications for architectural metal. National Assoc. of Metal Manufacturers, 228 N. LaSalle St., Chicago 1, Ill.
- Kindorf Channel Fittings, Hangars and Supports gives specifications and application and engineering data on: hangars and supports for multiple runs of conduit; structor framing channel and fittings; straps and clamps; concrete inserts; brackets; fluorescent fixture supports; hangar rods; bolts and nuts and marine cable straps and hangars. 108 pp, illus. The Kindorf Co., Pittsburgh 33, Pa.

(Continued on page 262)



"A salute to those who made it possible"



... NOBODY!

Fenestra's new Psychiatric Package Windows in this Maximum Security Building of Philadelphia State Hospital look just like the beautiful Fenestra* Awning-Type Windows you've seen in modern schools, hospitals, office buildings and homes throughout America. This therapeutic benefit is gained without the slightest loss in safety.

The great security provided by Fenestra Psychiatric Package Windows is in their basic design and in their screens.

The Package Unit includes the graceful awningtype steel window with smooth-working operator and removable bronze adjuster handle . . . and your choice of three types of flush-mounted inside screens: Detention Screen for maximum restraint

(tremendously strong mesh attached to shock absorbers concealed in the frame), Protection Screen for less disturbed patients, or Insect Screen for general hospital use.

And look at the safety features: No sills to climb on, no sharp corners. No way for patients to get at the glass. All-weather ventilation, operated without touching the screen. Glass washed inside and outside from inside the room.

To eliminate maintenance-painting, Fenestra Steel Windows are available (on special order) Super Hot-Dip Galvanized. For full information . . . call your Fenestra Representative, or write Detroit Steel Products Company, Department AR-6, 2256 East Grand Blvd., Detroit 11, Michigan.



Your need for a more homelike, pleasant environment for patients encouraged us to develop a psychiatric window that didn't look like one—the Fenestra Psychiatric Package Window Unit...a great advancement in building products.



STEEL WINDOW . STEEL CASING . SCREEN . OPERATOR . REMOVABLE BRONZE ADJUSTER HANDLE



MEDUSA Portland Cement Company 1000 Midland Building

SALES OFFICES

Chicago, Illinois Pittsburgh, Pa. Milwaukee, Wisc.

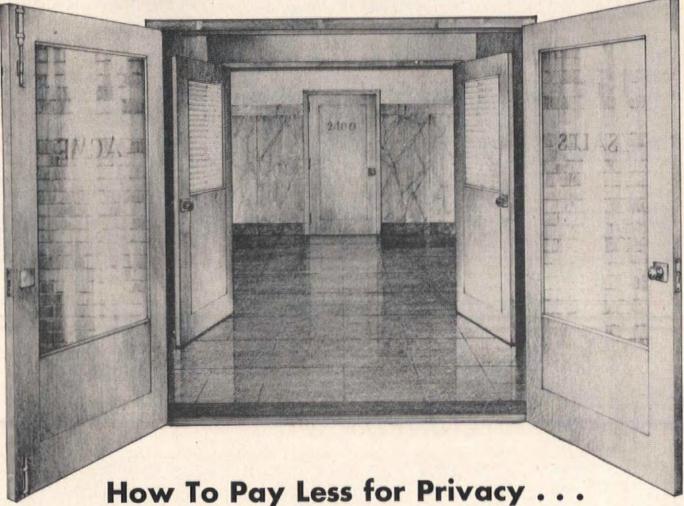
Toledo, Ohio New York, N. Y. York, Pennsylvania Cleveland 15, Ohio

WHITE . WATERPROOFED WHITE . GRAY WATERPROOFED GRAY . AIR ENTRAINING . HIGH EARLY STRENGTH . STONESET . BRIKSET WHITE TILE GROUT CEMENT

PORTLAND CEMENTS FOR OVER SIXTY



"A salute to those who made it possible"



Now you can save up to \$100 per door! Just compare the cost of Fenestra® Hollow Metal Door-Frame-Hardware Units with the cost of some other brands of hollow metal doors.

Here's why you save so much:

- 1. They cost less to buy because they are mass produced on special jigs that eliminate expensive time and labor. You get production-line economy -not custom job costs.
- 2. They come to the job complete-pre-fitted frame, door and hardware are made for each other. No time lost in planning or trying to order separate elements that will fit each other.
- 3. You save on installation cost with these complete

units. There's no cutting or fitting or mortising or tapping—the door is in and in use in minutes.

And you continue to save on maintenance because Fenestra Hollow Metal Doors can't warp, swell, stick or splinter. They always open easily . . . smoothly. And they close quietly, because the inside surfaces are covered with sounddeadening material.

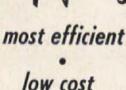
For strong, solid quality at unusually low cost, check on Fenestra Doors-there's a door for every purpose in the Fenestra line; Entrance Doors, Flush or Regular Interior Doors with glass or metal panels, Doors with the Underwriters' B Label. For pictures and details, write the Detroit Steel Products Company, Dept. AR-6, 2252 E. Grand Blvd., Detroit 11, Michigan.

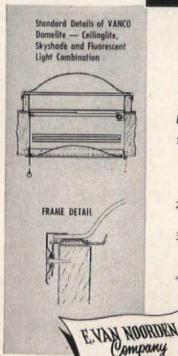
Your need for lower building costs encouraged us to develop a quality door unit that would save initial cost and installation cost — Fenestra Hollow Metal Door-Frame-Hardware Units . . . a great advancement in building products.

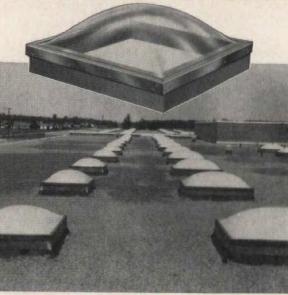


THE ARISTOCRAT OF ALL PLEXIGLAS DOMELITES

best in modern







NATURAL LIGHT EXCELS ALL OTHER LIGHT . . Why Not Pipe It Into Your School-Rooms, Your Hospitals, Your Factories — Through

Light up your corridors and your workrooms . . . Bring daylight into those interior rooms and dark corners —

Insist on VANCO domelites . . here is why -

- 1. VANCO Domelites are designed and manufactured by E. Van Noorden Company, makers of the famous VANCO Skylights since 1873 — over 80 years of know-how experience are incorporated in their VANCO Domelite design.
- 2. VANCO spells excellence of workmanship and reliability - VANCO Domelites spell permanency.
- 3. PLEXIGLAS® dome and metal frame are factory assembled, packed and shipped as complete unit. No haphazard field assembly.
- 4. Each unit guaranteed weather-tight.

VANCO Ceilinglites, when used with Domelites, provide excellent insulation. Clear Plexiglas® Domelite and translu-cent Plexiglas® Ceilinglite make the best combination for diffusing light.

- DOME-AIR VENTILATING DOMELITE —OTHER VANCO PRODUCTS—
 - · UP-BLAST VENTILATORS
 - CUPRAFACE AND CUPRATWEEN
 - DURATITE SKYLIGHTS



(Continued from page 258)

WOOD IN BUILDING

- · How to Build Wood Frame Trussed Rafters presents specifications, details, installation instructions, illustrations and a list of materials for the use of Teco trussed rafters in homes, schools, churches, commercial buildings and garden apartments. 16 pp, illus. Timber Engineering Co., 1319 18 St. N. W., Washington, D. C.
- · Technical Bulletin No. 1069, Fabrication and Design of Glued Laminated Wood Structural Members is a handbook containing important phases of the production and use of laminated structural members, from the selection of lumber and gluing methods to engineering design formulas for determining proper sizes of beams, columns, arches and truss members. Superintendent of Documents, Government Printing Office, Washington 25, D. C.
- · Wood Preservation is a guide to the specification and use of pressure processes for Douglas fir and other western woods. It covers preservatives, design practices, fabrication, treatment of gluelaminated wood and handling of pressure-treated lumber and presents recommended practices and retention tables. 4 pp, illus. Western Wood Preserving Operators' Assoc., 1410 S. W. Morrison St., Portland 5, Ore.

USE OF HARDBOARD

· Allwood Hardboard in Modern Building and Home Design describes physical properties of each type of hardboard and uses of the product in home construction for walls, ceilings, cabinet work and for concrete forms in rough construction. A table of bending radii is given for curved shapes in certain types of building and cabinet work. 8 pp, illus. Oregon Lumber Co., Hardboard Division, Dee, Ore.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

E. Dagnino C., Architect, La Florida Ave Las Aracias 33, Caracas, Venezuela.

Arthur P. Jentoft, Designer-Structural Engineer, 148 Babcock St., Brookline 46, Mass.

Raymond L. Moldenhauer, Architect, 3216 Raymond Ave., Brookfield, Ill.

Send for your copies of free literature. Avail yourself of VANCO's free Day-

light Engineering

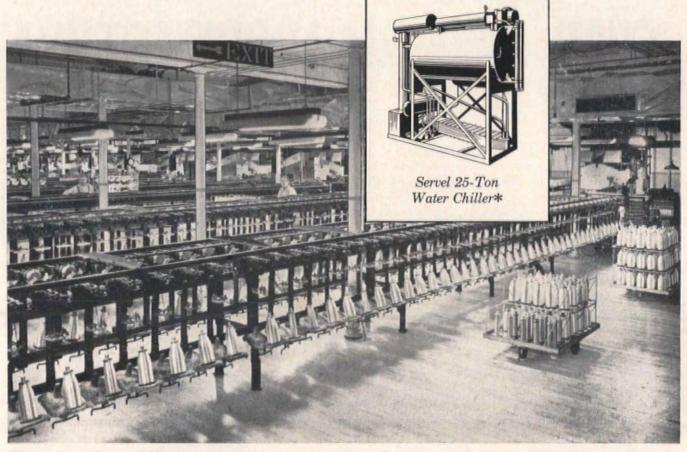
Skylight Designs

since 1873 MAGAZINE STREET

OSTON 19, MASS.

Temperature and humidity weave

knotty problems: Servel solves them!



Winding Room, Pepperell Manufacturing Company, Fall River, Mass. Francis Associates, Marion, Mass., Consulting Engineers,

ONCE AGAIN, Servel Air Conditioning has been chosen to solve a particularly knotty problem.

Servel Air Conditioning was installed in the winding room of the Pepperell Manufacturing Company, Fall River Division, to reduce "seconds" to a minimum. Varying temperature and humidity had caused excessive filling breakages and uneven yarn tension.

With the installation of Servel Air Conditioning equipment, room temperature is kept within one-half degree, humidity within one per cent.

Quality is stepped up. Production is increased.

Perhaps this example of how one company has utilized Servel Air Conditioning to meet its particular production problem will suggest other applications that might mean profit to you. Whenever you need economical, efficient year-round temperature and humidity control—residential, commercial, or industrial—there's a Servel Air Conditioning installation to do the job best.

Servel engineers will be glad to advise you on any air conditioning problems you may face. Get in touch with your nearest Servel dealer or write direct to Servel, Inc., Dept. AR-64, Evansville 20, Indiana.

*Because Servel Air Conditioning equipment operates on steam from any source, operating economy is outstanding. There are no moving parts in the cooling system and therefore no vibration and little wear. Every Servel unit carries a full five-year warranty.



the name to watch for great advances in

AIR CONDITIONING

✓ REFRIGERATION

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THE STRONGEST ENDORSEMENT EVER GAVE AN ARCHITECTURAL

Almost twenty-six thousand architects and engineers now subscribe to Architectural Record.

Never before has an architectural magazine made accessible to advertisers so many of the architects and so many of the engineers whose designs and specifications determine which building products four out of five of the nation's building dollars will buy.

Periodic checks of *Dodge Reports* of building activity (available exclusively to Architectural Record), show that over 85% of the total dollar volume of *all* architect- and engineer-designed building, nonresidential and residential, small and large, is currently in the hands of Architectural Record's architect and engineer subscribers.

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Architectural Record balances and times its editorial content with the aid of Dodge Reports to be of constant maximum value to architects and engineers in terms of the work on their boards—serves the full range of architectural design, nonresidential and residential, that comprises the practice of architects and engineers—edits every page of every issue specifically for architects and engineers.

That is why architects and engineers have voted Architectural Record their preferred magazine in 55 out of 62 readership studies sponsored by BUILDING PRODUCT MANUFACTURERS AND ADVERTISING AGENCIES. (Ask for the interesting new summary of these studies.)

Advertisers, too, endorse Architectural Record above all other magazines in its field.

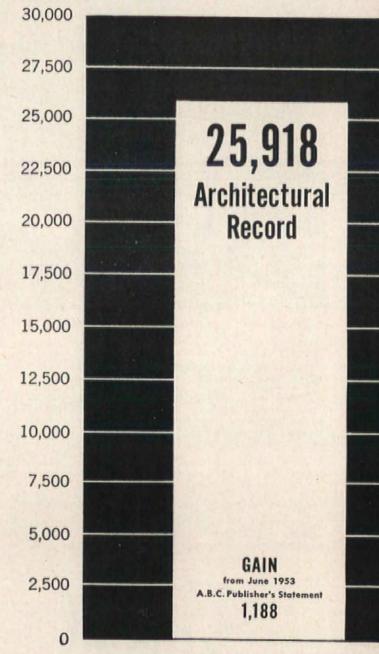
In 1953 Architectural Record carried 2,931 pages of advertising—an all-time high for architectural magazines—and again in 1954 advertisers are placing primary reliance on Architectural Record.



Architectural

"Workbook of the active architect and engineer"

F. W. Dodge Corporation, 119 West 40th Street New York 18, N. Y. • OXford 5-3000



ARCHITECTS AND ENGINEERS

MAGAZINE

Total Architect and Engineer Circulation

24,642 Progressive Architecture based on December 1953 A.B.C. Publisher's Statements

Comprising all "Subscriptions in Company Name, Owners & Corporate Executives, General Managers & Managers" in Classification 1 ("Architectural, Architectural-Engineering Firms & Architects & Architect-Engineers in Private Practice") and Classification 2 ("Consulting Engineering Firms & Engineers in Private Practice"), plus "Registered Staff Architects" and "Staff Engineers" in all Business & Industry Classifications.

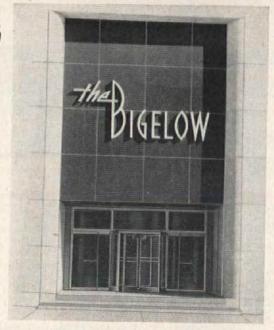
13,555 Architectural Forum

LOSS from June 1953 A.B.C. Publisher's Statement 381

LOSS from June 1953 A.B.C. Publisher's Statement 33



REVOLVING DOOR "LUXURY" LOWERS OPERATING COSTS



Arthur Tennyson, Pittsburgh: Architect

THROUGHOUT THE BIGELOW, only permanent dwelling-type apartments in downtown Pittsburgh, the emphasis is on comfortable and luxurious living. But this accent on "ease of living" is only one of many reasons why you enter the Bigelow through revolving doors.

Its twenty-story height plus a considerable front exposure . . . its wide impressive lobby plus a first floor primarily given up to service shops . . . its complete air conditioning plus its busy downtown location — all combine to make revolving doors a necessity, not a luxury.

Consider, for example, the problem of stack draft that always plagues a structure of this height. Because they are "always open — always closed," revolving doors eliminate all stack drafts. By the same token, they seal out summer heat and winter cold. Outside dust, dirt, soot and grime are kept outside. All lobby space is made comfortably usable right up to the doors. Yet maintenance cost of a modern revolving door entrance is minimum.

These are typical advantages that make revolving doors a sound self-paying investment for long-range rentability . . . a specification that merits your consideration when planning any business or commercial building. The above coupon brings you a bookful of helpful data on both Revolving Door and Swing Door Entrances by International. Send for your personal copy now.



REVOLVING DOOR DIVISION

2002 EDGAR ST. EVANSVILLE 7, IND.

INTERNATIONAL STEEL COMPANY

THE RECORD REPORTS

(Continued from page 16)

requirement that all applicants must conform to a major project plan before they can receive Federal aid.

Still another provision of the 1954 measure would give the Slum Clearance and Urban Redevelopment Division free rein on the spending of \$5 million on experimental efforts as for pilot undertakings. The only limitation would hold HHFA to a payment of not more than two thirds of the cost. The money would be used to assist cities, and all public subdivisions, in developing, testing and reporting methods and techniques, and carrying out demonstrations and other activities for the prevention and elimination of slums and urban blight.

Wanted: Strong Zoning Codes

If American cities had kept their zoning and housing codes modern, and enforced them, there would have been no need for a Federal program of financial assistance because there would have been no major slums, Mr. Follin asserts, and he stresses the need for strong zoning codes as well as housing regulations.

He places a strong responsibility on the city itself, not only for drafting and enforcing strong codes, but for provision of municipal improvements. "Public improvements must be kept up if a neighborhood is to be kept up," he declares. "Old schools, for example, are an important factor. Lots of areas can be started on the upgrade toward improvement just by the addition of new schools. Also important are the playgrounds and new street patterns to regulate traffic flow.

"It is unfair to ask an owner to spend money even to bring his property up to minimum standards if the city at the same time does not bring up its own improvements."

Where Are We Now?

Where the agency had something over 200 localities in its Title I program as of March 31, 1954, it conceivably could have many hundreds under terms of the new legislation. But even without the stimulus of the new bill, slum clearance and urban redevelopment has been very big business in this country.

As of the first of this year, HHFA reported that estimated Federal capital grant requirements for the projects then delineated amounted to \$196 million. Local grants-in-aid in the form of cash, donations of land, site improvements and

(Continued on page 270)



no matter

how you

look at it

Baseboard Heating by Tuttle & Bailey adds four important "plus values"

For comfort, there's no comparison with the constant, gentle circulation of heated air that blankets cold outside walls and glass areas with a layer of warmth. Means warmer floors, too . . . and even temperature from floor to ceiling. No cold spots. No drafts. Real comfort on even the coldest days.

For heating economy, T & B Baseboard Heating Panels are quick to respond to thermostatic control. And fast transmission of heat from boiler to rooms adds up to real fuel savings.

For appearance, T & B Heating Panels are styled by Walter Dorwin Teague.

Trim, smooth lines that preserve the functional beauty of today's modern home. Easily painted to match wall or trim . . . easy to keep clean.

For more living in every room, compact T & B Baseboard Heating Panels save valuable floor space, do not interfere with furniture, wall-to-wall carpeting, or floor-length drapes.



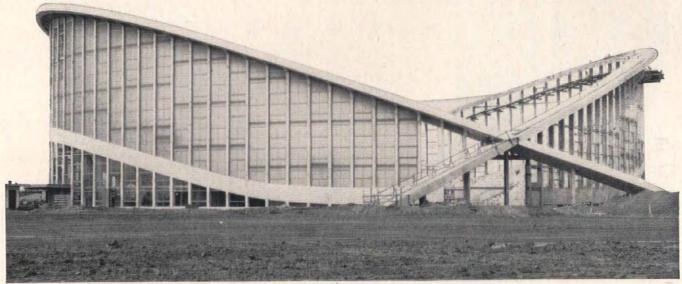
For complete information, selection data, and installation details . . . write for Catalog No. 301



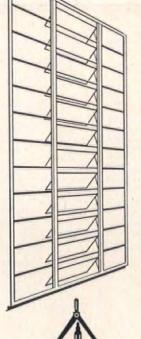


Imaginative Design

INCLUDES TRUSCON STEEL DONOVAN WINDOWS



North Carolina State Fair Arena, Raleigh, N. C. William Henley Deitrick, Inc., Architect Wm. Muirhead Construction Co., General Contractor Matthew Nowicki, Arch. Consultant Senerud-Elstad-Krueger, Engr. Consultants



• It's a livestock judging pavilion. And, it represents a high degree of creative imagination. Twin intersecting conic sections sweep majestically, supporting a wide panorama of Truscon Steel Donovan Windows.

Unusual? Yes. But, this building illustrates the extreme versatility of Truscon Windows. It shows how well they combine with architectural imagination to inspire original and functional structures.

Donovan Awning Windows by Truscon offer unique lighting and ventilation advantages. The awning principle permits ventilation control in inclement weather. Ventilators operate in unison, either by mechanical or manual control. The design completely eliminates all unsightly connecting arms, screws and racks. Substantial jamb and sill sections (4.2 lbs. per lineal foot) provide adequate strength for satisfactory control of a large ventilating area in a single unit.

No other type of window so conveniently provides inconspicuous, yet adequate, large-area ventilator control. In no other window design is it possible to safely construct projected ventilators in widths up to 6 feet, or to couple as many as 16 large vents on one concealed operator. Where required, it is possible to construct a clear opening up to thirty-six feet in height with 100% ventilation, and with all vents mechanically controlled from the floor.

Let your imagination soar. Capture sun and sky, free from the limitations of conventional window usage. See details on all Truscon Metal Windows in Sweet's; or write Truscon for latest details and specifications.

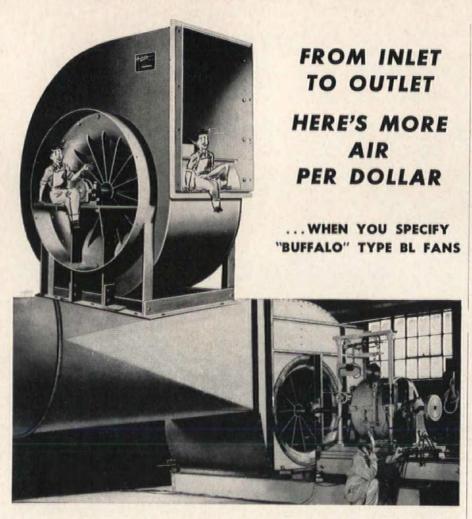
TRUSCON STEEL DIVISION REPUBLIC STEEL

1062 ALBERT STREET • YOUNGSTOWN 1, OHIO Export Department: Chrysler Building, New York 17, N.Y.



TRUSCON® a name you can build on

MARK OF MERIT



Even before incoming air reaches the wheel of the "Buffalo" BL Fan, it is guided in the most efficient path. The inlet bell is smoothly curved for absolute minimum friction; while the welded-on stationary inlet vanes reduce turbulance and assure rated air delivery even if inlet conditions are unfavorable. The "Buffalo" inlet is one reason why "Buffalo" air-moving costs are low.

The new improved "Buffalo" rotor, too, vitally affects performance. Here the full-curvature die-formed shroud and the backward curved blades move the air through the specially shaped housing and outlet with smoothness, quietness and efficiency. In addition, the fan's performance is stable from shut-off to free air delivery.

Besides these and other features, there is an intangible in all "Buffalo" fans that has always made for high satisfaction. We call it the "Q" factor, or built-in quality which provides long life and freedom from trouble. This is the sum total of the 77 years of "Buffalo" experience and know-how that goes into every fan to leave our plant.

For further details on "Buffalo" Type BL Fans, write for new Engineering Bulletin F-100



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Buffalo, N. Y.

PUBLISHERS OF "FAN ENGINEERING" HANDBOOK Canadian Blower & Forge Co., Ltd., Kitchener, Ont. Sales Representatives in all Principal Cities

VENTILATING EXHAUSTING

AIR CLEANING

COOLING

AIR TEMPERING

PRESSURE BLOWING

THE RECORD REPORTS

(Continued from page 266)

clearance work as well as supporting facilities were to be provided by localities themselves at a cost of \$110 million. This represents \$306 million in all. Construction outlays represented in these projects were estimated at nearly \$500 million. And this included only 52 slum areas in 32 cities.

This breakdown of the expenditure by type of construction was given: \$271.3 million for housing (\$257.7 million for private and \$13.6 million for public); \$53.5 million for commercial construction; \$48 million for industrial construction; \$107.7 million for public and semipublic construction; and \$16.7 million for site improvements.

A complete list of the localities having programs under Title I of the Housing Act of 1949 and their status as of March 31, 1954 is presented in the following two tables.

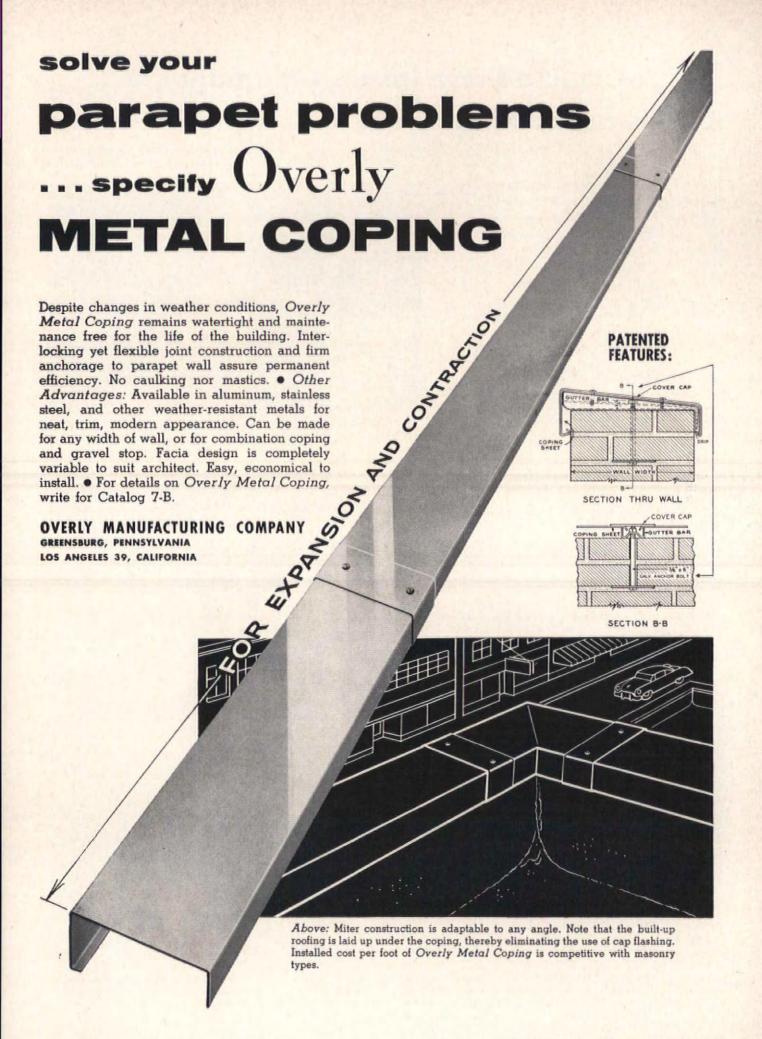
PROGRAM DIRECTORY

Capital Preliminary Final

Locality	Grant Reservation	Planning Approved	Planning Approved
ALABAMA			
Auburn	\$ 39,830	2-54	
Birmingham	2,500,000	5-51	7-52*
Cullman	41 300	12-53	
Eufaula	98,980	3-54	2 25
Florence	180,230	4-51	6-52
Gadsden Huntsville	349,160 124,110	5-52 1-51	
Hoursyllie	124,110	12-53	
Mobile	967,765	6-50	10-51*
Montgomery	1,296,210	6-50	9-51*
Phenix City	218,680	3-54	
ARKANSAS			
Little Rock	1,275,000	6-50	3-51*
Texarkana	136,080	5-52	2-31-
	100,000	5 52	
CALIFORNIA	10.000	* **	
Calexico	40,390	7-52	
Redlands Richmond	73,570	4-52 9-50	
Sacramento	107,730 364,630	4-51	
San Bernardino	179,340	1-53	
San Francisco	6,346,000	7-50	8-52*
Upland	35,070		
CONNECTICUT			
East Haven	58,800	5-51	
Hartford	832,000	11-50	6-52
Middletown	74,830	3-54	0-32
New Haven	883,263	2-51	7-52
New London	213,520	10-51	7-53
Norwalk	163,660	12-50	
Norwich	164,173	4-51 9-50	
Shelton	127,800	9-50	11-52
Stamford Waterbury	399,770 259,140	2-51 7-51	6-52
Willimantic	70,420	11-51	
417-12-12-12-12-12-12-12-12-12-12-12-12-12-	, 0,420	11-21	
DELAWARE		14.44	2-20
Wilmington	508,830	10-52	3-54
DISTRICT OF			
COLUMBIA			
Washington	6,385,186	10-50	1-52*
ILLINOIS			
Cairo	208,180	6-53	None *
Chicago	17,692,371	5-52	2-51*
Chicago Heights	17,692,371 132,860	7-50	3-52
Cook County	500,000		
Danville	333,970	4-51	9-52
East St. Louis	629,370 182,140		
Galesburg	182,140	9-51	12-52
Kankakee Lincoln	102,830 88,200	5-51 8-51	
Peoria	700,000	7-50	
Robbins	26,110	4-51	4-52*
Rock Falls	51,240	5-51	4-53
Urbana	51,240 99,400		
Waukegan	182,280	4-50	
	(Contin	ued on p	age 274)

(Commune on page 21

PRESSURE BLOWING * Approved for development



Tests like these insure the quality of Kentile asphalt tile for use in Apartment Houses

A.I.A. 23-G

Because of scientific tests like these, every tile shipped has precision-straight edges and true right-angle corners. That means installation ease and economy. Further, Kentile's manufacturing techniques and tested ingredients mean that every tile is tougher, more durable, easier to clean...with lasting brilliance of color and uniformity of marbleization. But, get full details when you consult the Kentile Flooring Contractor. He's listed under FLOORS in the Classified Telephone Directory.

Specifications and Technical Data

INSTALLATION: Over any smooth, firm interior surface free from spring, oil, grease and foreign matter...over metal, wood, plywood, concrete, radiant heated concrete slab, concrete in contact with the earth; on or below grade.

THICKNESSES: Kentile is available in two gauges: 1/8" for residential and most commercial uses-3/16" for industrial use and where extra-heavy duty flooring is needed.

SIZES: Standard tile size is 9" x 9".

SPECIAL KENTILE: Greaseproof asphalt tile for industrial uses in a wide range of marbleized colors—extremely resistant to petroleum and cooking greases and oils, alcohols, alkalis and most acid solutions.

Approximate Installed Prices (per sq. ft.)

IN TAXABLE	1/8" Gauge	1/6" Gauge
KENTILE: A Colors	20¢	25¢
KENTILE: B Colors	25¢	30¢
KENTILE: C Colors	30¢	40¢
KENTILE: D Colors	35¢	40¢
SPECIAL KENTILE	40¢	50∉

These costs are based on a minimum area of 1,000 sq. ft. over concrete. Color groupings range from Group "A," the darkest solid colors... to Group "D," the lightest marbleized colors. Special Kentile is available in Regular and DeLuxe Colors.



The ability of Kentile's top-grade raw materials to flow properly during calendering is measured by a Mooney Viscometer.



This electronic Color-Eye records the shade of each Kentile color to help preserve uniformity of tone from one run to the next.



Trained technicians using Special Gauges check the length and width of Kentile to tolerances less than a thousandth of an inch.



Surface smoothness is checked by chemists who select tiles from every run and examine them under Binocular Microscopes.

Samples and literature available on request from nearest Kentile, Inc. office listed below. Ask about Kentile for WALL use, too. KENTILE

The Asphalt Tile of Enduring Beauty





Kentile is the floor your clients know and want...

BACKED BY MORE FULL-COLOR ADVERTISING THAN ANY OTHER ASPHALT TILE FLOOR

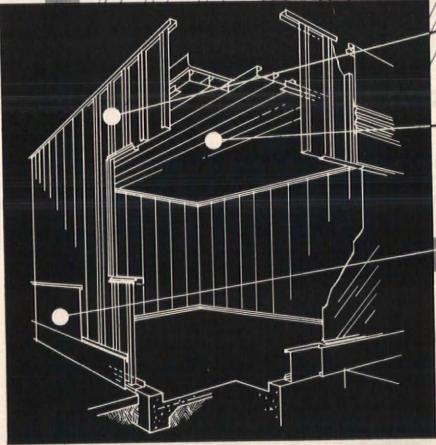
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provides high safety factor over long unsupported areas, smooth ceilings and insulated roof.

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- Maintenance-free industrial buildings

Present your requirements to Avoncraft Engineers.

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The Fixture which Controls Sight and Sound!

New fluorescent lighting fixture has built-in sound-conditioning system . . . easily installed!

Now Sylvania introduces SONO-LUME
... a new concept of sight and sound control!

Basically, Sono-Lume is an attractive fluorescent fixture incorporating principles worked out by Sylvania engineers.

The perforated wings on each side of Sono-Lume fixtures are backed with glass fiber batting. This element has the excellent noise reduction coefficient of 0.85. Thus the fixture serves a double

purpose: (1) It provides high levels of clear, soft, all-over illumination for comfortable seeing. (2) It holds unnecessary noise to low levels for comfortable hearing.

Saves modernization costs! Sylvania Sono-Lume fixtures can be readily installed in any office, conference or consultation room. In instances where sound-proofing and better lighting are separate projects, this new combination fixture keeps costs well within modest budgets. A note on your letter-head will bring you detailed information. Simply address Dept. 4X-1306, at Sylvania.



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THE RECORD REPORTS

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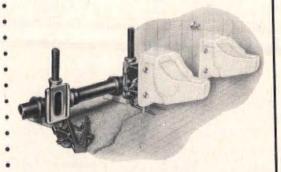
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Locality	Grant Reservation	Preliminary	Planning
INDIANA	Keservation	Approved	Approved
Evansville New Albany	772,730 239,000		133
KENTUCKY			
Covington Lexington	343,840 448,700	8-51	12-52
Louisville Middlesboroug	2,469,320 h 128,030	10-52	
Newport Owensboro	212,100 249,270 389,340 61,950	4-52 9-51	9-53
Paducah Paris	389,340 61,950	10-52	130
MAINE Portland	1	-	
MARYLAND	395,000	5-52	9-53
Baltimore	5,000,000	None	None *
MASSACHUSETTS Boston	7,675,147	9-50	10-52
Brookline Combridge	82,810 450,000	8-51 12-50	6-52
Chelsea Clinton	125,300 81,550	1-54	
Haverhill Lawrence Lowell	214,550	10-52 1-53	
Medford Revere	436,380 80,920	2-54 10-52	
Somerville Woburn	81,900 1,023,164 138,800	10-50 2-51 12-50	12-53 5-52*
Worcester	816,450	10-50	11-52 5-52
MICHIGAN Albion	58,240	2-52	
Battle Creek Detroit	291,480 4,761,096	2-52 9-50 8-52	None*
Hamtramck Port Huron	150,500 753,086 70,140	11-51	3-54
Royal Oak MINNESOTA	70,140		
Duluth Minneapolis	687,540 2,375,000	4-53 3-50	3-54
St. Paul	4,165,739	8-50	3-54 6-53 3-51*
MISSOURI Kansas City	2,490,180	10-50	11-51
St. Joseph St. Louis	5,196,000	4-50	12-51
NEBRASKA Omoha	1,195,320		
NEW HAMPSHIRE	1,175,520		
Dover Laconia	175,000 100,000	12-50	1-52
Manchester Nashua	380,000 315,300 56,910	8-51 11-52	12-53
Portsmouth NEW JERSEY	56,910	11-53	
Atlantic City Bayonne	260,000 251,370 544,110	1-52	
Camden Elizabeth	544,110 409,850	10-52 3-53 2-52	2-54
Jersey City Long Branch	3,028,000 71,750	4-50 12-50	12-53 3-51* 12-53
Newark New Brunswick	5,300,000	6-50	11-51* 10-53
Passaic Paterson	593,550 577,500 452,810	4-51 5-50	1-53
Perth Amboy Plainfield	21,000	4-53	10-51*
Trenton NEW YORK	515,340	9-51	12-53
Albany Binghamton	516,300 253,140	7-50 6-52	11-51
Buffalo New Rochelle	1,574,040	2-52	6-53
New York North	52,000,000	11-50	6-50*
Port Chester	40,140 331,768	6-51	7-52*
Rochester Schenectady	916,440 438,000	12-52 None	8-51
Syracuse Tarrytown	633,300 15,240	9-50 2-53	
Troy Utica Yonkers	15,240 293,820 317,460 753,750	9-51 7-52	4-53
ОНЮ	733,730	10-50	3-52
Cincinnati Cleveland	3,742,830 3,000,000	9-50 9-50	3-52* 8-53
Columbus Hamilton	1,304,170 423,500 495,000	12-50 6-50 6-51	9-53
Springfield Toledo	1,100,610		2-53
Warren Youngstown	1,100,610 163,520 822,780	8-51	
		ied on pag	(e 278)

(Continued on page 278)

^{*} Approved for development



ZURN ENGINEERED carrier systems relieve the wall of all the load! There is a Zurn adjustable wall closet fitting or carrier for every wall-type plumbing fixture—lavatory, toilet, urinal, sink, and fountain.



SHOWN ABOVE is the new wall-type model of the famous Sanistand fixture—a urinal especially designed for women by American-Standard. Made of genuine vitreous china and available in gleaming white and a variety of colors. Fits standard toilet compartments.

Send for these FREE BOOKLETS



AMERICAN-Standard off-the-floor plumbing fixtures

INSTALLED WITH THE



The architectural and structural advantages of wall-type plumbing fixtures for rest rooms are sound . . . and many. Planning such rooms around completely bare floors gives you greater freedom of design. Furthermore, rest room floors that are intact and free of obstructions create a pleasing effect of spaciousness. They look more modern . . . and, because they are easier to keep clean and maintain, they stay modern through the years!

Yes, American-Standard wall-type plumbing fixtures installed with and supported by Zurn engineered carrier systems insure against the untimely obsolescence of the rest rooms you plan. In addition, this time-tested combination permits you to lower ceilings, use less space for walls, and use practically any type of floor construction. Your foresight also saves your client money on construction material, time and labor! For a comprehensive discussion of modern rest room ideas, write for the helpful booklets shown below.

American Radiator & Standard Sanitary Corp.
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J. A. Zurn Mfg. Company,
(Plumbing Division) Erie, Pa.

American-Stan							
Please send	me the 2	booklets	"BETTER	REST	ROOM	GUIDE"	and "YO
CAN BUILD IT	FOR LESS	A NEW	WAY."				
Name					Title		
Company						******	



Contractor who built his own motel says:

"I needed the best materials for my Trav-L-Lodge —that's why I chose Atlas Mortar"

Concrete block painted in pastel colors is featured on both exterior and interior walls at the Dallas (Pa.) Trav-L-Lodge. That's why mortar joints on this job were particularly important. For this special job, general contractor and owner, Donald Hughes, specified Atlas Mortar.

Says Hughes, "Atlas Mortar is excellent for any type of masonry unit. It's smooth under the trowel—lets us get the true, tight joints that we can count on every time. That's why I've used Atlas Mortar for the past four years."

Mr. Hughes' statement is typical

of many we receive from contractors, masons and architects . . . on-the-job reports . . . that praise Atlas Mortar for workability, strength and good appearance.

ATLAS MORTAR has proved itself on large jobs and small and in the laboratory as well. It complies with ASTM and Federal Specifications for masonry cement. For further information write Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

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Smooth as butter—Masons go for the outstanding workability of Atlas Mortar... the way it responds easily to the trowel.



True, tight joints — Atlas Mortar helps assure a strong bond for masonry units . . . satisfactory hardening that produces tight joints.

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about boilers

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Here you will discover a way to judge boilers so you can be <u>sure</u> of the lowest operating cost—highest efficiency—greatest dependability—maximum flexibility—longer boiler life. You will learn how to eliminate confusion in considering boilers . . . know how to compare like examples and not be misled by vague technical claims. You can be SURE you have made the best buy when you know the BIG TRUTH about boilers . . , and you will choose Kewanee boilers because you know you will save on fuel—get greater efficiency—cut repair bills.

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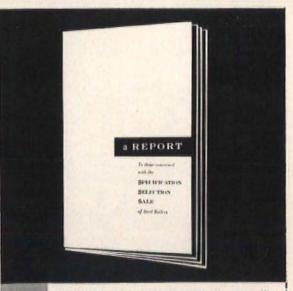
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Company		
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Once you see it, touch it, use it, you'll readily understand why it is fast winning the spontaneous acclaim of builders, architects and home owners all over the country.

What other building material can do so much?

Use it for partitions, patio covers, porches, canopies, awnings, shower doors, cabanas, fences, skylights, overhangs, garages, breezeways, solaria, windbreaks, half-walls, clerestories . . . a hundred more.

Sturdalite can be worked with ordinary hand tools, like wood. It is light and strong, fire and corrosion resistant, requires no maintenance and transmits light, perfectly diffused. It is available in corrugated, flat or arched sheets, in pale green, dark green, blue, salmon, yellow, white, and neutral.

Use Sturdalite . . . prove for yourself its outstanding functional and decorative advantages.

For detailed, idea-packed literature, write to: Wright Manufacturing Co., 5200 Post Oak Road, Houston, Texas.



MADE BY THE MAKERS OF WRIGHT RUBBER TILE AND WRIGHT VINYL TILE

THE RECORD REPORTS

(Continued from page 274)

Locality	Capital Grant Reservation	Preliminary Planning Approved	Final Planning Approved
PENNSYLVANIA			
Allegheny County Beaver County	1 705 150		
Beaver County	385,350	100	The Value
Beaver Falls Bethlehem	1,795,150 385,350 181,200 302,820 195,720	None	6-50
Braddock	195,720	11-50	
Carnegie Chester	85,540 304,010 238,950	Nana	2-52
Clairton	238,950	None 2-51	2-32
Delaware County	263.270	9-52	12-53
Duquesne Easton	263,270 186,620	9-52 11-53 11-50	12.00
East Pittsburgh	203,490 28,420 866,250 176,540 511,210 538,300 148,400 106,890 33,320 10,000,000 6,100,000	11-30	
Harrisburg Homestead	866,250	3-51	8-52
Johnstown	511,210	6-51	12-53
McKeesport McKees Rocks	538,300 148,400	1-52 11-50	1-53
Munhali	106,890	11550	1-55
New Brighton Philadelphia	10,000,000	11-51	6-50*
Pittsburgh Rankin		None	6-50* 9-51 6-53
Rochester	75,880 33,040	None	0-33
Scranton Sharon	957,390	12-53	
Sharpsburg	77,770	10000	
Turtle Creek	75,880 33,040 957,390 146,020 77,770 93,660 65,450	2-54 4-51	3-53
West Homestead			
York	31,220 520,000	10-50	3-52
RHODE ISLAND		- 11	
Newport Providence	221,550 1,165,570	7-50 4-50	10-52 4-53*
The state of the s	1,100,070	4-50	4-53*
SOUTH			
Columbia	499,380	5-52	
TENNESSEE	The same of		
Clarksville Johnson City	35,700 192,290 1,025,710	10-53 3-51	4-52
Knoxville	1,025,710	4-50	4-52 8-51
Lewisburg Memphis	35,700	9-53 8-50	
Murfreesboro Nashville	319,059	1-51	12-51*
Pulaski	63,490	None	4-30+
Tullahoma Union City	2,942,660 319,059 5,207,200 63,490 51,100 268,300	12-53 10-52	5-53*
Waverly	18,830	10.01	0.00
VIRGINIA	1200		walk.
Alexandria Bristol	342,750 822,320	11-50 1-51 9-52	5-52 1-52* 11-53
Donville	822,320 333,480	9-52	11-53
Newport News Norfolk	280,000 3,799,801 1,050,600	4-50 1-54	10-53
Portsmouth Richmond	1,050,600	1-54 12-50 10-50	3-52
Roanoke	2,250,000 475,580	8-51	1-53
WEST VIRGINIA			
Charleston Clay County	419,860	12-52	
Fayette County	25,690 76,650		
Kanawha			
County Lincoln County Logan County	773,000 29,260 271,390		
		9	
County	257,110		
County Monroe County Summers County	257,110 22,680 38,290 132,860		
Wayne County	132,860		
WISCONSIN	2 400 440	2 51	10.55
Milwaukee	2,498,440	2-51	10-52

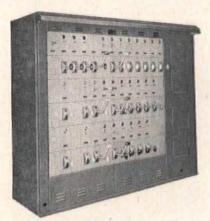
PROJECTS WITH APPROVED GRANTS

Locality and Project Name	Project Grant Approved	†Demo- lition Started	† Land Disposition Started
ALABAMA	\$2,630,103		
Birmingham Medical Center Mobile Broad St. —	858,780		
Beauregard Montgomery	967,765		
North Mont- gomery	803,558		

(Continued on page 282)

^{*} Approved for development † Data as of Dec. 31, 1953

THERE IS ONLY ONE LINE OF CUSTOM-ENGINEERED STAGE LIGHTING CONTROL



CLASS 3 "MAGNALITE" STAGEBOARD

Sisters of Mercy—Provincial House, Omaha, Nebraska
Leo A. Day, Architects & Engineers, Omaha, Nebraska
Evans Electric Company, Contractors, Omaha, Nebraska



CLASS 1 STAGEBOARD
Ingalls High School, Atchinson, Kansas
Joseph W. Radotinsky, Architect, Kansas City, Missouri
Paoli E. C. Massaglia, Engineer, Kansas City, Missouri
Beadnall Electric, Contractors, St. Joseph, Missouri

When Metropolitan LUMI-TRON systems are specified there is no chance of dissatisfaction.

Every detail is attended to, from project need and design to quality control.

Three classes of lighting control are available:

- Class 1 Auto-transformer dimmers, manually operated. Remote control pre-set switching.
- Class 2—Auto-transformer dimmers, motor positioned. Remote control switching and dimming. Scene intensity presetting from 1 to 5 scenes.
- Class 3—Magnalite magnetic-amplifier dimmers. Complete remote control. Scene intensity pre-setting from 1 to 20 scenes.

In each class there is a design to fit every application and budget. A point too, LUMI-TRON Stageboards are less expensive to install. Standardized component parts, flexible in arrangement, in each class of control permit unlimited design and function.

Assistance in laying out lighting control for your project is offered the architect-engineer with no obligation.

Specify Metropolitan for BETTER LIGHT THROUGH BETTER CONTROL.

FREE 24 PAGE HANDBOOK

Write for this new comprehensive,
"Handbook on Modern Stage Lighting Control"
on your Company letterhead.







METROPOLITAN ELECTRIC
MANUFACTURING CO.

General Offices 2252 Steinway Street Long Island City 5, N. Y.



SWITCHBOARDS . PANELBOARDS . KNIFE SWITCHES . SAFETY APPARATUS . WIRING DEVICES . FUSES

The Best **Casement Windows** have Getty **Casement Operators**

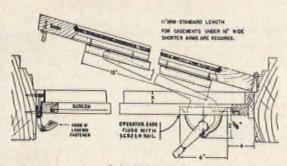
Here the facts speak for themselves: today Getty Operators are used on more casement windows than all other makes combined.

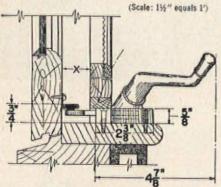
Getty Casement Operators have a record for long, trouble-free performance in every type of building: commercial, institutional, residential. Don't take chances with lesser known brands. Whenever your plans call for casement windows, specify Getty Operators to make sure you get the best.

For Wood Casements



No. 4703W Specially recommended for medium or large size casements, or where fine hardware is preferred. Features exclusive Getty Internal Gear drive for greater power and longer life.





Installation of 4703W with use of a screen seat. Operator may also be installed with screen rail notched out to fit over operator housing.

Data for installation of righthand operator 4703W on wood casement equipped with butt hinges-

DIMENSION A

Minimum 21/4" with butt hinges. Minimum 4" with extension hinges.

DIMENSION X

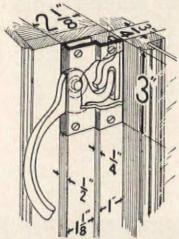
Minimum 1" with butt or extension hinges Maximum 4" with butt hinges. Maximum 2%" with extension

NOTE. X must be 1" when Locking Fastener 4608W is used.

LOCKING FASTENER 4608W



Locking Fastener 4608W is especially designed for use with screened wood casement windows, in combination with Operator 4703W. If a straight handle is preferred, order 4608W-2. Locks and unlocks the window without disturbing the screen. Made of solid bronze or brass, in polished or dull finish. Also available in standard lacquered and plated finishes.



NOTE. Screen stop details must conform to dimensions

Screen stop must be cut away 3" to accommodate housing of locking fastener.

Dimensions shown are applicable to installation of Locking Fastener 4608W with Operator 4703W.

Also available, No. 4715 which may be used in place of the 4703W. This is a low-cost, angle-drive operator ideal for new installations, or for casements now operated by stay bars or other obsolete hardware. Neat in appearance-easy to install.



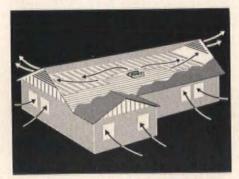


3348 NORTH 10th STREET . PHILADELPHIA 40, PA.

Canadian representatives: A. N. Ormsby Co., 23 Scott St., Toronto



Hunter Attic Fan cools the entire house at lowest cost



Home buyers who want cool comfort at lowest cost are "sold on" the Hunter Attic Fan. Initial cost is low, operating expense is only a few cents a night, and there is no maintenance.

The Hunter Attic Fan's method of cooling a house is simple (see drawing at left). It drives out hot, stagnant air through the attic and creates a strong suction which pulls in fresh, cool air from outdoors.

This compact cooling unit, com-

plete with automatic ceiling shutter, is easily installed in any home. It requires only 18" attic clearance, so is ideal for low-pitched roofs. Certified air deliveries range from 5000 to 16000 cfm-for any home size and any climate.

You can depend on the same smooth, quiet operation that has made Hunter Fans famous for 67 years. Fan unit is guaranteed for 5 years, ceiling shutter and motor for 1 year.



For complete specifications, write

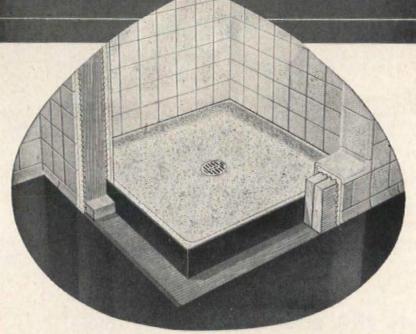
HUNTER FAN AND VENTILATING COMPANY

396 S. Front St., Memphis 2, Tenn.

SEE OUR CATALOG IN SWEET'S

NOW BUILD BETTER SHOWERS FOR LESS with FIAT PreCast Receptors!

The ideal floor when shower walls are made of plaster, marble or tile of any kind—metal, plastic, ceramic!



Cut cost, save time—and eliminate one sub-contract by using FIAT
PreCast Receptors. When you plan showers with plastic or metal tile
walls you save labor—speed completion—by specifying a plumber-installed
FIAT receptor. You will get a better shower floor . . . attractive . . . one-piece
. . . permanently leakproof. There's no lead pan, no multi-layer
construction—nothing that can be affected by building settlement. It's the
modern, money-saving way to better shower construction.

SEND FOR FREE FIAT MANUAL-

COMPARES methods of shower floor construction
ILLUSTRATES receptor applications with various walls
PROVES many PreCast Receptor advantages



FIAT METAL MANUFACTURING COMPANY
9301 W. Belmont Ave. • Franklin Park, Illinois — Dept. C

Please send me your new manual on shower floor construction as soon as it's off the press.

Name____

City____State___

THE RECORD REPORTS

(Continued from page 278)

	Project	† Demo-	†Land
Locality and Project Name	Grant Approved	lition Started	Disposition Started
ARKANSAS Little Rock	980,385		
Central Area	980,385	4	1
CALIFORNIA San Francisco	6,346,000		
Diamond Heights Western Addi-	334,000		
tion Proj.	6,012,000	90	
DISTRICT OF COLUMBIA Washington Southwest Proj.	6,385,186		
Area B	6,385,186		
ILLINOIS Cairo	10,930,825		
Area No. 1 Chicago	0 174 075	4	
Lake Meadows West Side Industrial	9,176,075		,
MARYLAND	4,489,668		
Baltimore Waverly	1,115,807	,	1
Broadway	3,373,861	1	4
MASSACHUSETTS Somerville	1,023,164		
Linwood-Joy MICHIGAN	4,761,096		
Detroit Gratiot	4,761,096	,	,
MINNESOTA	4,165,739		
Eastern Project Western Project	4,165,739 1,865,376 2,300,363		
MISSOURI	1,179,631		
Kansas City Northside Area	1,179,631		
NEW JERSEY Jersey City	\$8,749,819		
Gregory Site St. Johns Site	1,509,917 1,517,834	4	
Branch Brook	2,398,177		
Park Broad Street Perth Amboy	2,871,081		
Willocks Project Forbesdale	326,293 126,517	The same	
NEW YORK New York	37,969,105		
Morningside Corlears Hook	3,026,935	,	1
Harlem North Harlem	3,766,024 2,729,258 10,703,084	*	****
West Park Fort Greene	2./34.603	'.	,
Columbus Circle Pratt Institute Port Chester	5,919,523 5,737,100	*	
Project No. 1	331,768		
OHIO Cincinnati	2,473,171		
Laurel	2,473,171		
PENNSYLVANIA Philodelphia East Poplar	5,709,625		
Unit #2 Unit #3	274,697 794,881	1	1
Southwest Temple	4,640,047		
RHODE ISLAND	901,738		
Providence Point Street Willard Center	433,738	D B	
#1	468,000		
TENNESSEE Murfreesboro	5,794,460		
The Bottoms Nashville	319,059	,	
Capitol Hill Union City Black Bottom	5,207,200		
VIRGINIA	4,622,121		
Bristol Sullins Street	822,320	1	
Norfolk Redevelopment			
Proj. #1	3,799,801	4	1
	1000		

† Data as of Dec. 31, 1953



An open-arched arcade on the street serves as a protected entrance to the Easton Federal Savings and Loan Association building, shielding an interior wall of glass, Architect: Hugh Moore, Jr., Easton, Pa., General Contractor: Collins and Maxwell, Inc., Easton, Pa.

OPEN-WEB JOISTS SIMPLIFIED INSTALLATION OF DUCTWORK IN EASTON, PA., BANK

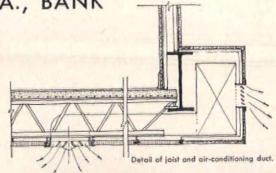
The new home of the Easton Federal Savings and Loan Association in Easton, Pa., is a building of contemporary design, modern in every detail, yet reminiscent of the architectural style of some of the city's earlier buildings.

The architect employed brick, flagstone, wrought iron and marble to give a warm feeling, at the same time using modern lines and large areas of glass for utility. The building is completely air-conditioned.

A landscaped driveway encircles the building, leading to a modern drive-up window where customers can be served without leaving their cars. The window is constructed of stainless steel and bullet-proof glass.

Inside, a spacious main-floor lobby rises seventeen feet, with a full height, 9-foot-wide window in the north wall. Surrounding the lobby on the other three sides are executive areas, work spaces and a waiting room. The ceilings in these areas are of conventional room height, lending a quiet, comfortable atmosphere. Bethlehem Open-Web Steel Joists were used in this ceiling, resting on the bottom flange of a structural member and terminating at the raised well of the lobby. This construction allowed for air-conditioning ducts to feed into the space between the joists at the ends (see detail).

Besides simplifying ductwork and positioning of the recessed lighting troughs, Bethlehem Open-Web Joists were used as part of the fire-resistant construction of the building. The joists were easy to install, requiring only field welding to secure them firmly in place. They reached the job site completely fabricated and clearly marked.





Glass-enclosed entrance showing main lobby.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast
Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM OPEN-WEB STEEL JOISTS



Even a firefly can't burn his way in!

This new **Fiberglas** Screening is unfair to us bugs!

No rust holes!

No breaks or bulges!

Our six-legged friends are outside for good the day you put up window screens made of new Fiberglas* Screening. This miracle screening has everything you want in a screen. It has the strength and toughness to take rough treatment without breaking or bulging. Completely rustproof-can never stain sidewalls or sills. Salt air won't corrode it, a lighted cigarette can't burn through! It's easy to install, smooth-edged . . . doesn't ravel. Yet Fiberglas Screening costs far less in the long run than any other kind. Write for A.I.A. folder.



Owens-Corning Fiberglas Corporation, Industrial Textile Division • 598 Madison Avenue, New York 22, N. Y.

*Fiberglas is the trade mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with fibers of glass.

Note to ARCHITECTS who are preventing emergencies

before they happen

In all parts of this country leading architects are preventing later emergencies by urging their clients to install the best possible materials. In the plumbing drainage system, and in the house sewer, this means cast iron soil pipe and fittings. The advertisement reproduced at the right is one of a series placed in consumer magazines by the Institute in the interest of architects who are seeking constantly to raise the standards of home sanitation.



Suppose YOUR bathroom goes out of service

Between your house and the street is a buried pipe line - your house sewer. If that fails, so does your bathroom. During the war cast iron, the time-proved material for soil pipe, was hard to get. Non-metallic substitutes were used, and frequently they fail through crushing, settling, root-penetration. Note the picture of non-metallic pipe crushed out of shape by soil settling. Today there is plenty of cast iron, and you do not have to use any substitute. Read the illustrated story of plumbing drainage in the booklet offered below. Prevent the failure of your home sanitation. If you build a new house or replace a house sewer, always insist on



PERMANENT CAST IRON SOIL PIPE AND FITTINGS



CAST IRON SOIL PIPE INSTITUTE

- 1627 K Street, N.W., Washington 6, D. C. To help us prevent bathroom failure, send your 16-page booklet on Plumbing Drainage.
- Club is interested in seeing your sound movie "Permanent Investment".

No. & Street

USE PERMANENT CAST IRON SOIL PIPE AND FITTINGS

Take Advantage of These Added Helps for ARCHITECTS

You will want to show the Institute's sound movie "Permanent Investment." This 20minute educational picture acquaints the public with the importance of hidden plumbing, the part of the system which is so vital to health, comfort and safety. For information on the film and a copy of the consumer folder "What You Should Know About Plumbing Drainage," use the handy coupon.

	film, free.
Name	Zone
Address	



"Glass Wall" Installation Dramatizes Advantages of Kinnear Rolling Doors



Heavily Galvanized Doubly Protected

Kinnear Steel Rolling Doors are heavily galvanized (1.25 oz. of zinc per sq. foot, as per ASTM standards) to provide a lasting weather resistance. In addition Kinnear Paint Bond, a special phosphate application, provides for easy, thorough paint coverage and lasting paint adhesion. Light from a huge "glass wall" floods into the new engineering building at Howard University, Washington, D.C., shown above.

The Kinnear Rolling Door centered in this glass wall can be operated or left open without blocking off a single inch of glass area.

The rugged curtain of interlocking steel slats — originated by Kinnear — coils compactly above the opening. All surrounding floor, wall and ceiling space remains clear and usable all the time.

Notice also how the straight lines of the Kinnear curtain add to the modern appeal of this building.

In addition to this space-saving "selfcontained action", Kinnear Steel Rolling Doors offer durable, low cost, all-metal protection against intruders, vandals, wind, weather, and fire.

Kinnear Rolling Doors are built in any size, with manual or motor operation. Write for full details.

The KINNEAR Manufacturing Company

FACTORIES:

1860-80 Fields Avenue Columbus 16, Ohio 1742 Yosemite Ave. San Francisco 24, Calif. Offices and Agents in All Principal Cities



THE RECORD REPORTS

WASHINGTON

(Continued from page 38)

(Title I) programs was over by May 1 and the Committee settled down to an effort to rewrite the Administration's housing bill so as to eliminate the "loopholes" which had made abuses possible. Senator Homer Capehart (R-Md.), committee chairman, hoped the rewritten bill would reach the floor of the Senate by June 1. Senator Capehart promised the second phase of his Committee's probe—"a real, honest-to-goodness, 100 per cent investigation of all irregularities and violations of the law"—would get under way immediately after the housing bill was out of the way.

The initial phase of the investigation produced testimony

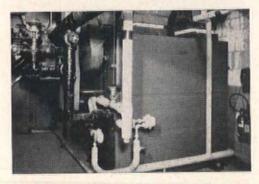
- (1) that 1149 corporations involved in FHA insured rental housing distributed to stockholders over \$65 million as the fruit of over-appraisals, resulting in a tax loss to the government of more than \$28 million because the corporations paid capital gains taxes rather than income taxes.
- (2) that a list of some 3500 firms throughout the country had been "black-listed" by FHA for improper conduct under the home loan program (through Nov. 30, 1953. More names were to be added to bring the list up to date).
- (3) that loose administrative procedures, which appeared to have contributed most to the "irregularities and abuses" under investigation, were in some measure at least due to Congressional refusal to appropriate funds to allow sufficient personnel for adequate policing of mortgages by FHA.
- (4) that some FHA officials were guilty of fraudulent activities, the nature of which was not clearly spelled out in the early allegations. Housing Administrator Albert M. Cole said, however, that "relatively few" of FHA's 5065 employes were involved.

From the long procession of witnesses in the building and financing fields came repeated reminders to the committee that the possibility of "windfalls" was inherent in the 608 program because the enabling legislation encouraged FHA to act as promoter as well as underwriter — a situation the financiers pointed out was hardly conducive to the strict maintenance of sound underwriting principles. Testimony generally favored changing

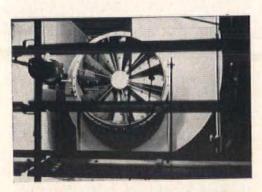
(Continued on page 290)



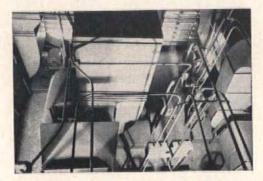
Basement — Sirocco Fans circulate fresh, dehumidified air. Total rating of American Blower equipment in building is 770,378 cfm. Gross floor area is 503,000 sq. ft.



2nd floor — The Prudential Building uses 10 American Blower Air Conditioners like this one in its mammoth air-circulating, cooling and dehumidifying installation.



5th floor — One of 50 American Blower Supply Fans that furnish air to various offices. Other equipment includes: American Blower Heating & Cooling Coils, Utility Sets.



20th floor — A group of four powerful Sirocco Exhaust Fans in a louvered section of the Prudential Building's 20th floor help get rid of stale air from the many offices.



American Blower Equipment Keeps Prudential Comfortable

The completely air-conditioned 21-story Southwestern Home Office of the Prudential Insurance Company of America in Houston, Texas, is a credit to the company and to the area it serves.

American Blower fans, heating and cooling coils, air-conditioning units, and heating and ventilating units, all serve to condition and circulate air to the occupied spaces of the building in accordance with the carefully thought out plans of the consulting engineers, Dale S. Cooper & Associates.

Why was American Blower selected?

W. A. Harbaugh of Straus-Frank Co., mechanical contractors, states: "I can depend on American Blower service and the performance of their equipment—and that is worth money to me."

You, too, can depend on American Blower. If you have an air-handling problem, call your nearest American Blower or Canadian Sirocco Branch Office. American Blower engineers have a complete knowledge of the air cycle, and can supply the equipment to meet the special problems of many industries.

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO

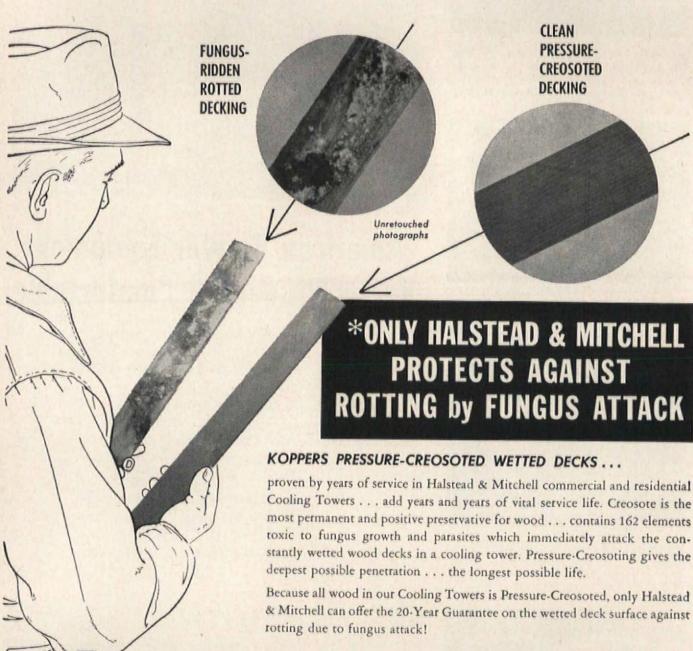
Division of American Radiator & Standard Sanitary Corporation



Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS • SUNBEAM AIR CONDITIONERS

WHEN YOU SPECIFY COOLING TOWERS

.....specify *20-Year Guarantee!



2 thru 100 Tons

Built like a Battleship

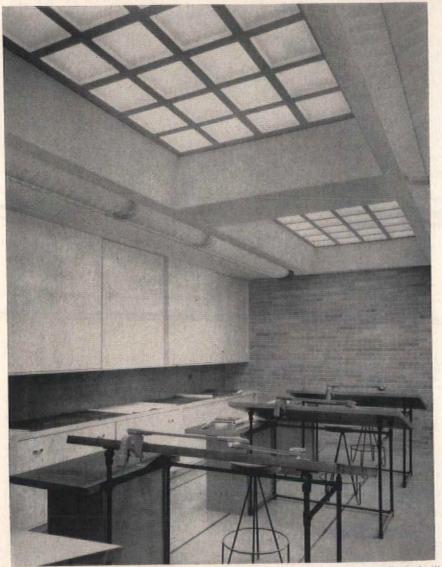
Sheet-Steel Cabinets,
5-times protected
Stainless Steel Fans and Shafts
Weather Shielding
Everdur Bolts for ease of
disassembly at any time.

Write for Catalogs



OFFICES: Bessemer Building, Pittsburgh 22, Pa.

Here at low cost is filtered, natural daylight from overhead



Skytrol panels installed in the offices of W. Harold Tanner & Associates, Architects, Villa Park, III.



PITTSBURGH

ALSO PC GLASS BLOCKS AND FOAMGLAS®

*T. M. Reg. Applied For.

with PC SKYTROL Blocks

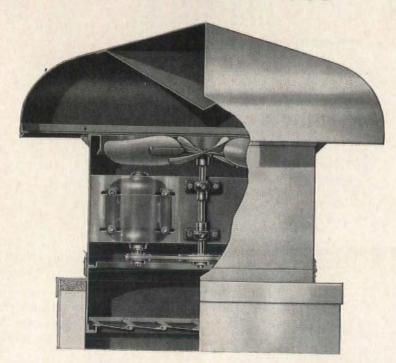
Toplighting is the easiest way to bring daylight into low, one-story buildings where lighting of the inner areas is a problem. And of all the toplighting methods, Skytrol blocks stand alone in their ability to give the highest quality daylighting, good insulation value and a trouble-free, low maintenance installation.

Skytrol blocks are a *flexible* building unit, giving the architect freedom to design practical toplighting panels of virtually any size. The panels can be flat or curved and are not limited by special orientation requirements. The blocks are bonded into a weathertight, reinforced concrete panel — the same method that has been used with success for many years in northern Europe.

But one of the best things about Skytrol panels is their cost. Actual installed costs are running between \$4.50 and \$6.50 per square foot of panel area. If you're considering top-lighting, you'll do well to investigate the Skytrol method. Compared with methods giving comparable results, you'll find Skytrol out-performs, yet costs less.

Consult our section under "Skylights" in Sweet's, or write for more information. Pittsburgh Corning Corporation, Dept. C-64, One Gateway Center, Pittsburgh 22, Pa.

HIGH EFFICIENCY LARGE CAPACITY QUIET OPERATION INCONSPICUOUS IN USE



THE NEW **BURT LOW TYPE** FAN VENTILATOR

This versatile Burt Ventilator is modern in engineering and design. Its quiet power-driven fan performs with equal efficiency to exhaust heat, smoke and fumes, or to supply fresh air. Low in height, the Burt Low Type meets architectural demands for an inconspicuous roof ventilator yet provides high efficiency and high capacity. Easy to install and service, the Low Type is available with fans from 12" to 60" in diameter—direct motor driven or V-belt drive. See Sweet's for further data or write Burt for Bulletin SPV-16.

FAN & GRAVITY VENTILATORS - LOUVERS - SHEET METAL SPECIALTIES

UT Manufacturing Company

MEMBER POWER FAN MANUFACTURERS ASSOCIATION

THE RECORD REPORTS

WASHINGTON

(Continued from page 286)

the appraisal basis for governmentbacked housing loans to either a percentage of the actual cost or a percentage of the "economic value."

Administrative actions pointed toward "straightening up" included:

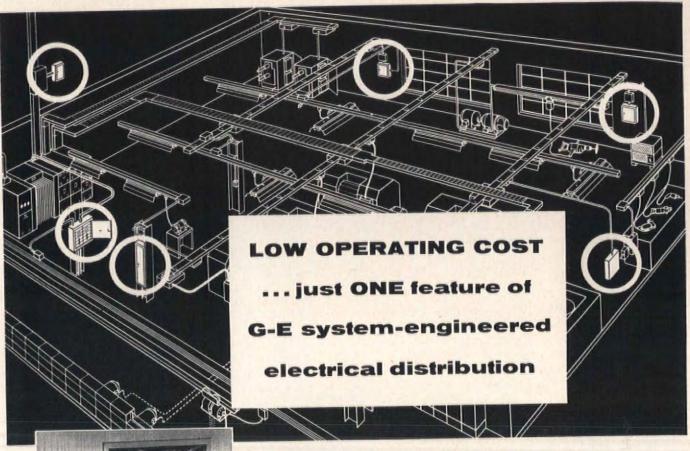
- (1) Two advisory panels were named by Acting FHA Commissioner Norman P. Mason to recommend program and legislative improvements. First Vice President Norman J. Schlossman of the American Institute of Architects was named to the industry group.
- (2) Housing Administrator Cole got Congressional approval of funds to set up a permanent division within the Housing and Home Finance Agency to handle investigations and compliance matters
- (3) Commissioner Mason named a special assistant to the Commissioner charged with directing a new information program founded on the premise that the borrower, the banker and the builder all have a right to know what FHA is doing at all times: FHA's "iron curtain" policy on release of information had long been a target of newsmen. W. Herbert Welch, 38, former West Virginia editor and publisher and recently executive director of the President's Advisory Committee on Housing Policies and Programs, was named to the new

As for public reaction, early indications were that the FHA "scandals" had by no means dampened the enthusiasm of either borrowers or lenders for the FHA loan program. FHA loan applications were seasonally up in April (about 1000 over March) and a survey of 25 major banks across the country early last month revealed no change in lending policies, though some banks noted they were investigating loans more closely before approving them.

MILITARY HOUSING MAY FACE A SENATE PROBE

Senator Francis Case (R-S.D.) entered the housing investigation arena when, as chairman of the Senate Armed Services subcommittee on real estate and construction, he asked the military for detailed information regarding its housing programs.

(Continued on page 294)



A hodgepodge of circuits and controls means power losses and costly maintenance. Eliminate this needless expense with a complete *integrated* General Electric secondary system. Other major advantages: increased safety, ease of relocating machinery and equipment, and reserve power capacity for your future needs.

For details write General Electric Company, Distribution Assemblies Department, Plainville, Connecticut.

G-E Lighting and Distribution Panelboards are available in a very broad range of fusible and circuit breaker types. G-E engineers can help you double the value of your investment by selection of the correct panelboard, by provision of capacity for future needs, and location for maximum efficiency in the complete system.

G-E Motor Control Centers, with instantly accessible all-purpose plug-in units, increase operating efficiency today and assure you of continuing ability to meet tomorrow's requirements.



G-E Flex-APower copper or aluminum busway systems actually cost no more installed than less versatile conductors. They can be altered, extended, dismantled and re-installed quickly and easily with complete reuse of all units.



From power line to production line, make it G.E. all the way.



where flooding sunlight sets new tasks for piping

LEVER HOUSE

shades operating costs with JENKINS VALVES

Architects: SKIDMORE, OWINGS AND MERRILL Mechanical Engineers: JAROS, BAUM AND BOLLES General Contractors: GEORGE A. FULLER CO. Heating and Air Conditioning Contractors: KERBY SAUNDERS, INC. Plumbing Contractor: GILLMAN-ROUS-PESCE CORP.

Where such extensive use of glass permits direct penetration of sun heat along with sunlight, interior comfort is largely dependent upon efficient, year-round air conditioning. At Lever House, for example, a high velocity duct system, served by two steam turbine centrifugal compressors, supplies 700 tons of refrigeration for three separate air-conditioning zones. Individual window units cool or heat the periphery of each floor as required. Air from such areas re-enters the ducts, is blended and discharged through centrally located ceiling diffusers, keeping temperatures in balance over the entire floor.

The serious consequences of failures and interruption of such facilities required careful selection of all components on the basis of proved dependability, safety, and long-range maintenance economy. Jenkins Valves were chosen after thorough study of performance records in all types of service.

Jenkins Valves are being specified for more and more of the news-making structures that are pacing the advance in architectural design. It is a repeated expression of confidence in their extra measure of efficiency and economy.

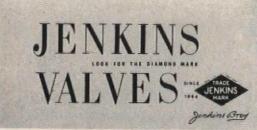
Despite this extra value, you pay no more for Jenkins Valves. For new installations, for all replacements, let the Jenkins Diamond be your guide to lasting valve economy. Jenkins Bros., 100 Park Ave., New York 17.



A slim, gracefully proportioned tower of green-tinted glass and polished stainless steel, Lever House provides efficient, comfortable working quarters for more than 1200 employees of the world-famed Lever Brothers Company and its three divisions. It has won wide acclaim as a major contribution to progress in the design of modern commercial structures.



Among nearly 3000 Jenkins Valves, controlling all lines, are these Iron Body Gate Valves on steam condensate lines of hot water system.



SOLD THROUGH LEADING INDUSTRIAL DISTRIBUTORS EVERYWHERE

PETERSON HORIZONTAL ALUMINUM WINDOWS

The Windows That Have Won The Women!



WHY WOMEN FAVOR PETERSON WINDOWS

Make window washing a lark. Sash (1) lifts up and out into room for quick, easy cleaning.

Save wear and tear on husbands. Nonrusting aluminum screens (2) never require painting or removal. Storms (3) stay up, too, are self-storing all year round.

Sturdy, hollow-type aluminum framing (4) bespeaks strength, security, permanence, so important to a woman's peace of mind.

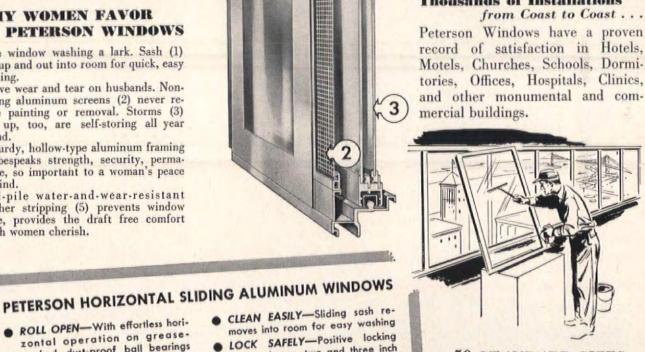
Hi-pile water-and-wear-resistant weather stripping (5) prevents window rattle, provides the draft free comfort which women cherish.

WHETHER intuition or an innate sense of practical value is responsible, more and more women are insisting on Peterson windows for their new homes. So are firms erecting business buildings.

You will indicate clearly that you are abreast of this trend if you recommend Peterson windows for your clients. They're designed to contribute the most in the way of appearance, comfort and convenience to new structures. The contribution they make is a lasting one-insuring highest continuing value through the vears.

Thousands of Installations

Peterson Windows have a proven record of satisfaction in Hotels, Motels, Churches, Schools, Dormitories, Offices, Hospitals, Clinics, and other monumental and commercial buildings.



- ROLL OPEN-With effortless horizontal operation on grease-packed, dust-proof ball bearings
- APPEAL ARCHITECTURALLY-Enhance all design motifs
- SAVE MAINTENANCE DOLLARS-Require no paint; won't rust, swell, warp, stick or rot
- INCORPORATE ADVANCED DE-SIGN—Eliminate putty, sash balances, cranks, projecting hinges
- in closed, one, two and three inch open positions
- EXCLUDE WEATHER-Hi-pile, water-and-wear-resistant weather stripping cuts heating and air conditioning costs
- COME COMPLETE—Built-in storms and screens with balanced sight lines.

50 STANDARD SIZES

All designs and sizes popularly specified

for residential, commercial and monu-mental building supplied promptly. Standard windows up to 6 feet high by 10 feet wide are available. Special sizes can be obtained at only slightly higher

Constructed of sturdy aluminum ex-trusions—63S-T5 Alloy, minimum thick-ness .062"—engineered for maximum strength.

SEE 16a/Pe IN SWEET'S CATALOG or WRITE FOR COMPLETE DETAILS.

A limited number of exclusive dealerships with protected territories are available. Peterson Window Corporation invites inquiries from reputable dealers.



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293



The Hamilton Compo Stack solves that
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double library capacity. Hamilton's popular
Continuous Upright Stacks and Hamilton-Standard
Stacks are also available in handsome, durable
steel with easily adjustable shelves and a full

range of efficiency features.

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Hamilton

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Hamilton Manufacturing Company, Two Rivers, Wisconsin

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Compo Stack with

lock-equipped

NAME	POSITION	
FIRM		
ADDRESS		
CITY	STATE	

THE RECORD REPORTS

WASHINGTON

(Continued from page 290)

It was not known right away just what importance the Case request would have; decision on a full-scale probe by his unit awaited the submission of the military reply.

It was clear, however, that if the Senator and his committee members felt that the Army, Navy and Air Force data warranted a close look at military housing activities, another investigation was to be added to the growing list.

Senator Case asked for (1) a list of all Wherry Act housing projects accomplished or under way; (2) a description of each project, including number of units, size of each, etc.; (3) contribution made by the servicemen assigned; (4) rentals applicable for the different sized units; (5) name of contracting firm and its officers who constructed the project or had the insured loans; (6) the name of the operating organization and its officers, particularly to determine whether or not a second corporation is handling the operation and management and whether or not there is an interlocking stockholder or director interest; and (7) the amount of the insured FHA loan and any figures of the actual cost of construction.

The Case letter to the military noted that reports on a certain unidentified project told of a loan for \$3.1 million to a contractor who accomplished the housing and turned it over to a new corporation to operate after an expenditure of only \$995,000. The new corporation allegedly charged rentals on a scale to liquidate the larger figure.

EARLY TESTIMONY FAVORS "FHA" PLAN ON HOSPITALS

Hearings opened last month on the "FHA" insurance plan for hospital construction. This proposal, made formally in a bill by Rep. Charles A. Wolverton (R-N. J.), would permit FHA-type mortgage insurance covering hospitals and medical facilities to be used in connection with voluntary prepayment health plans. Early testimony generally favored the plan.

Dr. Robert E. Tothenberg, chairman of the medical group council, Health Insurance Plan, New York City, cited

(Continued on page 298)

How CRANE specialized plumbing helps modern hospital planning

Modern hospital equipment of all kinds is designed either to increase the effectiveness of hospital staffs or add to the comfort of patients, or both.

Crane specialized plumbing fixtures are an outstanding example of this. In size, shape and materials, Crane hospital fixtures are carefully designed for specific hospital uses. In fact, Crane offers the most complete line of such equipment available.



One of a growing number of modern, Craneequipped hospitals is the impressive new Kaiser Foundation Medical Center.



New Kaiser Foundation Medical Center in Los Angeles takes advantage of the warm climate with outdoor balconies that serve as corridors for visitors, while indoor corridors are for sole use of hospital staff.

Other features with more general practicability for any climate include many individual nurse's stations (instead of a few large ones) on each floor... and specialized hospital plumbing fixtures by Crane.

As in domestic plumbing, Crane hospital equipment is

not only superior in itself . . . but enjoys a superior reputation as well.

That's why, in either hospital or domestic architecture, your clients are pleased when you specify Crane.

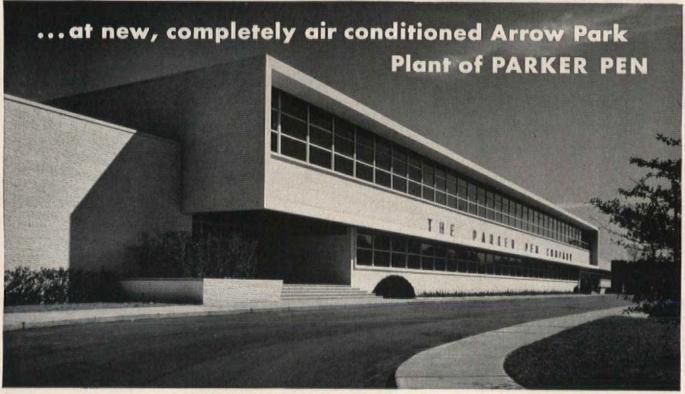
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"UNI-FLO" ENGINEERED

Air Distribution



New \$4,500,000 home of Parker Pen Co., Janesville, Wis.

Architect: John J. Flad and Associates, Madison, Wis.
Mechanical Engineers: Beling Engineering Consultants, Moline, III.

Air Conditioning Contractor: Hyland, Hall & Company, Madison, Wis. General Contractor: T. S. Willis, Janesville, Wis.



Venturi-Flo Diffusers in the ceiling, Uni-Flo Return Grilles in the sidewalls provide fresh, conditioned air in the cafeteria.



Office staff keeps alert and efficient, works the year 'round in a comfortable, draft-free atmosphere made possible by the soundly engineered air distribution system.

While planning to invest many thousands of dollars in heating and cooling equipment, the makers of famous Parker "51" Pens agreed it would be folly to buy less than the best air distribution devices for their new 212,500 square foot plant in Janesville, Wisconsin. So, accepting the recommendations of the architect, engineer, and contractor, specifications were written for Barber-Colman diffusers and grilles, complete with latest accessories for most efficient air handling.

Two hundred and seventy-five Venturi-Flo Ceiling Diffusers, complete with Volume Controls and Deflectrols, are installed strategically in the offices and production areas. Three hundred and three Uni-Flo Return Grilles with removable cores and Volume Controls have been placed in the sidewalls. Air Turns in the supply ducts, plus double deflection cores mounted alongside fluorescent light units completed the job. The company is assured of the finest air distribution system known today—units which harmonize gracefully with the modern surroundings—units which have proved records for efficient diffusion, quiet operation, easily adjustable deflection and volume control, simplified servicing, and long-life, rigid construction.

You may find it equally wise to protect proposed investments in air conditioning equipment. Call your nearby Field Office for expert engineering assistance, or write us for your free copy of general bulletin F-4471-2.

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Automatic Controls • Air Distribution Products • Industrial Instruments

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Products • Metal Cutting Tools • Machine Tools • Textile Machinery

NEW

1/2" Tuf-flex Tempered
Plate Glass Doors

How do they differ from the widely used ¾" Tuf-flex Doors?

1. LIGHTER WEIGHT. For example, for a 3' x 7' opening, the glass in this new ½" door weighs about 131 pounds, compared with 197 pounds for the ¾" door commonly used in the past. That makes it:

EASIER TO HANDLE—EASIER TO INSTALL— EASIER TO OPERATE

2. LOWER COST. Generally, list prices on the new ½" doors, complete with fittings, are comparably less than ¾" doors of the same size. Many types of framed doors, which fail to carry out the transparency so desired in modern entrances today, are about the same price. This lower cost will enable many more building owners to add attractiveness and appeal of Tuf-flex Doors to their entrances.

How are they the same as the 34" door?

- TOUGH. Like the ³/₄" door used so successfully in thousands of buildings, these tempered doors are 3 to 5 times as strong as regular plate glass of the same thickness. Extensive laboratory and application tests have proved the strength of the ¹/₂" Tuf-flex Door.
- 2. APPEARANCE. In style and design, they look just like the popular ³/₄" door. Here's an opportunity to carry out the Visual Front idea in storefronts with transparent doors of lower cost. Tempered Plate Glass side lights are also available to match these beautiful doors.

New, modern fittings are available

They're clean-lined—in keeping with the sheer beauty of the *Tuf-flex* Door. The drawing at the right shows the simple lines of the alumilited fittings which are at the top and bottom of the door. Push bars are also attractively designed. See your L·O·F Glass Distributor or Dealer for details.



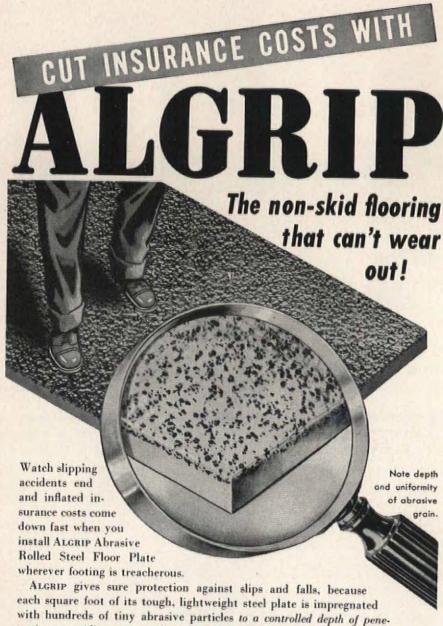






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ALGRIP gives sure protection against slips and falls, because each square foot of its tough, lightweight steel plate is impregnated with hundreds of tiny abrasive particles to a controlled depth of penetration, providing a rugged surface that stays non-slip—even on steep inclines! Algrip's "grinding-wheel" grain will never become smooth because hard wear only exposes new gripping particles . . . a safety bonus exclusive with Algrip.

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THE RECORD REPORTS

WASHINGTON

(Continued from page 294)

difficulties now experienced in obtaining construction funds for special medical facilities. A group medical center or diagnostic and treatment center is a "specialty" structure, so an unattractive mortgage risk in the eyes of most savings banks and insurance companies. Cost per sq ft of constructing a group medical center is almost double that of an ordinary building, he said. More plumbing is needed for treatment rooms: special wiring, special outlets and heavy electrical conduits must serve X-ray and other specialized equipment; an elaborate intercommunication system is needed, and an exceptional number of partitions are required for many treatment rooms, consulting rooms and nurses' stations. As a result, asserted Dr. Tothenberg, banks and insurance firms are discouraged from participating in such a venture or in advancing sufficient funds to do the job properly.

Some criticism of the Wolverton proposal was heard at the hearings. Those representing the American Association of Medical Clinics said they were dubious over some provisions. They called the bill "discriminatory" and "undesirable" so far as it would restrict its application to voluntary prepayment health plans. And they said the reference to a \$1 billion program set the scheme in a mold well beyond that of a pilot study. They questioned evidence justifying establishment of a mortgage insurance system of the proposed magnitude at this time.

Under terms of the bill, the Surgeon General of the United States would be charged with the responsibility for administering the loan insurance plan.

"FIX-UP MARKET" CITED AS BUILDING STABILIZER

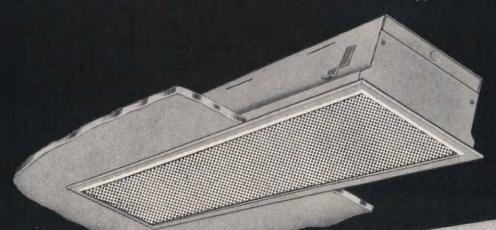
At its recent annual meeting in Washington, the U. S. Chamber of Commerce revised its declared policy on construction matters. For the first time, the annual session recognized the need to encourage the so-called "fix-up market" as an industry stabilizer and as a means of conserving property values.

The Construction and Civic Development Department of the National Chamber has estimated that probable

(Continued on page 302)

ONLY NEO-RAY "KLEEN-VU" KVT **RECESSED TROFFERS**

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Also available with Flat or Curved Alba, Curved Lens, and Louvre.

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No extra parts to buy.

All necessary parts including Jack Clamps packed with each fixture for individual or continuous mounting.

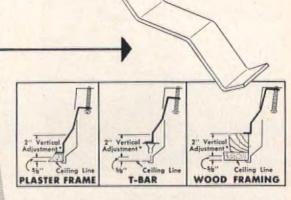
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No ugly frame screws or protrusions below ceiling line. Hinged lay-in louvers or framed glass panels.

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Jack Clamps with 2" vertical adjustment hold fixture firm and snug against ceiling. Simple to install . . . simple to adjust.



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299



Successful Store Design That Attracts Customers and Satisfies Clients



Thus the store architect must add to his purely creative sense of good design a keen sense of salesmanship. To help him do so, the editors of Architectural Record have published:

DESIGN FOR MODERN MERCHANDISING

Stores, Shopping Centers and Showrooms

Reprinted from recent issues of the *Record*, here are scores of shops and stores whose obvious eye-appeal is matched by their proven sales appeal. The editors present them in scores of fine photographs and drawings that make clear how every element—store front, interior casework, floor levels, lighting, etc.—enhances sales magnetism. They show, for example, why the "open front" rates so high in sales appeal... interior layouts that keep customer traffic flowing smoothly... when, where, and how to use color as a selling influence... how to segregate "impulse" from "demand" merchandise... clever uses of partitions and baffle walls in smaller stores... why parking areas must be geared to volume of trade, not the size of the store... the importance of customercomfort services such as air conditioning, sanitary facilities, and the like.

As "consultants" on this book, the editors have called on America's leading store architects—men like Victor Gruen, Morris Ketchum, and Caleb Horn-bostel—to offer their counsel on various aspects of successful store planning. Their words constitute the best available advice on design techniques that add up to good business, as well as good architecture. Order your personal copy of this book by mailing the coupon below.







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The test of any air conditioning unit is its performance under tough conditions . . . when heat and humidity are at their worst. To meet peak demands day after day, week after week, Typhoon units are engineered with extra reserve capacity, with rugged power plus. They deliver full-rated workload in every weather, in every climate the world over. Engineering like this took 45 years of experience to perfect. For every job from a small home to a large institution, specify Typhoon with confidence.

Get the facts about the complete Typhoon line - residential heating-cooling units, selfcontained air conditioners, window units, heat pumps — in a wide range of sizes for every installation. Call your Typhoon dealer. You'll find him listed in your classified directory-or write to us for his name.

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The Industry's Only Specialist in Self-Contained Units



Speed and economy resulted from the use of RAMSET SYSTEM to anchor 10,000 interior doors top and bottom in the low-rent housing project at Newark, N. J.

The struts and frames were guided into proper position, and anchored to the poured concrete ceiling and floor with a RAMSET JOBMASTER Fastening Tool and Tru-Set Fasteners. Less than a minute was required to provide a firm anchor.

Similarly, high-speed, low-cost RAMSET SYSTEM will solidly fasten almost anything into even the hardest concrete or mild structural steel up to 1" thick. Ask your RAMSET dealer to demonstrate how this most modern method will reduce costs and complete the work faster. Or, write us, for details in Specification Manual.

Ramset Fasteners, INC. Olin Industries, Inc.
12147 BEREA ROAD • CLEVELAND 11, OHIO

FIRST IN POWDER ACTUATED FASTENING



THE RECORD REPORTS

WASHINGTON

(Continued from page 298)

annual expenditure for fix-up activities runs currently around \$6.6 billion and believes there is a possibility of raising this level by 30 or even 50 per cent.

The Chamber also voted a policy revision emphasizing the responsibility of state and local governments in meeting shelter requirements of needy families with housing of acceptable minimum standards. The present view places this responsibility solely on local welfare agencies. The Chamber insisted that this responsibility lies with local governments rather than with Federal agencies.

Also, that part of former policy relating to urban redevelopment was expressed in broader terms of local responsibility. The need for comprehensive city planning for this activity was emphasized.

HOME SHELTERS URGED AS PRELUDE TO DISPERSION

The Federal Civil Defense Administration has been concentrating on dispersal possibilities since 1952. It still advises, however, that until dispersal plans are completed, the best thing for individuals to do under air attack is seek shelter close at hand.

Deputy Administrator Katherine G. Howard says that despite the hastened effort to devise a suitable dispersal plan "you still need a shelter area in or near your home."

No less than 40 cities now are making urban vulnerability studies to determine the evacuation plans and other measures that will fill their individual needs in case of atomic attack. FCDA stresses that all cities should be making such plans. Studies can be completed in from four to six weeks when local demand is great enough.

Commented Deputy Administrator Howard: "While it may be 18 months to two years before the military can assure us of enough warning time for evacuation, we need better local organization right now to make real use of that extra warning time when we get it." She points out that states and cities put up only about \$15 million in matching funds for the purpose of civil defense equipment in 1953—less than the property

(Continued on page 306)

DO YOU KNOW THESE 2 IMPORTANT REASONS FOR USING

Certain-teed FIRESTOP BESTWALL?

- Certain-teed's 5%" Firestop Bestwall is the only gypsum wallboard that meets code requirements for all these constructions collectively.
- And only with 5/8" Firestop Bestwall can you meet code requirements for each of the three constructions checked.

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	PARTITIONS—load-bearing or non-load-be	earing	2000		
Metal Studs† 24" (max.) O.C.	1 layer %" Firestop Bestwall, both sides	See Note 2	1 hour		
2" x 4" Wood Studs 16" O.C.	2 layers %" Firestop Bestwall both sides	See Note 1	2 hours		
	1 layer %" Firestop Bestwall both sides	See Note 2	1 hour		
The tenth of	FLOOR AND CEILING				
12" Bar Joists, 24" O.C. covered with 2" concrete floor slab	√ 1 layer %" Firestop Bestwall as ceiling surface through metal furring	See Note 4	1 hour		
2" x 10" Wood Joists covered with wood subflooring, build- ing paper, wood finish flooring	1 layer %" Firestop Bestwall as ceiling surface	See Note 3	1 hour		

*All tests made with panels under load. Ratings are applicable to load-bearing partitions (and also to non-load-bearing). †Stran-Steel studs used in tests.

NOTE 1. 6d c.c. 13 ga. flat-head 1%'' long for first layer; 8d c.c. 11% ga. flat-head 2%'' long for second layer; nailing 7'' o.c. for both layers.

NOTE 2. 6d c.c. 13 ga. flat-head 1 1/8" long, 7" o.c.

NOTE 3. 6d c.c. 13 ga. flat-head 1 1/4" long, 6" o.c.

NOTE 4. No. 6 flat-head sheet metal screws 8" o.c. to furring channels; or 11%" annular nails 6" o.c. to nailing channels.

*Official tests conducted by Underwriters' Laboratories and another

nationally recognized laboratory. Reports of tests furnished on request.

WRITE NOW for complete information on Certain-teed's Firestop Bestwall, including construction details and

important data on sound transmission rating, flexural strength and use as backer for acoustical tile.



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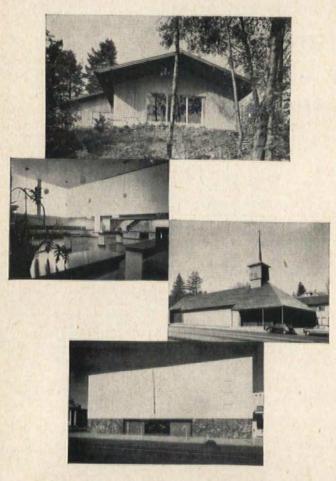
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The Northwest Architecture of

PIETRO BELLUSCHI



"A house or a building is modern, not because it has a flat roof or a butterfly roof, continuous vertical spandrels, or horizontal spandrels, lally columns, or plastic bubbles, but rather because it has recognized the meaning of space in relation to its purpose, and to its setting; because, I repeat again, it has solved in a free, and creative way all the many social, economic, regional, emotional and practical limitations peculiar to the problem at hand."

PIETRO BELLUSCHI



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Presented here for the first time in book form is a photographic study of the superb work of Pietro Belluschi, one of America's most gifted architects, and a prominent exponent of the bold and virile contemporary design of the Pacific Northwest.

Pictured in these pages is a representative selection of Belluschidesigned houses, churches, and commercial buildings of various kinds, many of which have won world-wide fame. These structures display "Northwest Modern" at its very best-an architectural expression of the rugged terrain, the bracing climate, and the pioneering spirit that characterizes the region and its people. Utterly devoid of sham and mannerism, Mr. Belluschi's buildings possess a simple grace of line and form, a dignity and distinction, that make them works of sheer beauty.

Edited by one of his former pupils, this book quotes at length from Mr. Belluschi's well-articulated philosophy of design, and explains his personal views on the architect's role in midcentury society. Here at last is a book that pays a deserved tribute to one of the truly great architects of our age.

PARTIAL CONTENTS

NORTHWEST ARCHITECTURE

Part I.

About Belluschi Himself

Part II.

In Belluschi's Words Architecture & Society The Role of the Modern Mu-seum in Our New Civiliza-tion

Church Architecture The Responsibility of the Architect in the World of Today

Our Readiness for Better Architecture

Part III.

From Belluschi's Work Art Museum, Portland, Oregonian Building, Portland, Oregon

Finlay Mortuary, Portland, Oregon Houses (30 pages)

Oregon State Hospital St. Thomas More Chapel, Portland, Oregon

Sacred Heart School, Portland, Oregon Drive-in Restaurant, Portland, Oregon

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Many architects tell us that when they specify Schacht Stainless Steel Doors, there is no "or equal." Why? Because there is no substitute for their unhurried craftsmanship and honest material—they're fully welded of heavy gauge stainless steel throughout.

The optional concealed panic bolt becomes an integral part of the



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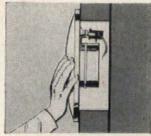
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Wall outlet pre-wired, permanently installed.



Clock plugs easily into



Clock securely mounted. yet easily removed.

 This ultra-thin Faraday clock incorporates design advances that greatly simplify installation and give it a distinctive beauty, unmatched in clocks of flush design. It is installed, securely and easily, by plugging it into a pre-wired wall outlet-yet it can be removed from the wall with equal ease. Once installed, its polished aluminum rim projects only 7/16"—and actually looks as though it were mounted in the wall.

The Faraday Flush Clock is unusually easy to read-from many angles-because of its special flat center convex crystal and crisp black numerals against a white face. It is operated by a high-quality. impulse or synchronous movement. Available in a wide variety of standard diameters as individual synchronous clocks or as a part of a complete program system. Write for details.

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BELLS . BUZZERS . HORNS . CHIMES . VISUAL AND AUDIBLE PAGING DEVICES AND SYSTEMS

THE RECORD REPORTS

WASHINGTON

(Continued from page 302)

loss in a single tornado-stricken town. Then she asks: "Is it not fairly obvious that our home governments are underinsured in these troubled times?'

JET AIRPLANE IMPACT ON CITY PLANNING DISCUSSED

The Urban Land Institute of Washington has revised its Community Builders Handbook and in so doing takes note of the impact of the commercial jet airplane on community development.

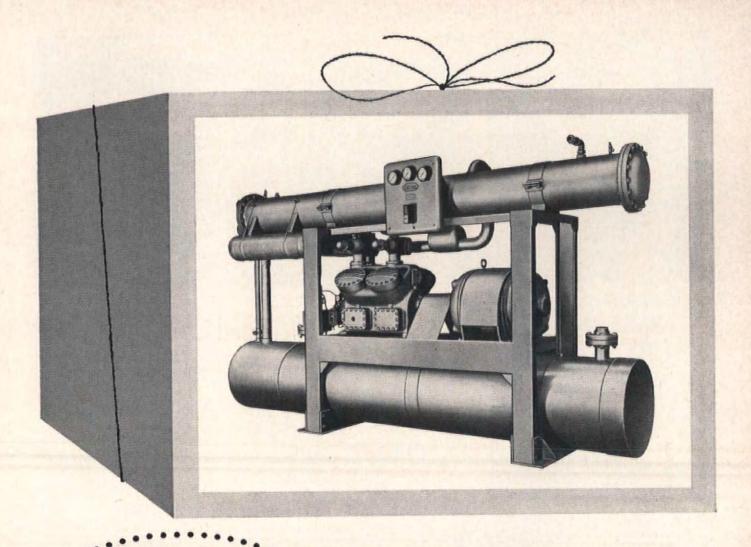
"The main factors that govern the amount of adverse effect of airports on immediate and outlying neighborhoods are the nuisances arising from noise, vibrations, psychological hazard, and personal annoyance," says the new edition. "When property lies within the patter of plane approaches and take-offs, adverse influences on property are intensified. In the case of jets, the noise level and the area covered by their operational noise are about twice that of the conventional plane. (The width of noise area covered by the four-motored propeller driven airliner is about two miles from each side of the flight path.)

U.L.I. noted that since July 1951, FHA field offices have generally refused to insure mortgages on houses within four miles of a major airport if the homes would come beneath the normal landing and takeoff paths. Furthermore, the President's Airport Commission has recommended that local authorities, in laying out new airports, attempt to restrict all building within two and a half miles of the ends of principal run-

ways.

ADDENDA

- · Peter Strobel, New York City consulting engineer, has been selected for the position of Public Buildings Commissioner to succeed W. E. ("Bert") Reynolds, who plans to retire about June 30. Mr. Strobel is a graduate of the university at Copenhagen, Denmark, class of 1925. He has been engaged in private practice in New York City.
- · The President has signed into law the judicial review bill, thus ending a battle (Continued on page 310)



Carrier: 75-horsepower

water cooling package

- Completely assembled for easy installation
- Compactly designed to save space
- Thoroughly tested and Carrier guaranteed

A ready-made system that's made-to-order for comfort and process applications—that's Carrier's new 75-hp reciprocating water cooling package.

Like Carrier's larger 100, 125 and 150 hp units, it comes from the factory completely assembled. Water, refrigerant charge and electrical connections are all that are needed to put it into service.

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Lavishly-Illustrated New Book Reveals Professional Secrets of House Photography

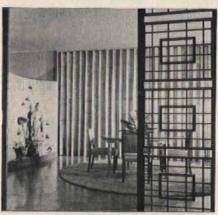
If you'd like to display in your portfolio truly superb photographs of your work... photos that capture the mood and character of an entire house or a single room... send today for a free-examination copy of "Architectural Photography of Houses," a new and unique photography book published especially for architects.

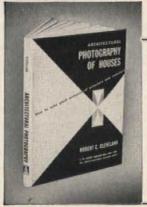
Robert C. Cleveland, noted architectural photographer, presents here some 350 examples of house portraiture. He reveals hundreds of professional pointers on what types of camera to use... setting up the camera and adjusting it properly... controlling the field of view ... taking best advantage of light and shadow... choosing camera angles and elevations... correcting for perspective... and everything else you'll need to know to take striking photographs for your portfolio, or for publicity uses.

You get step-by-step directions on photographing every possible kind of interior or exterior scene. Each photograph carries two captions, one describing photographic techniques, the other commenting on features of design and décor. There is a special "portfolio of rooms," a conducted tour with a camera through every room in the home, from foyer to sundeck, from patio to playroom. Other parts cover Dressing the Scene; Night Photography; Placement of Lights; Orientation of Rooms; and a special section of tips for the amateur photographer.



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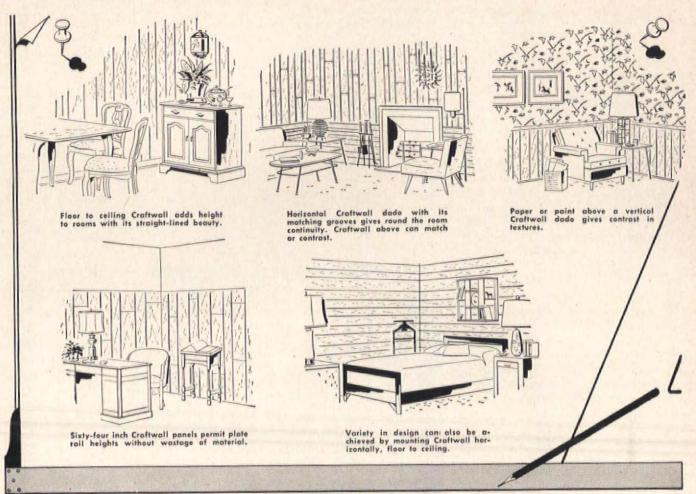


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THE RECORD REPORTS

of two decades by the Associated General Contractors of America. For more than 20 years the A.G.C. has fought for legal rectification of abuses experienced under the old contract clause which permitted decisions of contracting officers and department heads to stand in some cases. This struggle was brought to a head by the Supreme Court decision in the Wunderlich case a few years ago. The Justice Department and the Comptroller General approved the language of the new amendment, which now gives contractors equitable recourse in the courts.

- The President's Committee on Government Contracts approved a revision in the non-discriminating clause, and the change was made effective immediately by order of the Attorney General. The new clause defines the prohibited discriminatory employment practice based on race, color, religion or national origin as well as providing for the posting of notice to employes. All construction under Federal government auspices is affected.
- Hearings on the Cooper bill began last month in a Senate Labor subcommittee. This legislation, introduced last year by Senator John Sherman Cooper (R-Ky.), would authorize \$100 million annually for three years in Federal aid to states for construction of public elementary and secondary schools. States with the smallest available revenues for school purposes would share to the largest extent in the proposed program. Fund allocations would be based on a formula including both proportion of school children of each state and the average annual income. The money would go to the highest educational authority of each state and be awarded to individual school projects through a master plan worked out on the basis of statewide inventories of existing facilities and surveys of need.
- CIO's Economic Outlook called for more Federal assistance for the construction of school buildings. It cited the National Office of Education surveys showing school plant deficiencies and emphasized the fact that the need for new schools is growing faster than the supply of new structures.
- Managers of the nation's major airports, members of the Airport Operators Council, unanimously endorsed the de-

WASHINGTON (Cont. from p. 306)

cision of the Civil Aeronautics Administration to seek funds for renewing the Federal-aid-to-airports program. The rejuvenation of this program, without aid for terminal building construction as was included in the earlier programs, has been recommended by the Department of Commerce in line with industry suggestions. Fred M. Glass, Council president, said some of the larger air-

ports are considering installation of conveyor belts for handling passenger baggage from parking lot to terminal building. This is because the lot areas are becoming so large, he explained. The Philadelphia terminal may be the first to install such a system.

State governments last year spent almost \$2.8 billion on contract construction, an increase of approximately seven per cent from 1952.

(Continued on page 312)

CONSTRUCTION DETAILS

At Left, for LCN Floor Type Concealed Door Closer Installation Shown on Opposite Page

The LCN Series 2-4-6 Closer'
Main Points:

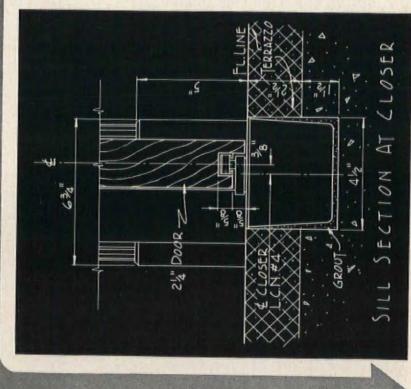
Effective, full rack-and-pinion, two-speed control of the door
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Construction Details on Opposite Page

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Neville, Sharp & Simon, Architects

THE RECORD REPORTS

(Continued from page 310)

ON THE CALENDAR

7-8

Japanese House: an exhibition in the Museum garden of a

June.

house designed and built in Japan by Junzo Yoshimura -Museum of Modern Art, 11 W. 53rd St., New York

Public Relations Workshop, New York Chapter, American Institute of Architects - Architectural League of New York, 115 East 40th St., New York 23rd Annual Meeting, National Housing Conference - Hotel Statler, Washington, D. C.

Sixth National Plastics Exposition, sponsored by the Society of the Plastics Industry, Inc. -Cleveland Auditorium, Cleve-

land

. 7-10

9-12 Twentieth Annual Meeting, National Society of Professional Engineers - Hotel Schroeder, Milwaukee

10-12 Joint Annual Convention, New Jersey Chapter, American Institute of Architects, and New Jersey Society of Architects-Berkeley-Carteret Hotel, Asbury Park, N. J.

10-13 Annual Meeting, Board of Directors, American Institute of Architects - Statler Hotel, Boston

13-18 Annual Meeting, American Society for Testing Materials -Sherman and Morrison Hotels, Chicago

14-18 62nd Annual Meeting, American Society for Engineering Education - University of Illinois, Champaign-Urbana, Ill.

15-19 86th Annual Convention, The American Institute of Architects - Hotel Statler, Boston

Special Summer Program in Soil Technology - Massachusetts Institute of Technology, Cambridge 39, Mass.

Pre-Conference Library Buildings Institute, sponsored by American Library Association - St. Paul

20-28 Post-Convention tour of New England and Canada, cruising the St. Lawrence and Saguenay, arranged by U.S. Travel Agency

for A.I.A. members and families 20ff Good Design Anniversary Exhibition, sponsored by the Museum of Modern Art and the Merchandise Mart, opens in Chicago; to be on view through the year - The Merchandise Mart, Chicago

21-23 Thin Concrete Shells, a conference jointly sponsored by the Departments of Civil Engineering and Architecture - Massachusetts Institute of Technology, Cambridge, Mass.

Summer and Pacific General Meeting, American Institute of Electrical Engineers - Los An-

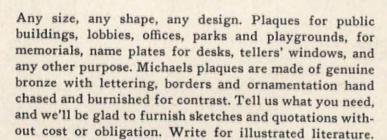
24-30 23rd Annual Conference, American Institute of Decorators, and exhibition, "Decoration 1954" - Palmer House, Chicago

27ff 92nd Annual Meeting, National Education Association; until July 2 - New York City

30 Playground sculpture competition: exhibition of prizewinning designs in a competition spon-

(Continued on page 314)





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THE RECORD REPORTS

(Continued from page 312)

sored by Parents Magazine, the Museum of Modern Art and Creative Playthings Inc.; until Aug. 22 — Museum of Modern Art, 11 W. 53rd St., New York

July-

5ff Plants as Factors of Design: a summer course offered by the Department of City Planning and Landscape Architecture; until Aug. 13 — Harvard Graduate School of Design, Cambridge, Mass.

27-30 Eighth Short Course on Hot Water and Steam Heating Systems — University of Illinois, Urbana, Ill.

August-

17-19 Fire Protection Engineering, a conference jointly sponsored by the School of Architecture and City Planning, the School of Engineering and the School of Industrial Management — Massachusetts Institute of Technology, Cambridge, Mass.

17ff The Modern Movement in Italy: Architecture and Design; until Sept. 6 — Museum of Modern Art, 11 W. 53rd St., New York City

19-21 Northwest Regional Conference, American Institute of Architects — Eugene, Ore.

23ff 16th Annual Summer Program in City and Regional Planning arranged in the School of Architecture and Planning; until Sept. 3 — Massachusetts Institute of Technology, Cambridge, Mass.

25ff Tenth Triennale di Milano; an International Exhibition of Architecture and the Allied Arts and Industrial Design; until Nov. 15 — Milan, Italy. For information on participation, address: Triennale di Milano, Palazzo dell'Arte al Parco, Milano



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OFFICE NOTES

Offices Opened—

- Beck, Simon and Mantel, Structural Engineers, announce the opening of a branch office at 92 Liberty St., New York 6, N. Y.
- Raymond Brown, Jr., Architect, announces the opening of his office at 125 Trumbull St., Hartford 3, Conn.
- James Scott Rawlings, A.I.A., has opened his office for the practice of architecture at 3341 West Cary St., Richmond, Va.
- Gene E. Trotter, Architect, announces the opening of his office for the general practice of architecture at 219½ North Broadway, Billings, Mont.
- Harrison Lewis Whitney and Robert Scott Tomlinson, Architects, announce the opening of their office at 468 Palmero St., Corpus Christi, Tex.

New Addresses-

Curtis and Davis, Architects and Engineers, 338 Baronne St., New Orleans 12, La.

Earl W. Pellerin, Architect, 18317 Westover, Detroit 19, Mich.

Herbert D. Phillips, A.I.A., 470 Fourth Ave., New York 16, N. Y.

(More news on page 320)

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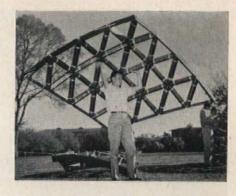
(Continued from page 24)

Real Clay Tile

developing the mathematical formulas, making dies, stamping and cutting the units to be assembled. The third week was devoted to production on an assembly-line basis; and in the fourth week the dome was assembled. At the end of the project the group made a complete report, including the advantages and disadvantages of their approach, to be used as a reference for the next Fuller group project.

The Tulane students organized on an industrial basis, with each person being responsible for a certain phase of the work, yet able to help with any other if he wished.

Requirements for the project were set: the mobile military structures must be extremely light; capable of rapid assembly by a crew inexperienced in construction; able to be inexpensively mass-produced of materials not easily



Above: parallelogram section, one of 30 used in dome, is lifted into place. Below: close inspection by a student





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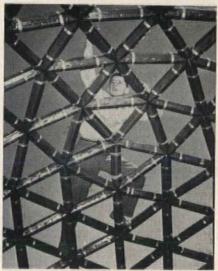
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Tulane student taping cardboard triangles for added strength

picked up by radar beams; able to withstand high wind, cold, rain and other natural elements.

The students used polyestered cardboard strips, folded into nine different basic triangular shapes bent into the (Continued on page 318)

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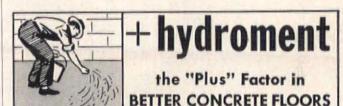
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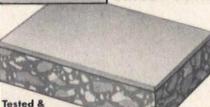
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THE RECORD REPORTS

(Continued from page 316)

488 triangles needed for the 18-ft model dome. The assembling procedure was broken into units of small diamonds consisting of two identical triangles (one positive, one negative) grouped in eights to form a parallelogram, 30 of which were used to form the dome. For ease of assembly the diamonds were keyed with colored tape at each of the four corners. Industrial filament tape, first used to hold the triangles together, was



Col. Lane, Mr. Fuller, Dean John E. Dinwiddie and Col. Paul J. Fontana (Marine's head of aviation operations) inspect Tulane project

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RUBBER FLOORING

not found completely satisfactory and was later replaced with wooden pegs slipped into pre-punched holes. The students chose the moisture-proof materials for compactness, simplicity of application and strength.

The 18-ft model to be shown at Quantico this month along with the other models developed elsewhere will serve as a scale model for a proposed 36-ft housing shelter or a 108-ft hanger for six fighter panes. It is about one thirtieth the weight of an equivalent structure in steel; unskilled labor will be able to assemble the 108-ft structure in a few hours; structural members for the 18-ft model can be contained in a package 1 by 5 by 6 ft; cardboard triangles can be shaped on existing paper machines quickly and with little conversion in industry; the lack of metal in the dome makes enemy detection by radar more difficult. And, not least interesting to an economy-minded Defense Department, the estimated cost of providing dome shelters for one aircraft wing is \$657,000 compared with \$5 million for conventional shelters.

While students at Tulane were completing final details of their dome for the Quantico tests, Mr. Fuller was working on his next idea for mobile military structures — a complete packaged unit dropped by parachute and landing as a sturdy dome.

Fuller domes will house the American exhibition at the Tenth Triennale at Milan this summer and a Fuller dome in the Boston Gardens shelters the architectural exhibition which is part of this month's Boston Art Festival. Mr. Fuller's dream of seeing his domes "bloom like flowers all over the world" may be coming true.

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THE RECORD REPORTS

(Continued from page 314)

RENEWED INTEREST SHOWN IN WORKS OF MACKINTOSH

The University of Virginia honored the work of the Scottish architect and designer Charles Rennie Mackintosh when its Museum of Fine Arts presented what is believed to be Mackintosh's first one-man show in this country.

Porcelain

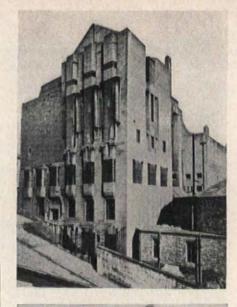
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CURTAIN WALLS
SPANDREL PANELS

SASH PANELS?

DO YOU WANT Mackintosh, who practiced in Glasgow around the turn of the century, is recognized now as a forerunner of modern architecture.

Included in this exhibit are photographs of his best-known work, the Glasgow School of Art, as well as photographs of the Ingram Street and Willow Tearooms, Queen's Cross Church, Hill House, his own house in Glasgow, Scotland Street School, and some examples of his furniture designs. In addition there are photographs of his drawings and paintings.





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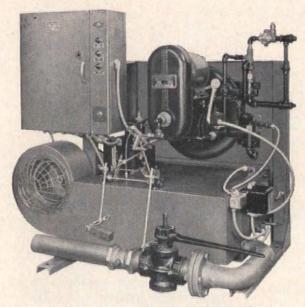




Top: the Glasgow School of Art, 1897–1909; the west façade, showing the long library windows. Center: a detail of the windows. Bottom: design for a private room in the Ingram Street Tearooms, c. 1916; there is a possibility that this design was done by an associate of Mackintosh



(More news on page 322)



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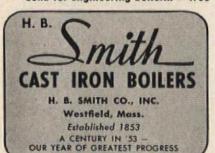


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THE RECORD REPORTS

(Continued from page 320)



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The winning entry, from a field of 17, was that of Quentin C. Smith, of Alexandria. Mr. Smith is a second-year student in the School of Architecture at the University of Virginia. The first prize, of \$100, was awarded to Mr. Smith at the chapter's spring meeting, which was held May 28–29 at Virginia Beach.



From left to right, jury members Merrill C. Lee, F.A.I.A., chairman of the chapter's Competitions and Awards Committee; Pendleton S. Clark, F.A.I.A.; Robert F. Pile, from the land surveyors section of the state examining board; David J. Gibson, A.I.A., from the architectural section; and Turner A. Burton, executive secretary of the Virginia Board for the Examination and Certification of Architects, Professional Engineers and Land Surveyors



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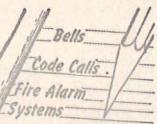
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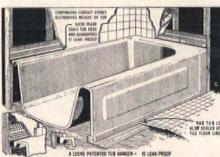
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BIBLIOGRAPHY

- 1. Literature on Fire Safety Programs in Hospitals. American Hospital Association 18 East Division Street Chicago, Illinois
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National Board of Fire Underwriters 85 John Street New York 38, N. Y.

- 3. (a) National Fire Codes Relating to **Building Construction and** Equipment.
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 - (c) Recommended Safe Practice for Hospital Operating Rooms.
 - (d) Fires in Hospitals and Institutions.
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National Fire Protection Association

60 Batterymarch Street Boston 10, Massachusetts

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- 5. Fire-Resistance Classifications of Building Construction - Report BMS 92 and Supplements, National Bureau of Standards. U. S. Government Printing Office Superintendent of Documents Washington 25, D. C.
- 6. Administrative Level Planning for Hospital Fire Emergencies. Federation of Mutual Fire Insurance Company 20 North Wacker Drive Chicago 6, Illinois

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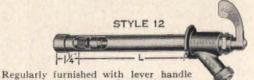
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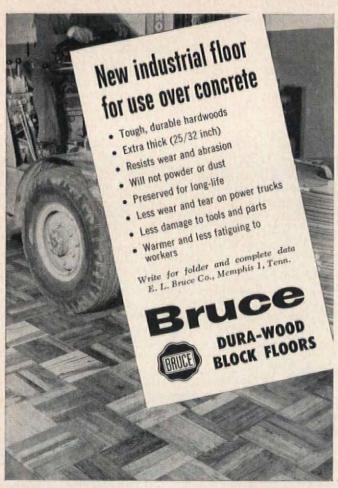
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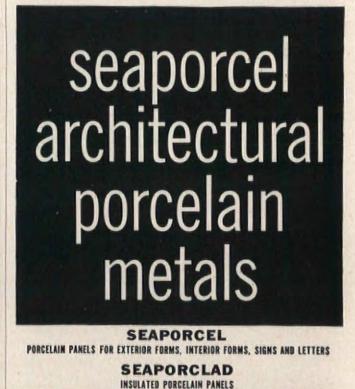












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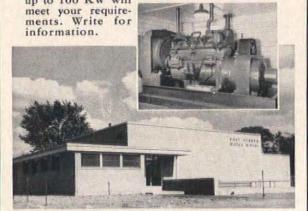
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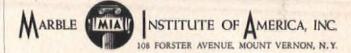
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(Continued from page 48)

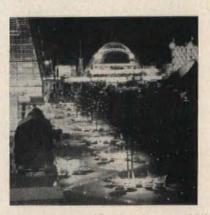
ON LANDSCAPE DESIGN

Modern Gardens - Masterworks of International Garden Architecture. By Peter Shepheard. Frederick A. Praeger (New York) 1954. 8¾ by 11½ in. 144 pp, illus. \$9.50

As did Andrew Jackson Downing of the 19th century, Peter Shepheard, British architect, town planner and landscape designer has written a book devoted to the subject of landscape architecture. Landscape design has once again become an important factor in architecture and the author, like his 19th century predecessor, has a sensitive eye for the integration of buildings with their surroundings - be they of a formal nature or of careful abandon; a 20-footsquare clothes drying area or the many square miles of public parks. That the subject of landscape architecture is an important one can be ascertained by organizations such as the American Society of Landscape Architects and by extensive courses on the subject offered at such places as the American Academy at Rome, Yale, Harvard, Cornell. University of Illinois.



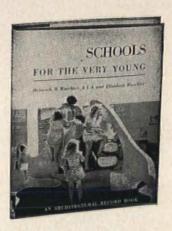
This book shows that garden architecture - whether on the scale of the little house in the suburbs of San Francisco by Thomas Church and Associates, or of the Festival of Britain (the author designed the area downstream of the rail-



(Continued on page 334)

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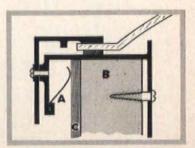


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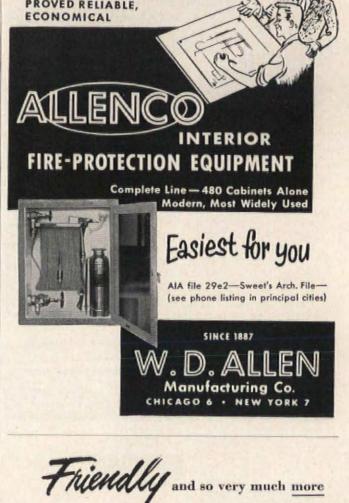
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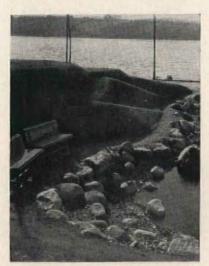
REQUIRED READING

(Continued from page 330)

road bridge) - is effectively achieved not only by careful massing of large two dimensional shapes, textures, colors, but also by attention to the smallest details - of border fences, fountains, steps, paving, tree and garden edging. That the delights of gardens, parks, townscape, and buildings are effected by spacea walk through a sheltered dark covey into bright open spaces; the



problem of "immediacy" - of being able to go right down to the water, no commercial walks or forbidding walls to detour us; no wires or billboards blocking our view of the tower; of traffic; the pleasure of parks, inviting, private, sociable in a public place just a step off the rushing trafficked roads - is clearly apparent in Mr. Shepheard's choices.



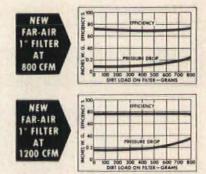
All photos from MODERN GARDENS

The book is provided with numerous excellent photographs and complete plans. The author gives details of the planting - even pointing out which plants are seen more advantageously at close view, and describes materials for pavements, terraces, walls and pergolas.



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FAR-AIR 1" filters load progressively -like our 2"-and give you high efficiency air filtration without critical pressure loss right up to cleaning time. Cleaning is simple and easy. With reasonable care

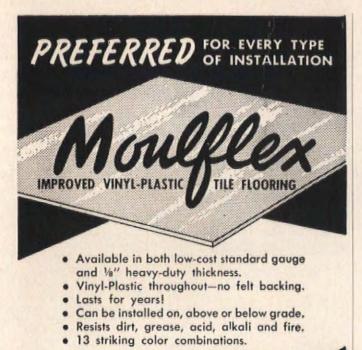
it will last indefinitely.

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MARCUS 100 KVA 3 phase transformer powers UNIVAC

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PIONEERS IN THE FIELD OF DRY TYPE TRANSFORMERS

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for single unit wall construction...finished inside and out



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"Uniwall" makes possible single-unit wall construction with finished facing inside and out. "Uniwall" units are made of quality hard-burned, de-aired fire clay, in modular dimensions, but are equally adaptable for non-modular construction.

They are designed with a jamb slot to receive the "fin" of a metal window or the blind stop extension of a wood window.

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Write for Natco Bulletin UW-100 for shape and construction details and unit specifications.

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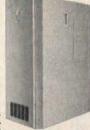
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Aluminum Glass Block Ventilators



A practical window that provides ventilation and vision for glass block construction . . frames are available in extruded aluminum, stainless steel, and heavy gauge mild steel. No lintel is required for installation, because MARMET ventilators are sturdy construction, and carry the stress put on them by a glass block panel. Available in stock sizes that may be used with 6", 8" and 12" glass block. Special 6", 8" and 12" glass block ventilators have these features: sturdy corrosion resistant . . welded construction . . weathertight . . fine herdware . . removable sash . . deep glass rabbett.

MARMET aluminum louvre blocks are used to replace a single 8" x 8" glass block or 2 — 8" x 8" glass blocks in a panel, for a room in which the area does not require a full sized ventilator.

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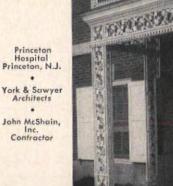
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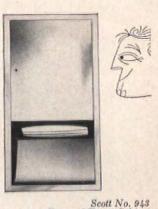
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Scott No. 943 Recessed Towel Cabinet

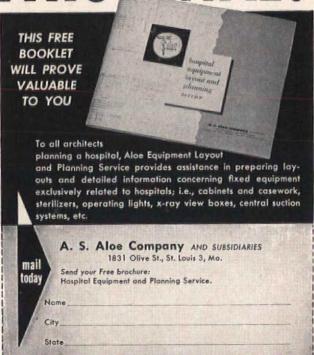
Make it all modern with Scott-designed, recessed fixtures. See dimensional drawings in Sweet's cataloque or send for free full-color booklet on washroom design. Write Washroom Advisory Service, Scott Paper Company, Chester, Pa.



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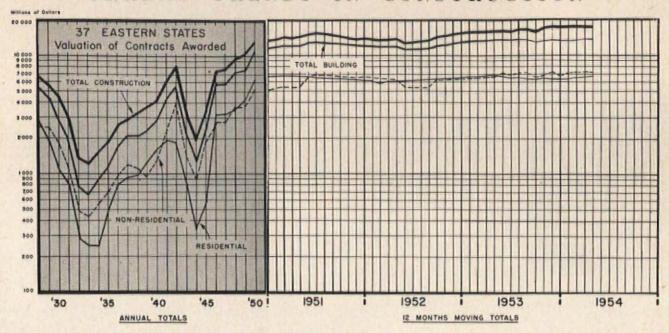
SYMBOL OF THE RIGHT KIND OF WASHROOM

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THE RECORD REPORTS

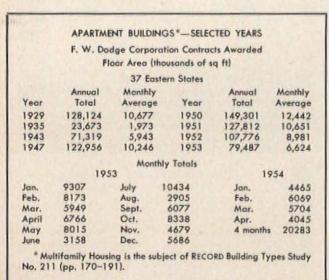
CURRENT TRENDS IN CONSTRUCTION



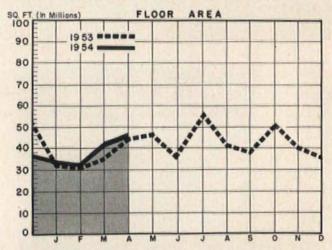
Charts by Dodge Statistical Research Service

IT'S STILL A RECORD YEAR

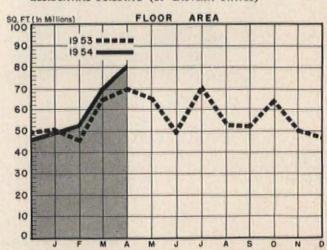
THE LATEST FIGURES on contract awards for future construction in the 37 eastern states as reported by F. W. Dodge Corporation produced a total valuation for the first four months of 1954 of \$5,592,632,000, up eight per cent from the same period in 1953 and a new record for the first four months of any year. Residential building, totaling \$2,435,125,000, was 13 per cent over the 1953 figure for the period; nonresidential, at \$2,079,276,000, was up nine per cent. The April total of \$1,691,898,000 was three per cent under the April 1953 level the first monthly total of 1954 which failed to top the corresponding month of 1953; but the April 1953 advantage was due largely to the award of a \$150 million atomic energy contract in that month. There was no such unusual item in April 1954. The public works and utilities category thus showed a 25 per cent drop from April 1953, while nonresidential building fell only 11 per cent and residential building was up by a husky 18 per cent.



NONRESIDENTIAL BUILDING (37 EASTERN STATES)



RESIDENTIAL BUILDING (37 EASTERN STATES)





Westinghouse Frost-Free* Refrigerator, Model DFG-123, and Upright Freezer, Model UFG-120.

As if you had designed them!

New Westinghouse Refrigerators and Freezers organize space for efficient kitchens

When you design a house, you plan carefully the organization of space in the kitchen. The handsome Westinghouse Food File Refrigerator and Upright Home Freezer provide well-integrated storage of all foods, fresh and frozen. Their economy of floor space permits you to locate the freezer beside the refrigerator, in the logical place - the kitchen.

The 12-cu. ft. refrigerator has a special place and a special cold for each and every kind of food...in the Meat Keeper®, the Beverage Keeper, the Humidrawers, the Butter Keeper, the Cheese File, the Egg Keepers, the Snack Keeper and the 56-lb. full-width Freezer. And it's Frost-Free - 100% completely automatic defrosting.

The 12-cu. ft. upright Home Freezer facilitates ease of frozen storage. To reach any item, only one of the Cold-Saving Doors need be opened. Pastry Rack, Roll-Out Drawer, Quick Freeze Plates and pull-out Fruit Juice Tray increase storage convenience.

For complete data, see your nearest Westinghouse Distributor or write direct.

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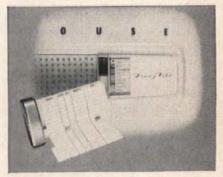
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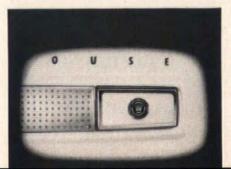
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REFRIGERATOR AND FREEZER, together, take no more floor space than many chest-type home freezers.



FREEZ-FILE on door provides a day-by-day record of foods stored in the home freezer.



MAGIC OPENER permits opening refrigerator door with both hands full. Slight pressure with elbow or finger, and door swings open automatically.



WHICH GLASS

Is Best for Air-Conditioned Buildings?

Architects and designers are familiar with the relative values of single glass and double glass in respect to winter heat savings and comfort. The growing importance of air conditioning emphasizes the need for careful selection of the right glass in respect to differences in heat gain as well. Demand for large areas of glass for light and view makes this especially necessary.

The American Society of Heating and Ventilating Engineers recently concluded a seven-year study of heat gain from solar and sky radiation. With the facts from this study, it is now possible to estimate quite accurately the comparative heat gain with various types of glass. The figures for comparison are based on a measure of hourly heat gain, averaged over the day. This has become the preferred method for calculating the cooling load.

Table 1 shows the total BTU heat gain in an hour for each square foot of glass in windows. The figures include direct solar radiation, sky or diffuse radiation, heat transfer due to differences between indoor and outdoor temperatures, and heat gain due to increased glass temperatures when the sun is shining on it.

	TABLE 1—Cooling load BTU per sq. ft. Design day—August 1—Design tempe				
Lat.	Kind of Glass	North	East	South	Wes
9	D. S. Sheet	21.2	48.3	18.8	48.3
	1/4" Plate	20.4	46.0	18.1	46.0
24° N	1/4" Heat Absorbing Plate	17.5	35.6	15.8	35.6
N	Thermopane®-D. S. Sheet	15.5	39.9	13.7	39.5
14	Thermopane —1/4" Plate	14.7	36.6	13.0	36.6
	Thermopane - 1/4" Heat Absorbing Plate	11.8	26.8	10.6	26.8
	D. S. Sheet	19.8	49.0	24.6	49.
ward.	1/4" Plate	19.1	46.7	23.7	46.
32° N	1/4" Heat Absorbing Plate	16.5	36.1	19.8	36.
N	Thermopane —D. S. Sheet	14.5	40.5	18.0	40.
	Thermopane —¼" Plate	13.7	37.1	16.9	37.
	Thermopane — 1/4" Heat Absorbing Plate	11.1	27.2	13.4	27.
	D. S. Sheet	19.4	50.3	34.0	50.
	1/4" Plate	18.9	48.0	32.6	48.
40° N	1/4" Heat Absorbing Plate	15.8	37.0	26.1	37.
N	Thermopane -D. S. Sheet	14.4	41.7	26.5	41.
11	Thermopane —¼" Plate	13.6	38.2	24.8	38.
	Thermopane -1/4" Heat Absorbing Plate	10.9	27.9	18.4	27.

For every 1°F increase in outdoor design temperature or decrease of indoor temperature, add 1.07 to single sheet glass values, 1.06 to single plate or heat absorbing values and 0.61 to values for *Thermopane*.

Conclusions from this table

- Thermopane insulating glass will save in over-all operating costs of the air-cooling system.
- 2. Thermopane will usually reduce the size and cost of the equipment required and the reduction will be substantial where Heat Absorbing Thermopane is used.
- 3. Heat Absorbing *Thermopane* is of greatest value on east and west exposures. Its value is also important on south exposures.
- Shading of east and west windows is highly desirable. An overhang or other shading device will exclude at least some solar or sky radiation.
- 5. The desirability of shading of south windows increases as latitude increases.
- 6. Heat gain through north windows is almost constant for all latitudes in the U. S.

LET'S TAKE AN EXAMPLE:

Assume a small building at 40° N latitude, with the following glass areas:

North wall 140 sq. ft. South wall 147 sq. ft. East wall 60 sq. ft. West wall 52 sq. ft.

Here are the heat gain comparisons for the glass:

		TABLE	11			
Kind of Glass	North	East	South	West	Total	Reduction Over Single Sheet
D. S. Sheet	2716	3018	4998	2616	13348	
¾" Plate	2646	2880	4792	2496	12814	4.0%
¾" Heat Absorbing Plate	2212	2220	3837	1924	10193	23.6%
Thermopane D. S. Sheet	2016	2502	3895	2168	10581	20.7%
Thermopane—1/4" Plate	1904	2292	3646	1986	9828	26.3%
Thermopane—¼" Heat Absorbing Plate	1526	1674	2705	1451	7356	44.9%

Shading—This is important with any type of glass. Taking the building referred to above as an example, complete shading of south windows from March 21 to September 21 will further reduce the total heat gain through glass, varying from 16.4% to 19.4%, according to the type of glass used.

WHAT ARE THE SAVINGS?	TABLE III		
Kind of Glass	Combined Glass and Shade Reduction	Total Reduction in Cooling Load	
D. S. Sheet	18.6%	.207 ton	
¼" Plate	21.5%	.241 ton	
1/4" Heat Absorbing Plate	40.0%	.403 ton	
Thermopane D. S. Sheet	40.3%	.403 ton	
Thermopane—¼" Plate	45.7%	.452 ton	
Thermopane-1/4" Heat Absorbing Plate	62.3%	.607 ton	

Summary—This example is for a *small* building. Larger savings, of course, will accrue in reduction of heat gain through larger glass areas. The example does show how the right glass can materially reduce the size of the air-conditioning unit required and decrease the cost of operation for the life of the building...in addition to the winter heat savings and comfort which *Thermopane* provides.

Climate need not materially hamstring your design freedom, as far as glass is concerned. Put windows where you want them, using the versatility of glass to meet conditions of sun and climate. If you desire further information on heat gain or heat loss as it pertains to glass, write to:



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608 Madison Avenue, Toledo 3, Ohio

ARCHITECTURAL

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SEMI-ANNUAL INDEX VOLUME 115

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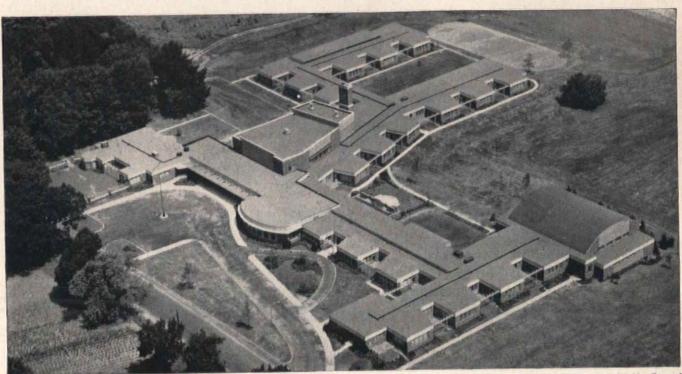
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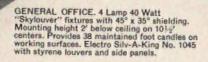
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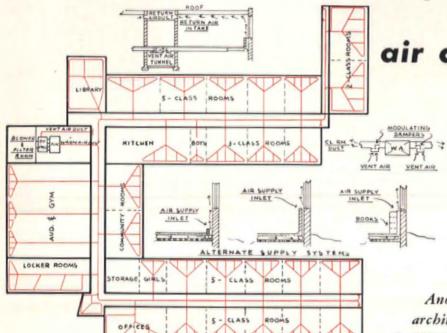
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