

ARCHITECTURAL RECORD

9 September 1961

Idlewild feature

The Hartford Building, Chicago

Building Types Study: Hotels-Motels

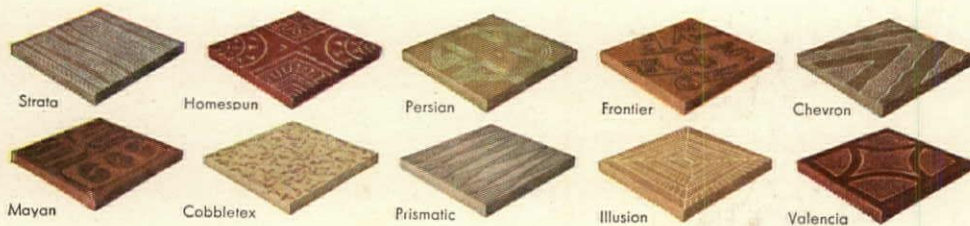
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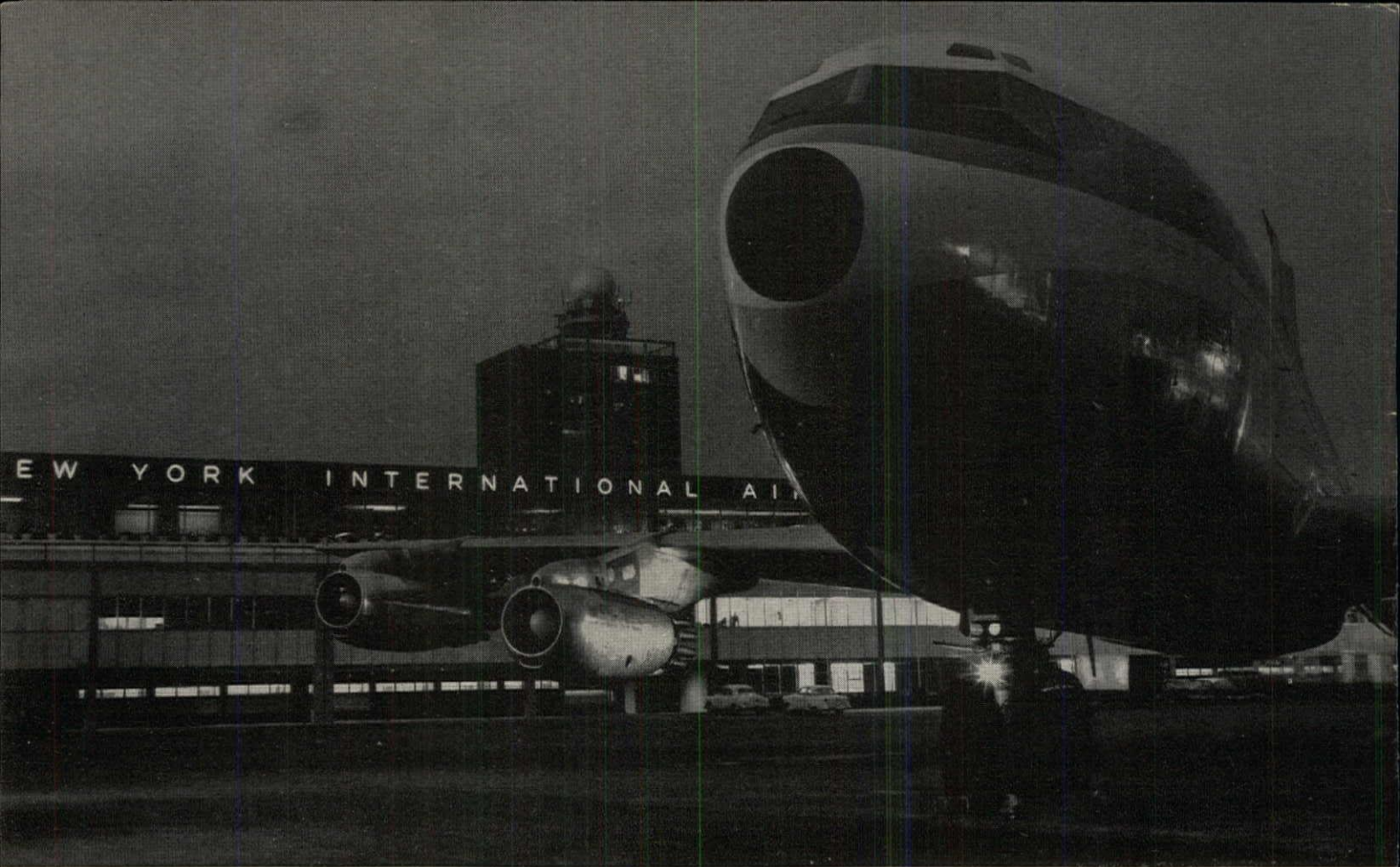
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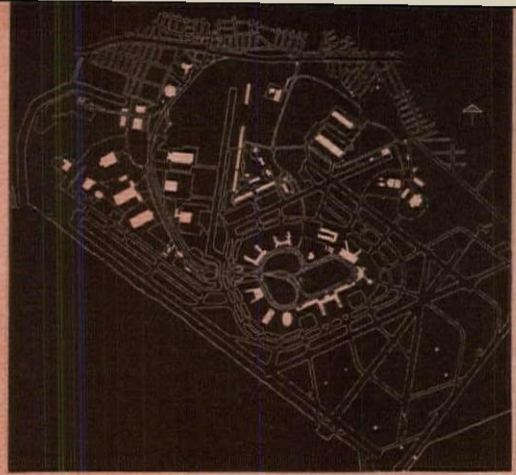
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ARCHITECTURAL RECORD September 1961 Vol. 130, No. 3
Published monthly, except May 1961, when semi-monthly, by F. W. Dodge Corporation, a McGraw-Hill Company.

Executive, editorial, circulation and advertising offices: 119 West 40th Street, New York 18, N. Y. Western Editorial Office: 2877 Shaasta Road, Berkeley 8, Calif. Office of Publication, 10 Ferry Street, Concord, N. H.; second-class mail postage paid at Concord, N. H.

Subscription rate for individuals in the field served \$5.50 per year in U. S., U. S. Possessions and Canada; single copies \$2.00, except Mid-May 1961 issue \$2.95. Further details on page 6. Postmaster: Please send Form 3579 to Circulation Manager, ARCHITECTURAL RECORD, 119 West 40th Street, New York 18, N. Y. (National Edition)

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Coming in the Record

ARCHITECTURE NOT FOR FASHION

The work of Edward Larrabee Barnes is characterized by a personal modesty rarely found in combination with so high a degree of intellectual and visual creativity. His buildings are inventive as well as sensitive in their responses to purpose and place; but they perceive the client rather than asserting the architect. A major presentation of significant examples of his current work may suggest the creative result possible from the highest architectural expression of the will, not of the architect, but of the client.

HOW ARCHITECTS DESIGN VALUE INTO SCHOOLS

Isn't the budget always a problem (whether admittedly "minimum" or not)? And doesn't the architect spend the most significant part of his effort to produce the highest possible quality at whatever budget level? Next month's Building Types Study on Schools will provide impressive testimony to the architectural results of such efforts, and some encouraging indications of the triumphs of technological innovation, architecturally applied, in the solution of contemporary school planning problems.

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Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage.

SUBSCRIPTIONS: Available only by paid subscription. Publisher reserves the right to refuse non-qualified subscriptions. Subscriptions to Architectural Record solicited only from architects and engineers. Position, firm connection, and type of firm must be indicated on subscription orders forwarded to Circulation manager, Architectural Record, 119 West 40th Street, New York 18, N. Y. Subscription prices: U. S., U. S. Possessions and Canada: \$5.50 per year; other Western Hemisphere countries, to those who by title are architects and engineers. \$9.00 per year. Single copy price except Mid-May 1961 issue \$2.00; Mid-May 1961 issue \$2.95. Beyond Western Hemisphere, to those by title are architects and engineers, \$9.00 per year for 12 monthly issues not including Mid-May 1961 issue. Subscriptions from all others outside U. S., U. S. Possessions and Canada for 12 monthly issues, not including Mid-May issue, \$24.00 per year.

CHANGE OF ADDRESS: Subscribers are requested to furnish promptly both old and new address, sending, if possible, stencil impression from magazine wrapper; new postal zone number, if any, should be included. Allow one month for change.

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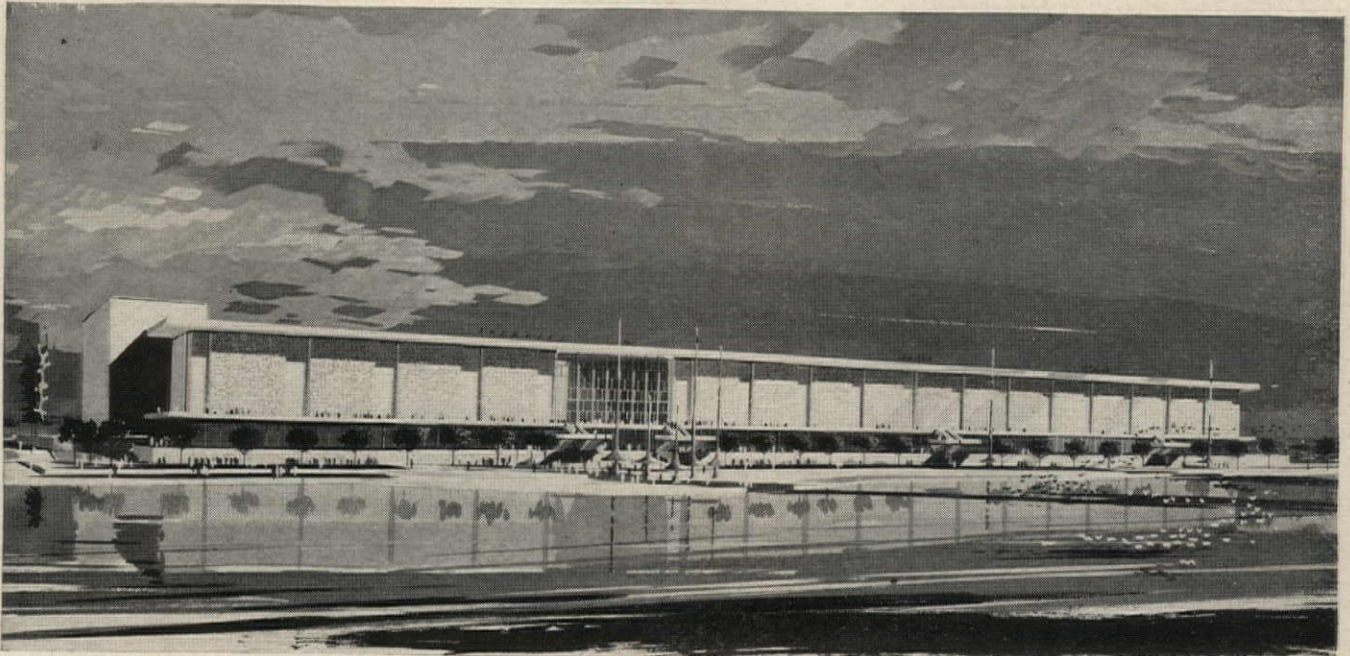
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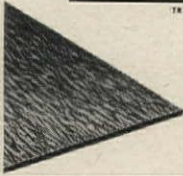
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Recognition for Engineers

We were regretting (this space, last month) the almost disdainful response of young architectural professors to the call of technology in the training of architectural students. The real point in it all is that we need better technology in building design than we commonly get. Nobody is specifically trained for the technical or engineering problems of building design—nobody, not architect, nor engineer.

Not engineer, not architect. If a young man were to feel an urge to study building design in the technical sense, he would be pretty well barred from advancing his ambitions in our current college curricula. If he were in architectural school, he would have to concentrate so heavily on esthetic design that, unless he were really gifted there, he would not be able to graduate from an architectural course. If he were an engineer, say electrical, he would have to study motor-generator design, transmission systems, electronics, and what not. He would probably get smart and go into missile programs.

The result of this, as Robert Hastings, of Smith, Hinchman and Grylls, has pointed out, is that we don't offer much recognition either to the "architect-engineer" or to the engineer interested in buildings; we lose that kind of lad to other professions. We are not offering good enough attractions to engineers to attract them to building design either before or after their schooling.

The point is enforced, indirectly perhaps, by Clinton Gamble, A.I.A., in a letter of transmittal for his little piece (to come) on how his office has used architectural and engineering draftsmen interchangeably (to

a certain extent.) He writes:

"... There are still some kind of built-in antagonisms in the engineering designers. When I try to pinpoint it I find it goes on even between the designers themselves. You see, basically I have an idea the design of mechanical equipment is a matter of making a lot of personal empirical decisions. Even the catalog information winds up being in this category. So a fierce personal defense by the designer is constantly necessary. I feel like an innocent by-stander caught in a gun battle between rival mobs. Probing this matter deeply in the pages of the RECORD would very likely lead to bloodshed..."

"My point is, of course, that we have moved so rapidly into the extensive mechanization of our spaces that we have borrowed a lot of engineering services from other fields, not building oriented. When we get mechanical designers who only know how to work exclusively on building problems perhaps they will feel comfortable enough in this environment to not be constantly antagonized by the interference and probing of laymen like myself. This cannot happen over night but I'd like to think our small changeover in our own office is a small step in the right direction."

Well, I doubt if bloodshed is imminent. But Gamble's comment does highlight the need for attention to the technical problems of building design, among both architects and engineers. His plan of attack is to get architectural and engineering draftsmen working together. But maybe a little recognition wouldn't be a bad idea.

—Emerson Goble

WHY AREN'T ARCHITECTS PLANNING U.S.A. INSTEAD OF MONUMENTS?

Architect Edward Durell Stone Asks a Big Question
In Interview with Architectural Student Jonathan Barnett

Are you supposed to ask me questions, or can I just start with something that has been on my mind for a long time [Mr. Stone began]?

Go ahead, by all means.

What I would really like to do is indulge in a little simple arithmetic. It seems to me that an architect is not entrusted with any important works until he is about fifty. Maybe there are some exceptions to this; but, in general, architecture is just not a young man's profession. It belongs to the men who are, say, between forty-five and sixty-five. There are just about twenty years when people trust you enough to let you work with large sums of money—and all building projects today involve millions of dollars, no matter how innocent they seem in the beginning.

So let us say you have twenty years. Now I think of the architect as a creative person. I think that ideally his buildings should bear his stamp and signature. Buildings have grown so complicated technically, and involve so many consultants, that it seems to me it would be difficult for such an architect to account for more than two or three buildings a year.

So that in twenty years' time you might do fifty buildings.

To me, that seems a very modest attainment, measured against the tremendous volume of building done in this country. What I'm leading up to is that buildings have become so demanding of the architect's time that, as the years go by, the architect is becoming less and less accountable for the overall building of our country.

At some juncture architects have to reflect on their destiny. They must decide whether placing potential masterpieces in the midst of chaos and disorder—as you must acknowledge most of our cities are—is the career that they had bargained for.

We are turning out bits of consumer goods for a prosperous society which refuses to face any of the important issues of planning.

I'm not chronically a pessimistic person; in fact I'm constitutionally

more a Pollyanna type: but these are the stern realities.

With private ownership of property it is very difficult to make drastic changes. We have dropped 50 million automobiles into cities that were planned for the horse and buggy. Without some drastic overall planning, our living conditions will continue to get steadily worse, instead of improving. Twenty years from now we may find that our cities are obsolete.

The skill of individual architects in Russia is not what ours is, and never has been—traditionally. Nevertheless, working on the plan for rebuilding Moscow alone there are thirteen divisional offices, with 200 architects in each. This is the kind of work I think architects here should be doing.

But, as you say, it is difficult to produce such sweeping changes in a democratic society. How could such reforms be accomplished here?

I hopefully would wish that this could be accomplished by education and the willingness of communities to establish high standards of excellence that would combat the negative forces. And I think that, first of all, the government has to be made to see this.

Then you would support the proposal for a Department of Urban Affairs?

I think that such a department will have to be. I've thought about this for a long time. We don't seem to realize that what is built is an enormous part of our national wealth. I've always said that the Department of Agriculture would be a good prototype. Look at the progress in contour plowing and flood control we have had in the last generation. We should have a similar educational force to guide the planning, the physical destiny, of our whole country.

I think this is very important. The situation is desperate. In my time I have seen Long Island ruined, it used to be a park. Cape Cod used to be a reminder of our past, but anything is considered progress as long as you

can turn a fast buck.

If you keep your eyes open as you travel across the country, you see how ugly, how pathetically ugly, everything has become. And it hasn't taken us long to get it that way.

All these things point out the futility of architecture as we practice it today. You might, if you're lucky, produce a great building. In the meantime, the country is a shambles.

What about the theory that modern architecture would reestablish a vernacular, and thus restore the vitality of all building?

The office building is now in a pretty well-formulated vernacular. Are you very encouraged by that?

But couldn't you say that the architect's job is to develop prototypes?

I used to think that was what we were doing; but when you see the debasement of these ideas by commercial approximations of them—why, they look pretty depressing.

I've about given up the idea.

How then would you define the architect's task?

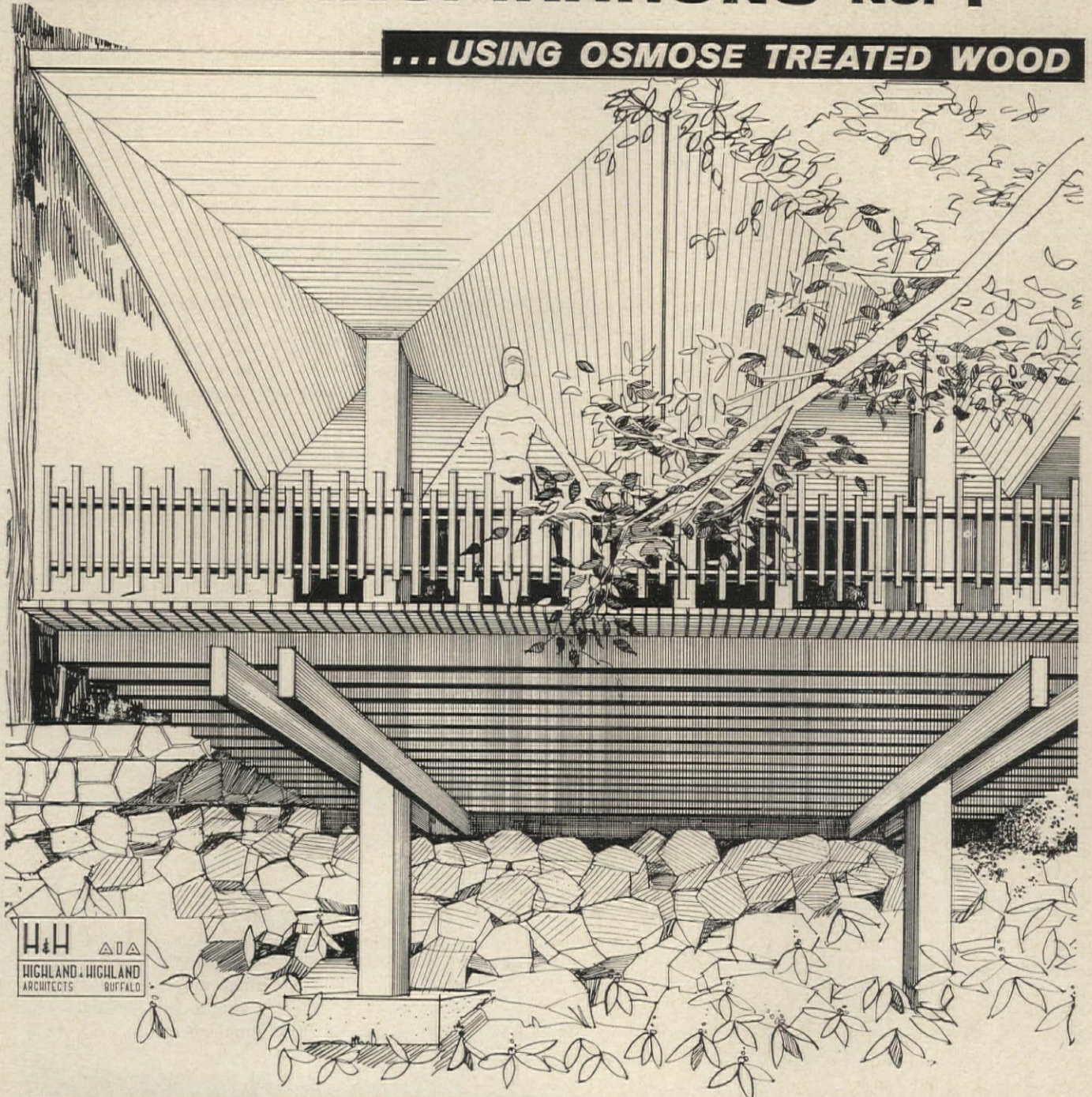
I think that as informed observers it is beholden to us to point out to our communities and to the Federal Government the shambles that we have, to try to make everyone else see as we do.

I think the architects and planners and landscape architects of each state should be retained by the Federal government to undertake the planning of each state: its villages, its towns, its cities. We always build in this country as if we were tenants. Now we have to husband our resources, we have to think of future generations. We need plans, overall plans, that anticipate 50 or a 100 years of growth.

I think that too often architects are engaged in a game among themselves. It is a delightful game, to try and find new and unusual and beautiful things; but we aren't working on fundamental problems of real concern to the future of our country.

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WINNERS ANNOUNCED IN THIRD ANNUAL MASTIC TILE COMPETITION

Winners have been selected in the Third Annual \$25,000 Architects' Competition sponsored by the Mastic Tile Division of the Ruberoid Company.

Extending the concept of two previous competitions which were concerned with housing, educational and recreational facilities for middle-income families, the third competition called for the development of hospital facilities on the same project site devoted to the community educational-recreational plant. "Long-Range Planning for the Medical Care Facilities in the Community" was the 1961 theme.

The program asked development of a coordinated hospital system on the general framework formulated by the U.S. Public Health Service. Suggested was consolidation of the community clinic with the rural hospital to form a suburban general hospital. This would be expanded into a larger district hospital with full complement of specialty services and staff teaching programs.

Jury panel head was E. Todd Wheeler, F.A.I.A., director of hospital planning, Perkins and Will, Chicago, and chairman of the A.I.A. Committee on Hospitals and Health. Other jury members were: Donald S. Nelson, F.A.I.A., Broad and Nelson, Dallas; Donald E. Neptune, A.I.A., Neptune & Thomas and Associates, Pasadena, Calif.; James J. Souder, A.I.A., Kiff, Colean, Voss and Souder, New York; Ray E. Brown, director of the graduate program in Hospital Administration, University of Chicago. Professional adviser was A. Gordon Lorimer, F.A.I.A., New York.

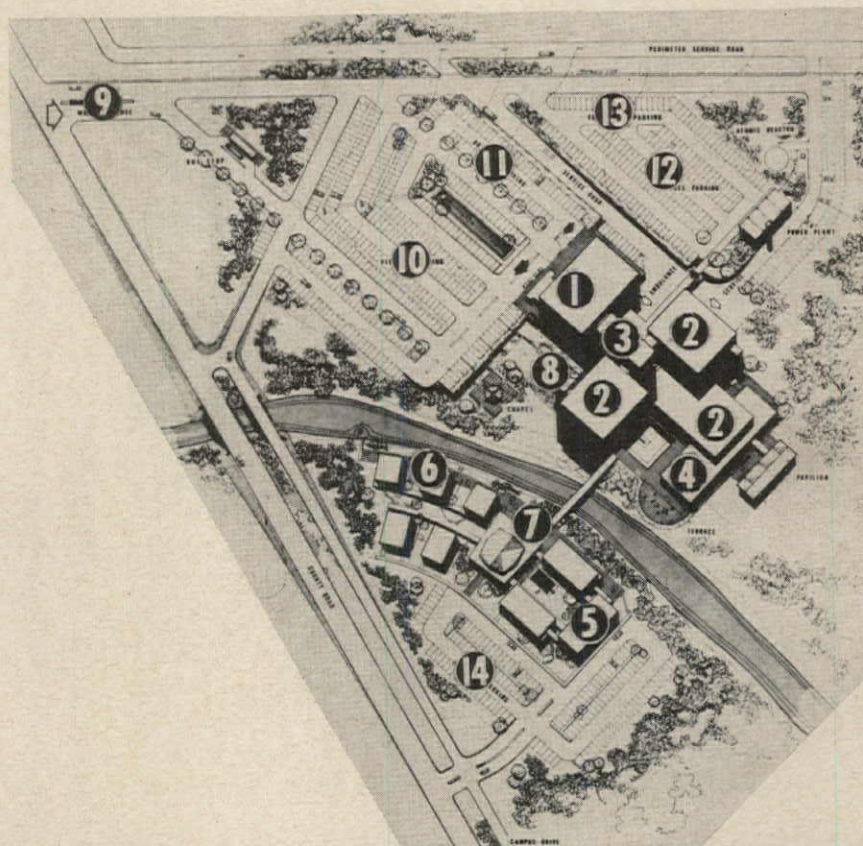
Two categories of prizes were awarded. All 100 qualified entries were eligible for national awards with a special group of prizes for students. For the first time a major prize was won by a group of students.

Shown on these pages are the national grand, second and third prize winners. \$500 national merit awards went to: Miller Edward Gerardy and Richard W. Cramer, Oklahoma State

University; Masao J. Itabashi and Harutun Vaporciyan of Smith, Hinchman & Grylls Associates, Inc., Detroit; Pacifico Balcalzo and Borivoj Rieb of A. Epstein & Sons, Inc., Chicago; Marvin Berman and Stanley S. Kogan of Berman & Kogan, Los Angeles; Alan Bentley Glass, Forrest L. Johns and David M. Griffin, Oklahoma State University; Ted Granzow of Skidmore, Owings & Merrill, New York, Robert D. Guss Jr. of Edward Durell Stone, New York, and Deltas H. Harder, Ohio State University.

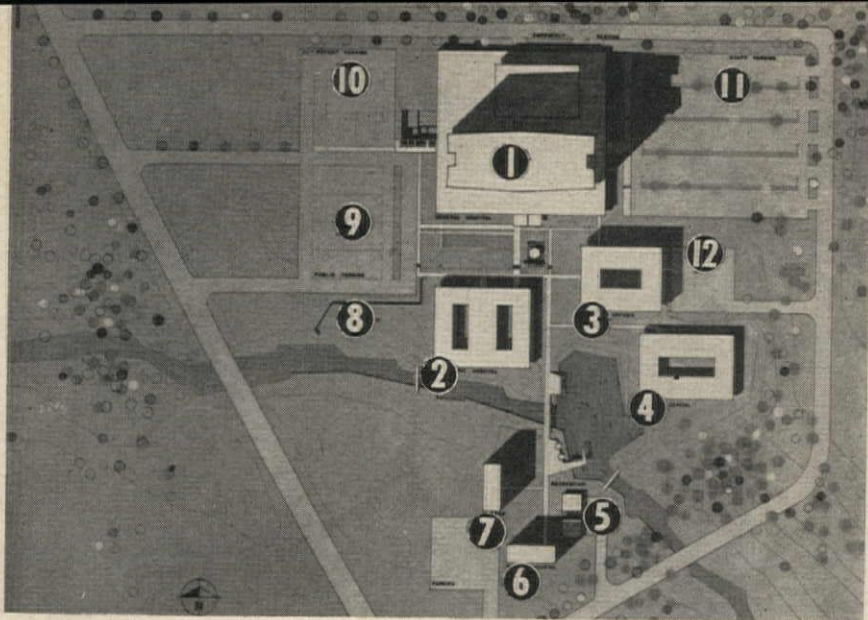
The \$2000 first student prize winner is also shown. \$1000 second prize went to Miller Edward Gerardy and Richard W. Cramer, Oklahoma State University; \$500 third prize, to Don Dommer and Gordon Kovell, North Dakota State University; \$250 merit awards to: Stanley E. Abercrombie Jr. and John M. Ellis, M.I.T.; Blythe S. Brewster, Pratt Institute; John L. Lawler, University of Minnesota; William E. Pedersen Jr., University of Minnesota.

\$10,000 Grand Prize: Victor A. Cusack and Ronald Meza of Charles J. Luckman Assoc., Beverly Hills, Calif., and James S. Moore of Medical Planning Assoc., Beverly Hills. "A well-conceived, well-balanced plan for hospital operation and economy of hospital construction, relating well to present services and those to be added in future . . . expresses the suburban quality called for"



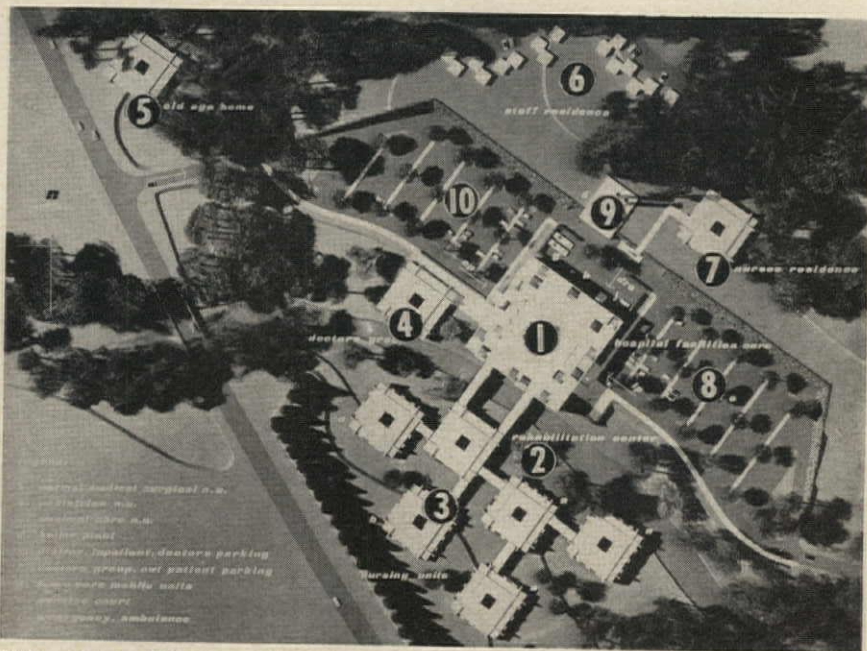
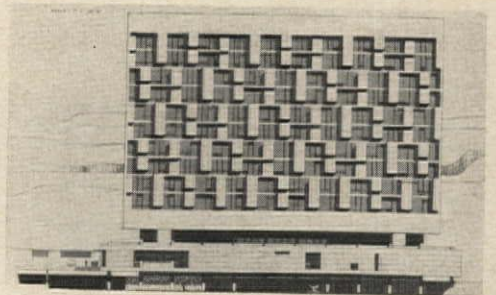
1) Clinic and Adjunct Building 2) Nursing Unit 3) Vertical Circulation 4) Long Term Nursing 5) Dormitories 6) Married Students' Units 7) Student Center 8) Out-Patients' Patio 9) Main Entrance 10) Visitor Parking 11) Doctors' Parking 12) Nurses' Parking 13) Employees' Parking 14) Student Parking





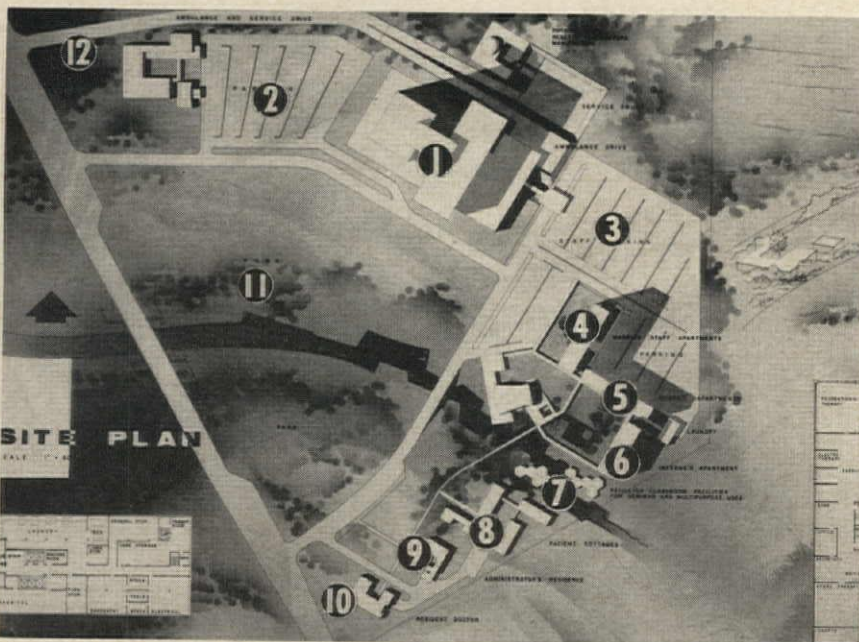
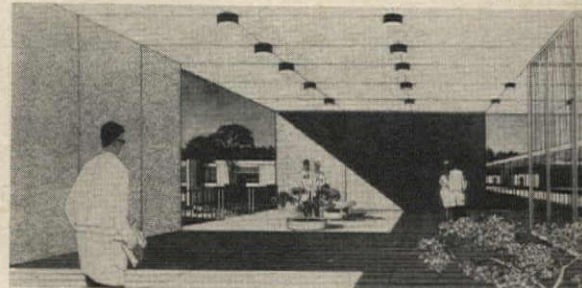
1) General Hospital 2) Psychiatric Hospital 3) Doctors' Offices 4) Medical School 5) Resident Doctors' Housing 6) Nurses' Housing 7) Interns' Housing 8) Recreation 9) Public Parking 10) Out-Patient Parking 11) Staff Parking 12) Doctors' Parking

\$5000 Second Prize: Jimmy W. Bruza, James F. Knight, James S. Daley and William C. Watson Jr., Oklahoma State University. "One whose concept captures the best of accepted hospital planning received, with an architectural approach, technique that is direct and concise . . . pleasing mass relationships"



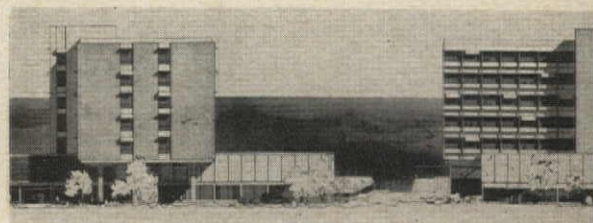
1) Hospital Facilities Core 2) Rehabilitation Center 3) Nursing Units 4) Doctors' Group 5) Old Age Home 6) Staff Residence 7) Nurses' Residence 8) Visitor, In-patient, Doctors' Parking 9) Boiler Plant 10) Doctors' Group, Out-Patient Parking

\$2500 Third Prize: John V. Sheoris of Harley Ellington, Cowin and Stirton, Inc., Detroit, and William J. Johnson and Clarence Roy of Johnson/Roy, Ann Arbor, Mich. "A very ingeniously thought out scheme . . . its non-hospital look, through dispersion, attempts to recognize the countryside atmosphere of the site"



1) Hospital 2) Parking 3) Staff Parking 4) Married Staff Apartments 5) Nurses' Apartments 6) Intern's Apartment 7) Pavilion Classroom Facilities 8) Patient Cottages 9) Administrator's Residence 10) Resident Doctor 11) Park 12) Ambulance and Service Drive

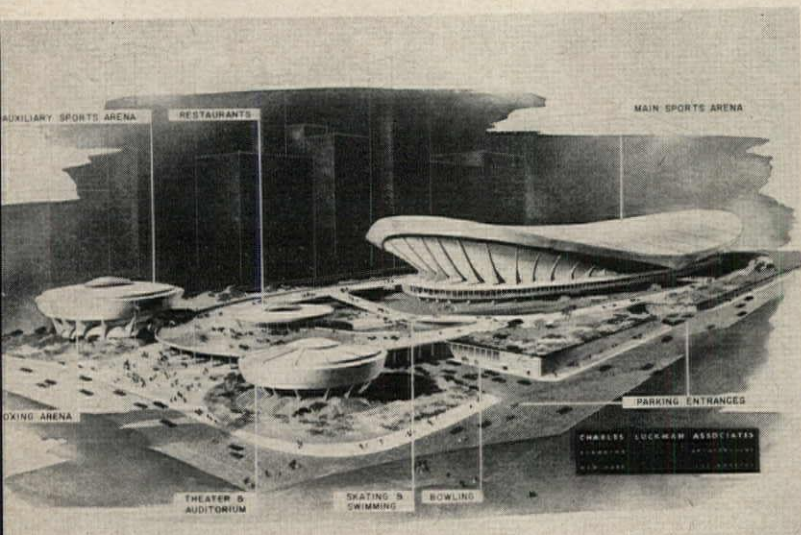
\$2000 First Prize (Student Group): Alan Bentley Glass, Forrest L. Johns and David M. Griffin, Oklahoma State University. "A good clean standard solution, pleasantly disposed on the site, grows easily and has an overall expansion plan well thought out . . . economically the plan would fit into a suburban financial program"



PENN STATION: SITE FOR NEW MADISON SQUARE GARDEN



Madison Square Garden Center, to be built over Penn Station



Earlier design for undisclosed site



Eighth Avenue Entrance to projected new Garden

A new \$75 million Madison Square Garden Sports and Entertainment Center designed by Charles Luckman Associates will be built over Pennsylvania Station, New York City. Another year will be required to complete architectural and engineering specifications for the 3½ million sq ft center and two additional years for construction. The site of nearly nine acres and air rights over Penn Station facilities and tracks is to be acquired by Madison Square Garden Center, Inc., formed by Graham-Paige Corp. and the Pennsylvania Railroad.

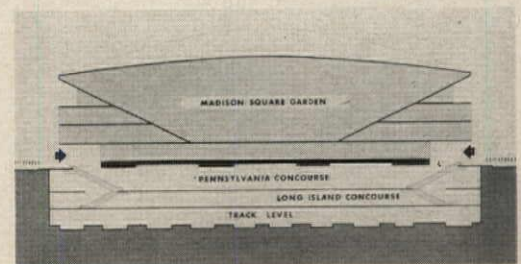
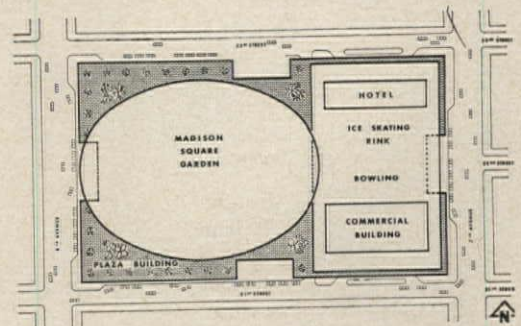
The project will comprise a new, larger Madison Square Garden to seat 25,000; a 4000-seat auxiliary arena and roof-top ice palace, a 750-room hotel of 28 stories, a 34-story commercial building which will include a major bowling center and shopping areas.

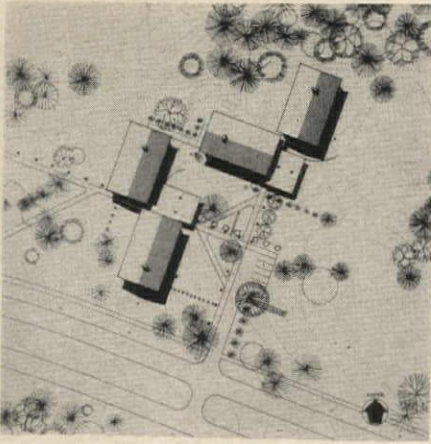
Of the total floor area, the Center will occupy 2,347,000 sq ft and Penn Station, 1,092,000 sq ft. The existing Penn Station will continue to operate during the construction period. At its completion, an all new Penn Station will occupy the concourse level areas. Complete facilities of the station will continue to function at concourse level throughout construction.

Peripheral commercial areas, intercommunicating circulation and service areas for the entire Center will be contained in the Plaza Building, which will rise three stories above street level and cover the entire site.

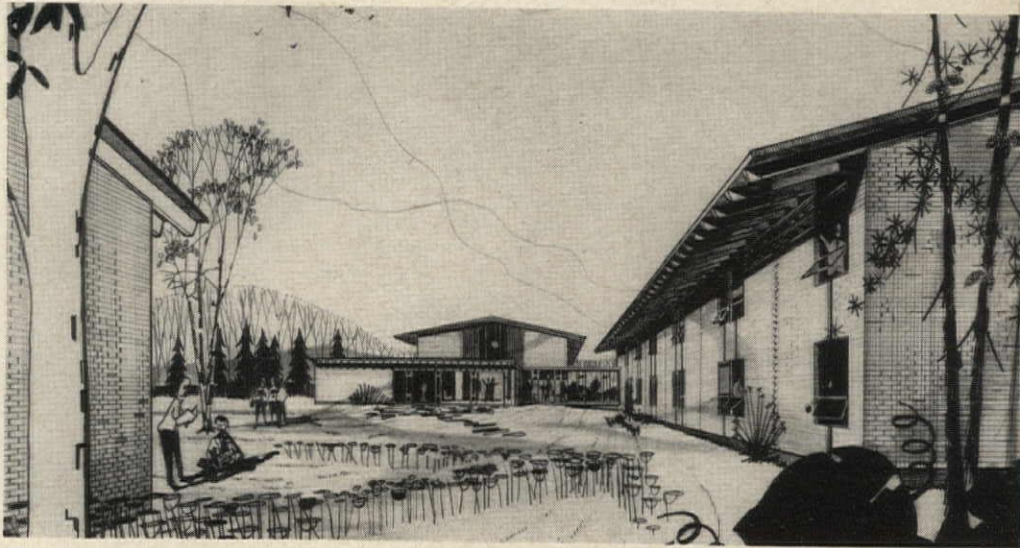
Shown on this page is a rendering of the presently proposed Madison Square Garden Center, a site plan and a cross section. Also shown is a rendering of an earlier design for the Center by Charles Luckman Associates, announced last year for an undisclosed location.

The principal structure of the Center, the new Garden, will consist of radial reinforced concrete cantilever ribs, rising upward and outward to support the seating and terminating in an elliptical concrete compression ring at top.





Michigan State University Oakland Students' Residence Units, designed by Louis G. Redstone, Architects, Inc., Avner Naggar, Assoc. Architect, will be grouped to form villages. Each dorm's two wings will have "flexible connection," a one-story lounge and house-master apartment



(far left) To be built under New York City's newly adopted zoning code, this \$36 million 32-story office building designed by Skidmore, Owings & Merrill will occupy little over half the site. Structure will have masonry facade with horizontal sunshades. For two major tenants it will be divided in half functionally, with separate entrances, lobbies, elevator banks. Owner: Erwin S. Wolfson; contractor: Diesel Construction Co.

(left) Construction has begun on \$5 million 17-story First National Bank Building, Albuquerque, N.M., to be focal point of a 5½ acre site known as First National Center. With an exterior of white reinforced concrete and gold ceramic tile and glass panels, the 212-ft structure will be supported by outer walls and core. Architects are Flatow, Moore, Bryan and Fairburn; general contractor: the Webb Corp.

Addendum:

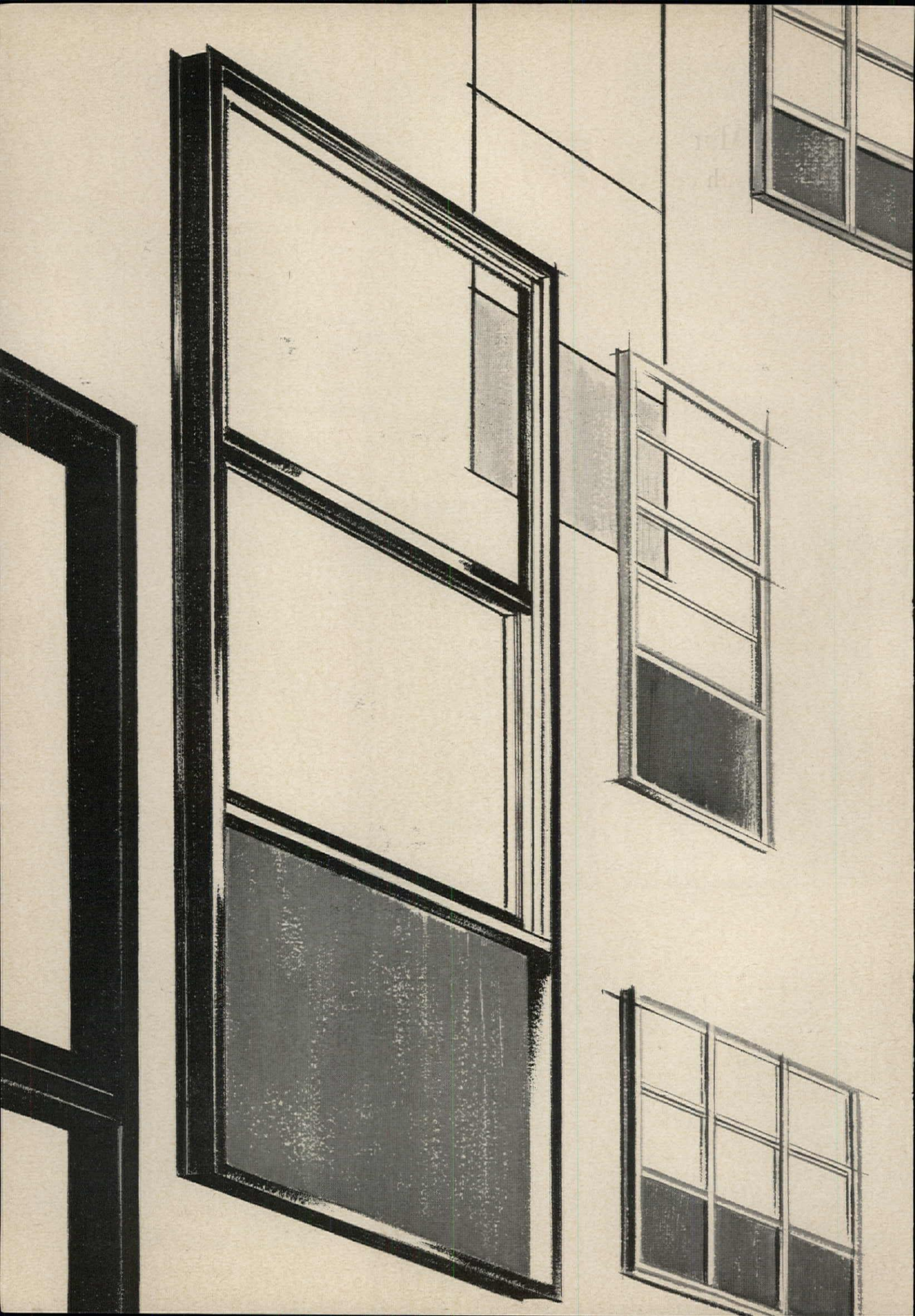
Through a printer's error, the captions on these photos (August, p. 12) were transposed

(right) Vincent Kling designed this 28-story square office building for Baltimore. To be completed by fall 1962, the 360-ft-high structure comprises approximately 400,000 sq ft. Exterior metal and glass wall provides deeply splayed window jambs for built-in sun control. Developers: Blaustein and McCloskey & Co.

(far right) United States Gypsum Building, Chicago, designed by Perkins & Will, is diagonally placed on site, providing space for street-level plaza. Each face of 17-story building has four white masonry material columns with black spandrel area between each floor. Completion is slated for early 1963

Lawrence S. Williams








New...from CECO

Aluminum windows and curtainwalls with double-hung, single-hung or fixed windows

At last, here's a curtainwall that permits imaginative building design—enabling the architect to create a "character unto itself" for each building. And the components are of heavier-than-average aluminum, of custom manufacture. They can be anodized in Ceco's new, large-unit Alumiliting plant, the most modern in America. They are practical and reasonably priced, made so through design engineering.

This new series (160 for double-hung windows, and 165 for single-hung) means erection speed for the architect and contractor, and minimum maintenance for the building owner. Here are some of the reasons why:

- 
- Sleeving mullions are an integral part of each unit . . . conventional mullions are not needed. This new product permits shadow-line construction at low cost, while providing the same strength as add-on mullions. Material and labor costs are reduced. Available in large units, easy to erect.
 - Double-contact weather stripping on vertical and horizontal sections of operating sash give maximum protection from air and dirt. For minimum maintenance, windows can be furnished with inside bead glazing. This facilitates replacement of broken glass . . . from inside the building.
 - There are no projections with double-hung, single-hung or fixed windows. Windows of this type are ideal for ground level exteriors.
 - Panels of porcelain, ceramic, plastic, steel or stone can be used in several depths without modification of the curtainwall elements, offering the architect creative freedom. This feature allows use of thin panels when back-up walls are required, and thicker panels to satisfy U values without back-up walls.
 - To maintain a neat exterior face, all window frames are designed with offsets so exterior screens can be inserted flush with the surface of the curtainwall.

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H(M)OTELS LOOK BIG

THE EXPLOSIVE GROWTH of "motel" and "hotel" building in the late 1950's has raised the inevitable questions. How durable is the trend? Are we in danger of overbuilding, particularly in the "motel" field? Current construction statistics on "motels and tourist courts" are far from gloomy but do contain a cautionary note. After a more than doubling of their dollar volume between 1956 and 1959, contract awards for motels abruptly leveled off in 1960 at \$315 million, fractionally under the 1959 mark. For the first half of 1961, contracts declined three per cent from the same period last year. Sharply contrasting with the recent slackening in the pace of "motel" building, however, is the record of its companion, "hotel" building. Spurred on in particular by the revival of large-scale construction in New York City, contracts for hotels by midyear 1961 had soared 80 per cent over their 1960 level.

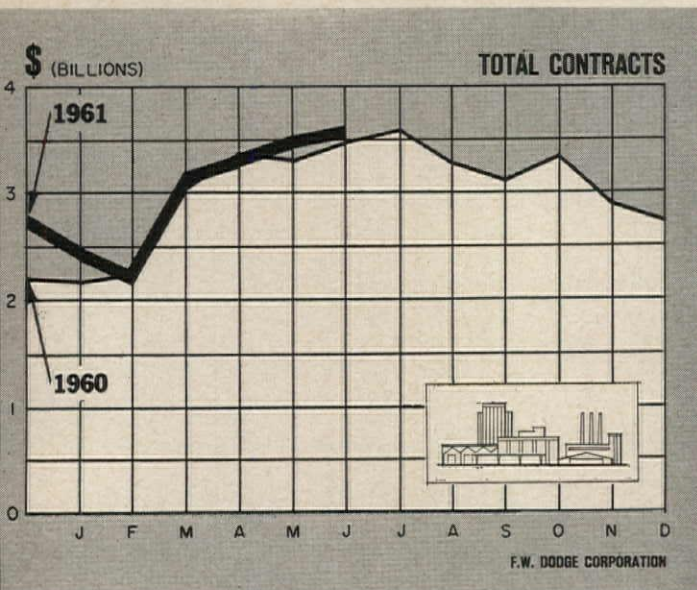
BUT WHAT IS A H(M)OTEL? Even within large cities, it has become increasingly difficult to classify many of the new hostelries as distinct motels or hotels. The emergence of the "motor hotel," combining features of both building types, has made the statistical compiling job a minor nightmare. If, therefore, we consider the two categories as a whole, we find a steadier upward trend in contracts for the period 1956 through the first half of 1961 than exhibited by either "motels" or "hotels" alone. Together these building types provided a more than half billion dollar market for construction materials and services last year, easily an all-time high for any complete year. Another record high was set for the first half totals this year.

LARGELY RESPONSIBLE for the growth of this market has been the increasing popularity of the "motor hotel." As an illustration, take the case of the heavily-travelled stretch of Maine coastline between the New Hampshire border and Portland, Maine. In the peak of the recent summer season, you would have found many "tourist courts" on and off Route 1 practically deserted. Some of the older resort hotels in the area were in serious financial trouble from lack of patronage while operating costs continued to mount. A few had closed down completely. But business was brisk at some of the newer and larger "motels" or "motor hotels." These were offering the auto traveler both the flexibility of the small motel and many of the "extras" of the luxury hotel.

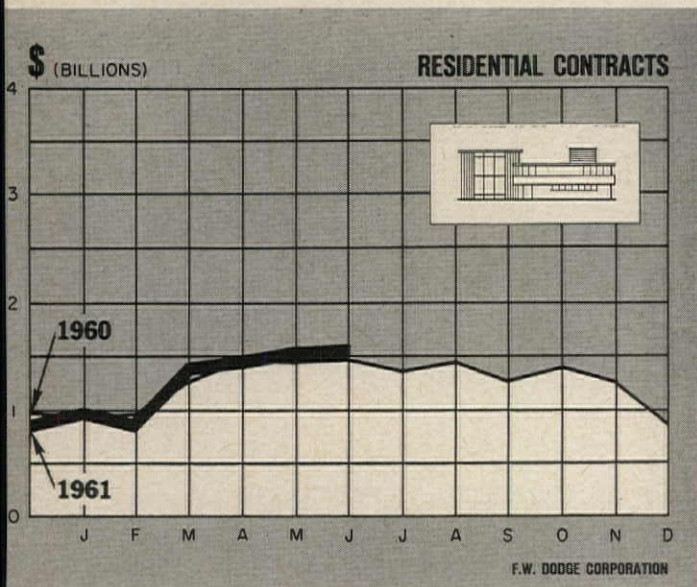
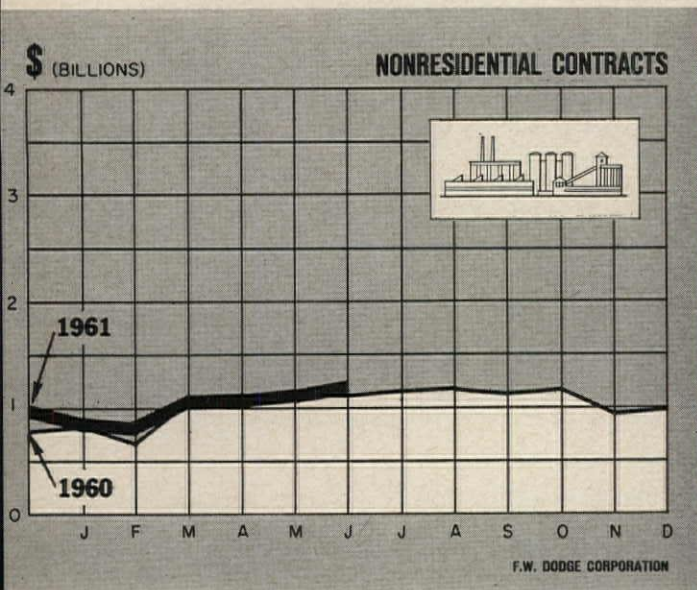
THE "MOTOR HOTEL" certainly appears to represent the "wave of the future" in hostelry building. Some of the reasons are obvious: the increasing importance of the automobile and airplane for business and pleasure traveling (airports make excellent sites for motor hotels); the massive highway construction program; the lengthening of vacation periods and vacation trips. But furthermore, travelers in general are becoming more selective in their choice of lodgings. The traveling public is demanding the combination of convenience and special services that the motor hotel is best equipped to provide.

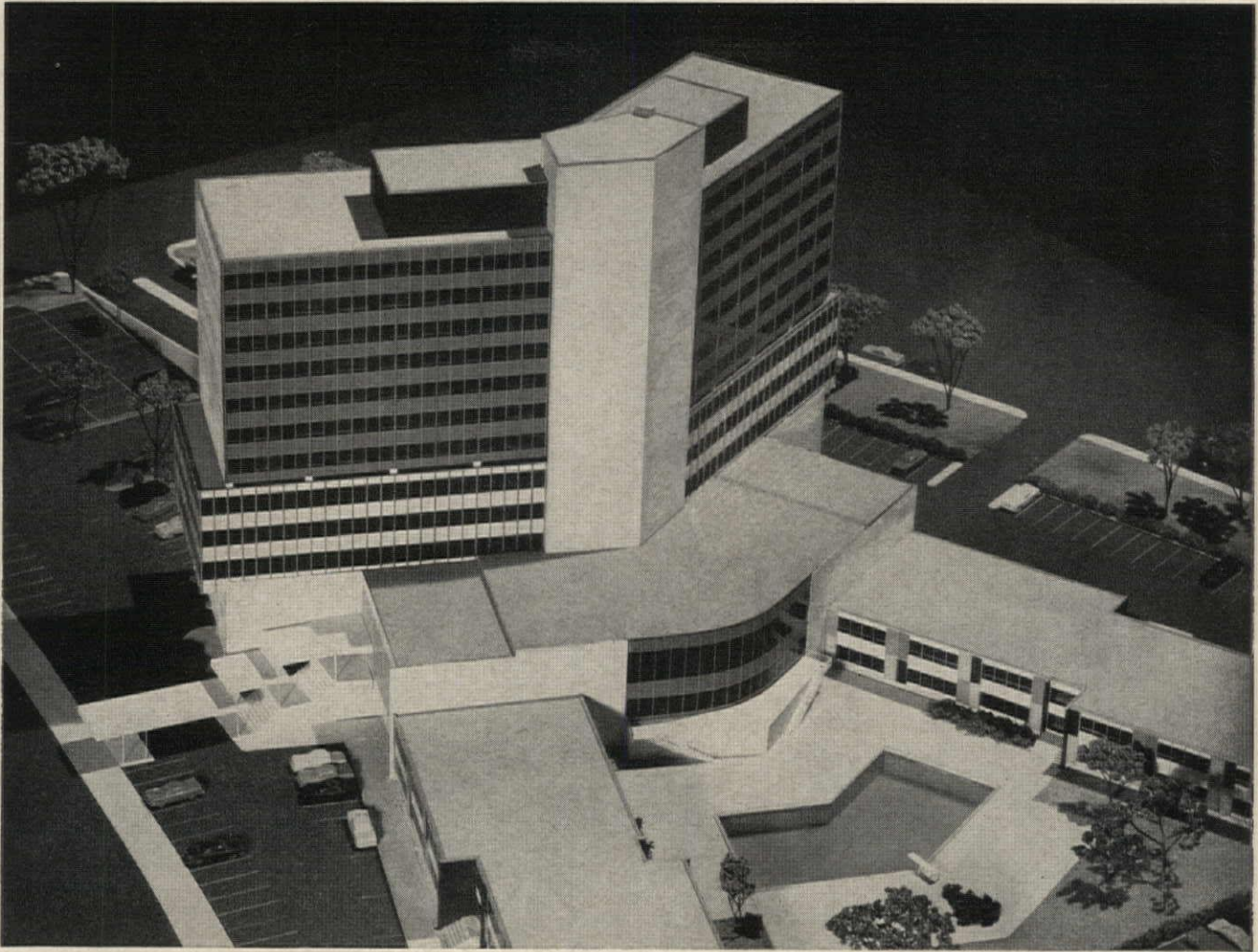
The decade of the Sixties presents a bright prospect for hotel-motel building. True, the fantastic percentage gains in contracts during the late 1950's probably will not be repeated during the next few years. In this sense, the "splurge" will not last. But the 1960's will be a period of solid growth from the high level of the recent past. That seems assured. Most important to the architectural profession, however, the new hotel-motel market is offering greater and greater opportunities for its active participation. Anyone can design a box cabin with outhouse: but a "motor hotel," that's something else.

EDWARD A. SPRAGUE, Associate Economist
F. W. Dodge Corporation
A McGraw-Hill Company



Total contracts include residential, nonresidential, heavy engineering contracts





GOLDEN TRIANGLE MOTOR HOTEL, Norfolk, Virginia. Architect: Anthony F. Musolino; General Contractor: Blake Construction Company; Mechanical Contractor: Hicks & Ingle Company; Distributor for Anaconda: Hajoca Corp.

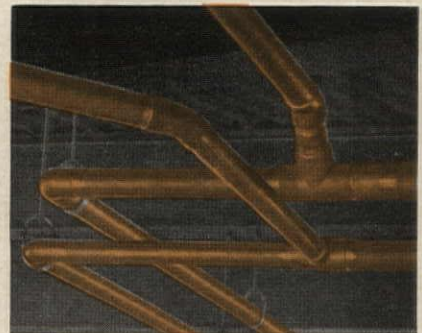
6 miles of Anaconda Copper Tube ($\frac{1}{2}$ " to 5") installed "easier and quicker"

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Add to these cost-saving installation advantages, *longer life* and *less maintenance* and you have the reasons why Anaconda Copper Tube is so often the choice of those who demand quality in plumbing materials. For complete information about Copper Tube and Fittings for general plumbing, heating, air conditioning and refrigeration, write for free copy of Publication B-1, Anaconda American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

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Presented by Clyde Shute, Director of Statistical Policy, Construction News Div., F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assoc. Inc.

Labor and Materials: U.S. average 1926-1929=100

NEW YORK

ATLANTA

PERIOD	RESIDENTIAL		APTS., HOTELS, OFFICE BLDGS.	COMMERCIAL AND FACTORY BLDGS.		RESIDENTIAL		APTS., HOTELS, OFFICE BLDGS.	COMMERCIAL AND FACTORY BLDGS.	
	Brick	Frame	Brick and Concrete	Brick and Concrete	Brick and Steel	Brick	Frame	Brick and Concrete	Brick and Concrete	Brick and Steel
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
1949	243.7	240.8	242.8	246.6	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	274.9	271.8	212.8	214.6	204.2	202.8	205.0
1952	278.2	274.8	271.9	265.2	262.2	218.8	221.0	212.8	210.1	214.3
1953	281.3	277.2	281.0	286.0	282.0	223.0	224.6	221.3	221.8	223.0
1954	285.0	278.2	293.0	300.6	295.4	219.6	219.1	233.5	225.2	225.4
1955	293.1	286.0	300.0	308.3	302.4	225.3	225.1	229.0	231.5	231.8
1956	310.8	302.2	320.1	328.6	324.5	237.2	235.7	241.7	244.4	246.4
1957	318.5	308.3	333.1	345.2	339.8	241.2	239.0	248.7	252.1	254.7
1958	328.0	315.1	348.6	365.4	357.3	243.9	239.8	255.7	261.9	262.0
1959	342.7	329.0	367.7	386.8	374.1	252.2	247.7	266.1	272.7	273.1
1960	351.6	337.2	377.7	395.8	380.6	259.2	253.3	274.7	282.5	278.8
April 1961	357.4	340.2	387.9	409.5	387.8	256.8	250.1	275.2	284.0	277.6
May 1961	362.3	342.1	396.8	422.0	396.4	256.2	249.1	275.3	284.2	274.9
June 1961	365.5	345.5	402.6	427.3	400.7	254.8	247.3	275.0	284.0	274.5
			% increase over 1939					% increase over 1939		
June 1961	195.9	182.3	208.0	220.3	208.0	195.2	197.6	189.2	191.6	189.9

ST. LOUIS

SAN FRANCISCO

1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.6	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1	243.1
1952	259.1	253.2	249.7	255.0	249.6	250.2	245.0	245.6	248.7	249.6
1953	263.4	256.4	259.0	267.0	259.2	255.2	257.2	256.6	261.0	259.7
1954	266.6	260.2	263.7	273.3	266.2	257.4	249.2	264.1	272.5	267.2
1955	273.3	266.5	272.2	281.3	276.5	268.0	259.0	275.0	284.4	279.6
1956	288.7	280.3	287.9	299.2	293.3	279.0	270.0	288.9	298.6	295.8
1957	292.0	283.4	295.2	307.1	302.9	286.3	274.4	302.9	315.2	310.7
1958	297.0	278.9	304.9	318.4	313.8	289.8	274.9	311.5	326.7	320.8
1959	305.4	296.4	315.0	329.8	323.9	299.2	284.4	322.7	338.1	330.1
1960	311.4	301.0	322.2	337.2	329.2	305.5	288.9	335.3	352.2	342.3
April 1961	313.6	300.9	326.2	343.3	331.0	306.9	289.6	338.9	355.8	344.6
May 1961	316.1	302.9	329.1	347.6	332.1	310.7	290.7	347.1	367.4	353.7
June 1961	316.7	303.5	329.9	348.2	332.7	310.8	292.4	346.9	364.8	352.1
			% increase over 1939					% increase over 1939		
June 1961	187.4	183.6	177.9	190.6	179.6	194.3	194.5	195.5	199.3	202.2

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

index for city A = 110

index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

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

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

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

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

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



New Architectural Uses for Aluminum Grating

Here . . . new applications for aluminum grating . . . exacting installations where quality equal only to BORDEN'S will do:

- 1 This shows BORDEN aluminum grating used in a system of drain trenches throughout Mellon Square Park, Pittsburgh, Pennsylvania.
Architects: Mitchell and Ritchey, Pittsburgh, Pennsylvania
- 2 BORDEN pressure-locked type grating, of gold-anodized aluminum, forms the facade of this dramatic new structure. The Congregation Beth El Synagogue, South Orange, New Jersey.
Architects: Davis, Brody and Wisniewski, New York, New York
- 3 BORDEN pressure-locked aluminum grating fabricated as foot scrapers for use at a school in East Orange, New Jersey.
Architect: Emil A. Schmidlin, East Orange, New Jersey
- 4 BORDEN pressure-locked aluminum grating used for maintenance-free fencing at J. L. Hudson's Northland Shopping Center, Detroit Michigan.
Architect: Victor Gruen & Associates, Detroit, Michigan
- 5 Sunshades of BORDEN pressure-locked aluminum grating permit passage of light and air while screening strong sunlight at the Lone Star Gas Company Office Building, Dallas, Texas.
Architect: George L. Dahl, Dallas, Texas

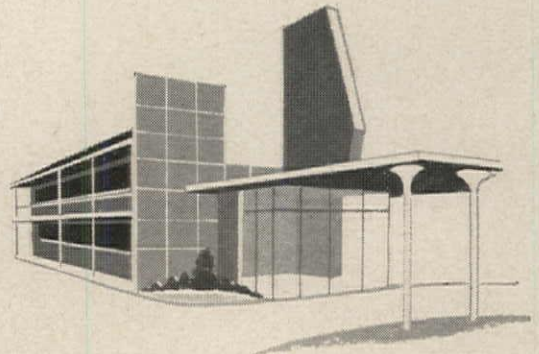
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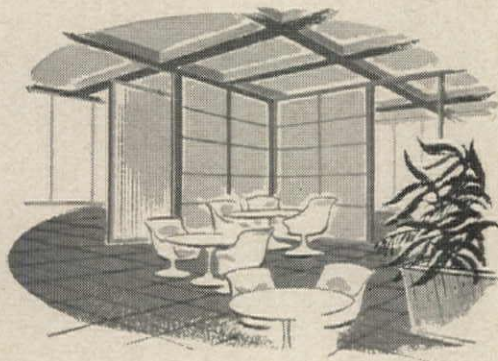
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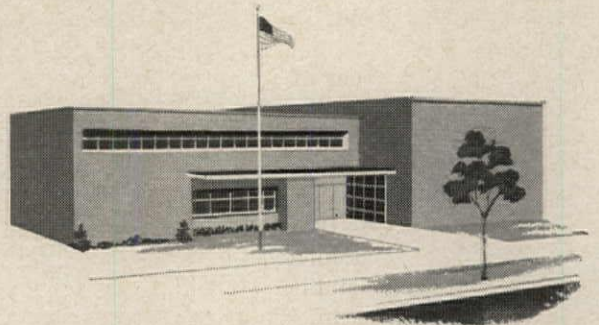
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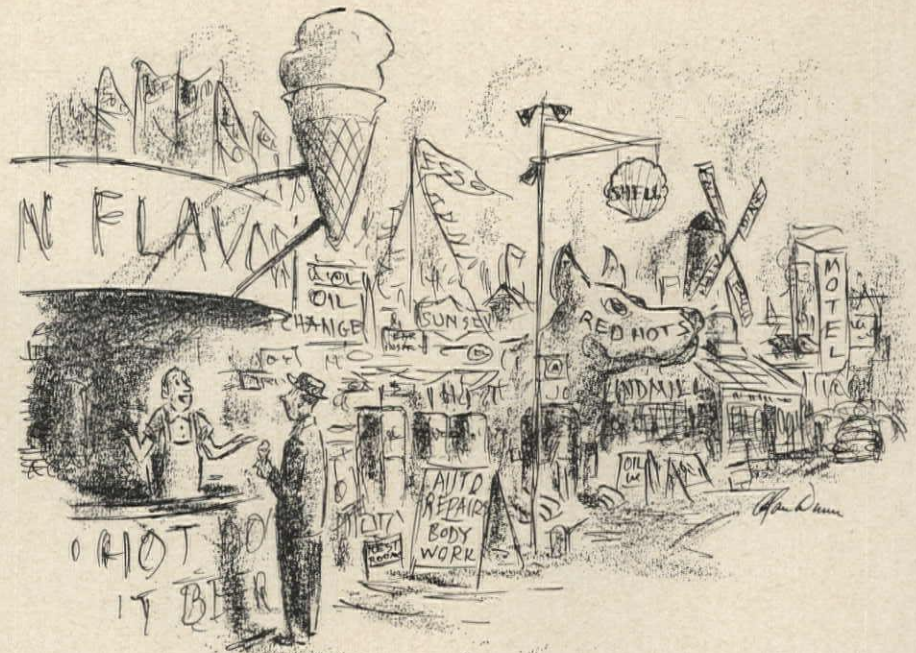


Linen Supply

Association of America

and National Cotton Council · 22 West Monroe Street, Chicago 3





—drawn for the Record by Alan Dunn

“What more can you ask? The neutron bomb doesn't destroy structures—only people!”

**Caudill Appointed Chairman,
Rice U. Architecture Dept.**

William W. Caudill, partner of Caudill, Rowlett and Scott of Houston, Oklahoma City and Stamford, has been appointed chairman of the Department of Architecture, Rice University.

He was to have assumed full responsibility for the teaching program and administration for the Department on September 1. Prof. Caudill will continue to practice architecture, and there will be

no major changes in his firm.

When asked by ARCHITECTURAL RECORD for comment, the new dean had this to say: “This may sound strange coming from Texans, but we at Rice have absolutely no ambition for bigness. We do have high hopes for increased excellence. This should be achieved because our students are highly selected. Every student comes to Rice on a scholarship. The potentials for architectural leadership are tremendous. Who knows, in a few years, we might even have us a great school of architecture, and that would be a switch—to discover that architects can be raised on the Gulf Coast as well as the Atlantic Coast. Of course, we would not wish to disturb the ecology of the architect to the

endangerment of the profession, but the profession is already living dangerously.

“About pedagogy: For the time being, Rice is committed to integrated subject matter and team teaching.

“About aims: Rice's purposes are to teach architecture, to create concepts, to see that practitioners apply these concepts, and to produce creative leadership in our profession.

“About teachers: We have three new ones. Bill Lacy, a Caudill, Rowlett and Scott designer, will be my new administrative assistant. Paul Grillo, a highly theoretical and stimulating architect-teacher, will be the fifth year critic. Then, of course, Rice will have me, a hard-nosed practitioner, as the new chairman.”

A former teacher and research architect at Texas A & M and a visiting critic at such schools as Princeton, Cornell and Washington University, Prof. Caudill holds a Bachelor of Architecture from Oklahoma State University and a Master of Architecture from M.I.T. He was awarded an Honorary Doctor of Laws Degree by Eastern Michigan University in 1957.

**Leon Chatelain Is
BRI President**

Leon Chatelain Jr., F.A.I.A., was to begin his first term as president of the Building Research Institute on July 1. A past president of the American Institute of Architects, Mr.

Chatelain is a partner in the Washington, D.C., architectural firm of Chatelain, Gauger and Nolan.

Elected BRI vice presidents are: Peter B. Gordon, vice president, Wolff & Munier, Inc., New York; Harold D. Hauf, vice president for design and planning, Charles Luckman Assoc., Inc., Los Angeles; and Graham J. Morgan, president, U.S. Gypsum Company, Chicago.

The following have been appointed to serve 3-year terms on the BRI Board of Governors by the National Academy of Sciences-National Research Council, the Institute's parent organization: Glenn H. Beyer, director, Center for Housing & Environmental Studies, Cornell University, Ithaca, N.Y.; Leon Chatelain Jr.; N. S. Collyer, president, F. H. Sparks Co., Inc., New York, N.Y.; Albert G. H. Dietz, professor, M.I.T., Cambridge, Mass.; John M. Kyle, chief engineer, The Port of New York Authority, New York, N.Y.; Perry I. Prentice, editor & publisher, *House & Home*, New York, N.Y.; D. Kenneth Sargent, dean, School of Architecture, Syracuse University, Syracuse, N.Y.; and R. J. Short, director of engineering exploration, Procter & Gamble Co., Cincinnati, Ohio. Otto L. Nelson, vice president for housing, New York Life Insurance Co., was named to fill a two-year vacancy on the Board.

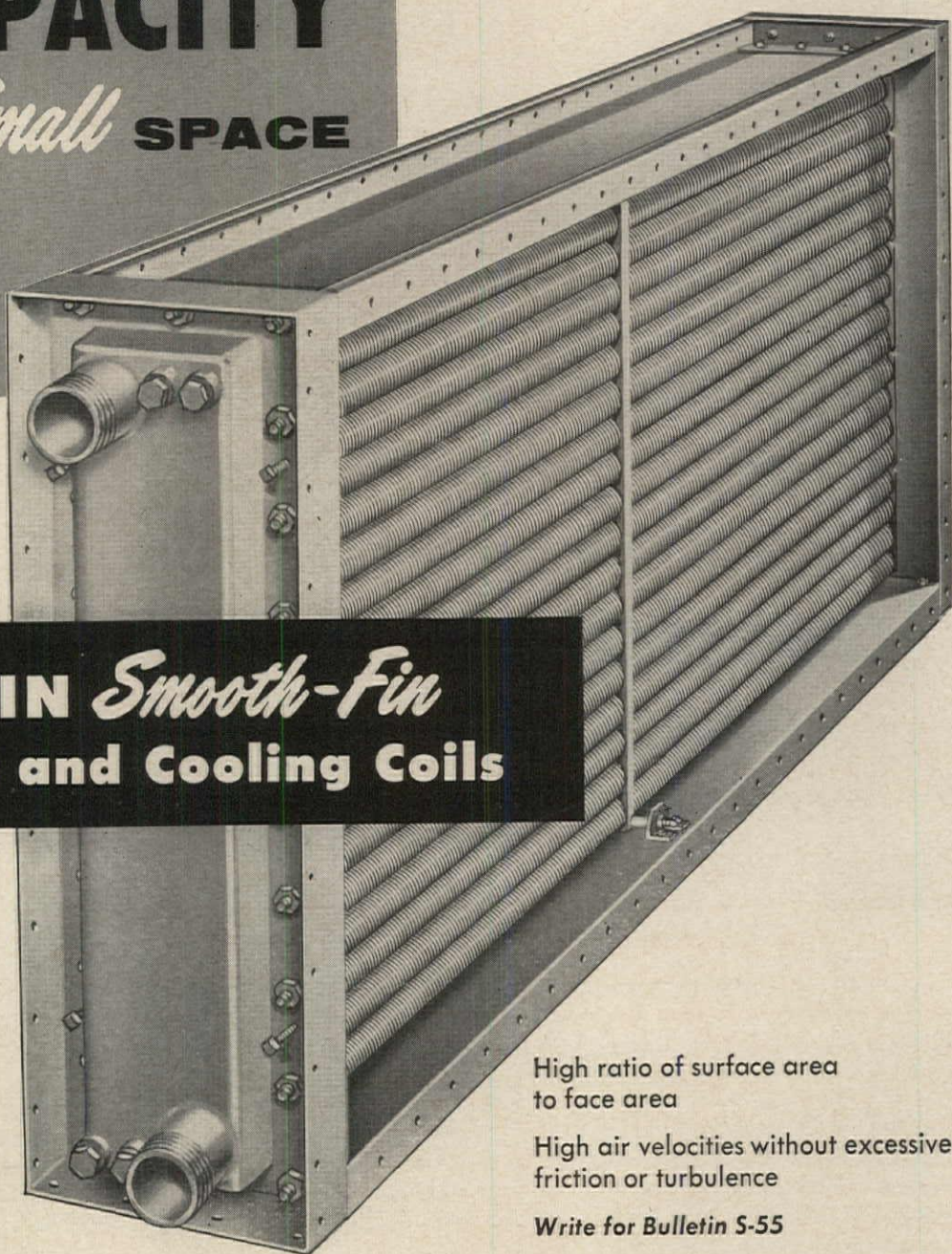
Two past BRI presidents, Charles H. Topping, senior architectural &

continued on page 26

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Elevators by
Westinghouse



Meetings and Miscellany

continued from page 23

civil consultant, E. I. du Pont de Nemours & Co., and Harold L. Humes, vice president, Baldwin-Ehret-Hill, Inc., were appointed ex-officio members of the BRI Board of Governors.

Illinois U. Students Win Awards: A.I.S.I. Competition

Three advanced design students at the University of Illinois, Urbana, Ill., have won top places in a special competition for the design of a repetitive refreshment stand for the 1964 New York World's Fair Grounds. The competition, open to intermediate and advanced design students, was sponsored by the Committee of Stainless Steel Producers, American Iron and Steel Institute.

A jury of architects selected the winners from among 79 entries. First prize of \$800 was awarded Robert L. Amico; second prize of \$600, Richard R. Bermann; and third prize of \$400, Anthony Frangella.

The program required the design to be 1) easily identified 2) unitized, modular and demountable 3) exciting and inviting 4) easily maintained 5) have food preparation, dispensing, storage and trash space within a 400 sq ft area.

Sullivan Mosaics, Stencils Found in Garrick Building

Unknown examples of mosaic and stencil work by architect Louis H. Sullivan were found in Chicago's famed Garrick Building in its final weeks of demolition. Although it was not possible to prevent the destruction of the building, much significant ornament was saved by the combined efforts of the Chicago Chapter of the

American Institute of Architects, the Chicago Chapter of the Society of Architectural Historians and the Chicago Landmarks Commission. A jointly sponsored team of preservationists, directed by Richard Nickel, often worked around the clock to save as much of the ornament from the Garrick as possible.

Beneath the plain asphalt tile of two floor landings, rich mosaic designs of delicate intertwining leaf and tendril motif were found. Because of the imminent demolition of these landings, there was no time for the usual method of moving the design—transferring each of the thousands of tiny pieces of colored mosaic to a new bed of cement. Instead, the team of workers removed the entire concrete floor landings, each weighing more than three tons, intact. Jacked up and cut into sections, the landings were transported by stonemason's truck to Chicago's Navy Pier for storage.

Delicate stencils by Sullivan were discovered under old coats of paint on the theater gallery ceiling and on walls in other parts of the building. Whole wall sections were cut out and transported, as the mosaics, for storage.

New Observation Tower for Niagara Falls

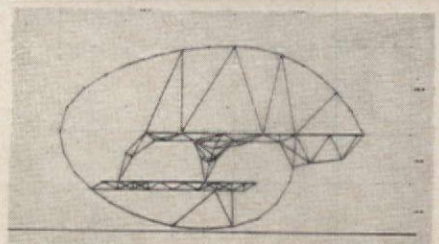


The 282-ft glass-walled Prospect Point Observation Tower designed by Praeger-Kavanagh-Waterbury, engineers and architects, gives sightseers a new view of Niagara Falls. Visitors approach the tower from an observation deck which sweeps out 376 ft over Niagara Gorge. From this they ride up to the top of the tower or down to its base in two elevators. The tower frame is of high carbon steel, box welded to require a minimum of bolting or riveting. The tower and upper elevator walls are high-strength solar-reducing glass. The tower is enclosed in 7 ft sq sheets of this glass set in rubber gaskets in the steel and aluminum frame. Exterior frame is aluminum. General contractor was White Plains Iron Works, Inc.



Architecture as Sculpture

The Whitney Museum of American Art plans to devote its entire building to a retrospective exhibition of the work of Bernard Reder, to be held from September 27th to the 7th of November. Mr. Reder is primarily a sculptor, the author of such works as "Two Women in the Jungle," above, but the show will include drawings and a group of eight architectural fantasies. In view of the opinion, held by Philip Johnson and others, that architecture is primarily sculpture, it is interesting to see what happens when a sculptor tries his hand at architectural design. A number of the designs, including the house, below, have been analyzed by Buckminster Fuller's firm, Synergetics, Inc., who have made dimensioned drawings of them and believe them to be capable of realization.



more news on page 66



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Required Reading

Lincoln Memorial,
Henry Bacon, architect
—from *The Architecture of America*



Procopius Americanus

THE ARCHITECTURE OF AMERICA. *A Social and Cultural History.* By John Ely Burchard and Albert Bush-Brown. Little, Brown & Co., 34 Beacon St., Boston 6, Mass. 595 pp., illus. \$15.

This book was originally conceived as a centennial history of the American Institute of Architects to be published during the anniversary celebration of 1957. The authors, however, have enlarged upon the earlier plan, and the result is a cultural history of American architecture intended for the general reader. It is the most comprehensive book yet published on this subject, and while previous historians may have the advantage on certain points—Fiske Kimball on the importance of Jefferson, for example, and Lewis Mumford on the larger context of architectural events—the scope of the authors' intentions and the high standards preserved throughout make this a work of considerable importance.

The stance of the book is firm and clear; it brings together a wealth of material previously available only in architectural periodicals or in specialized works, and it adds many insights of its own in the process. The authors employ a refreshingly sceptical attitude toward some of the subtleties of the modern movement. They have little patience with such

selective approaches to architecture as the "Bay Region Style" or "The Functional Tradition." They do not confine themselves to "progressive" or "mainstream" events; they consider the Court of Honor at the World's Columbian Exposition a symptom and not a cause of the national temper; they recognize that American architecture of the Twenties actually took place during that decade and was not merely a curtain call for an earlier epoch.

The only point on which the authors seem uncertain is the manner in which they wish to present their material. They have clearly been at pains to put the general reader at his ease. They begin with a lengthy discussion of the nature of architecture, which may seem a rather tiresome project, but is actually an excellent introduction to the philosophical complexities of the subject. They then divide their history into five large chapters. The first is a sweeping description of American architecture from the earliest settlements to the Civil War; the last four, the bulk of the book, cover the years from the Civil War to the present. Within each chapter, the authors seek to build a picture of the period they describe from pieces of information that are in themselves fragmentary and often very specialized. They also include many elements of cultural and social history as points of reference for the general reader. There is interesting material on

every page; but it is difficult to know whether such an impressionistic approach can be intelligible to someone with only a slight previous acquaintance with the subject. In the end, the balance of the work may have been lost from bending over backward to avoid the stigma of the textbook.

The specialist must inevitably find points of disagreement, and the student will still require more detailed texts. Therefore, one hopes that the rather diffuse nature of the presentation does not make this history too difficult for the general reader to assimilate; for, if it does, he will miss much that is excellent.

—JONATHAN BARNETT

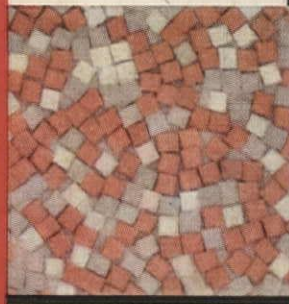
Europe in Technicolor

THE WORLD OF GREAT ARCHITECTURE. By R. Furneaux Jordan and Bodý Cichý. The Viking Press, Inc., 625 Madison Ave., New York 22. 460 pp., illus. \$22.50.

With due respect to the authors, it must be said that in this book the pictures are all—or almost all. The publishers understandably boast on the jacket about the 112 full-page color plates inside the volume. They are all handsome. Lovers of picture books may well find the rather stiff price of \$22.50 worth it.

continued on page 51

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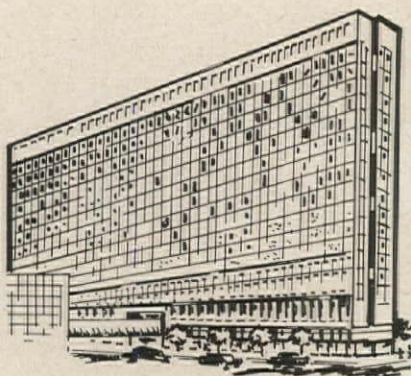
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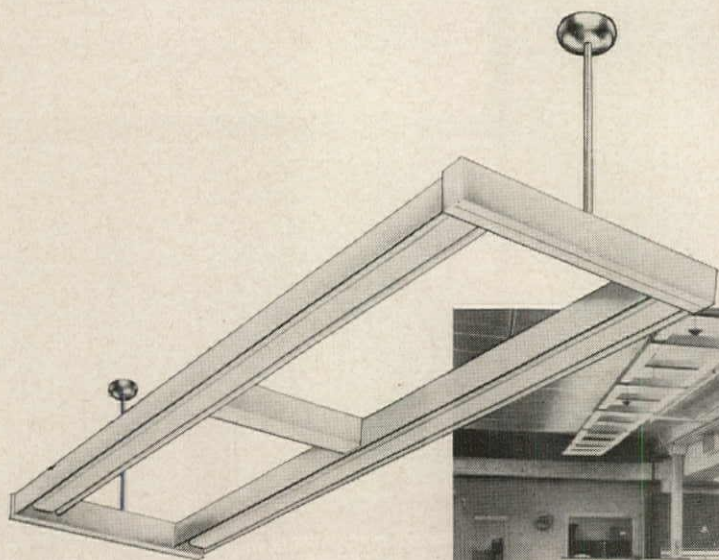
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student reaction”...



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Take advantage of Herman Nelson experience, quality, and economy when planning your next new school project. Write for more information: Herman Nelson School Air Systems Division, American Air Filter Company, Inc., 215 Central Avenue, Louisville 8, Kentucky.

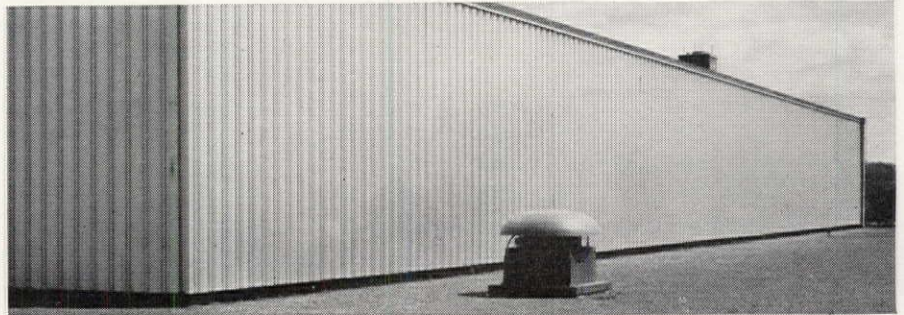
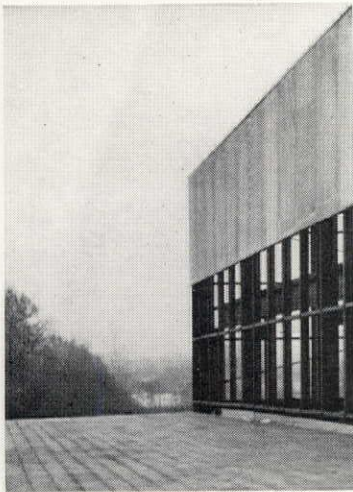
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“The air conditioned school . . . gives administrators, teachers, students, and the community, in general, a better learning environment at a first cost and operating costs smaller than a conventional school.” States Consulting Engineer Dr. Marcello Giomi, Albuquerque, N. M.

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Required Reading

continued from page 40

Europe . . .

R. Furneaux Jordan's text, subtitled "From the Greeks to the Nineteenth Century," is a very basic introduction to the subject—sufficient to the purpose, but unlikely to seem very adventurous to the professional. Because on the whole it is an adequate and a comprehensible brief history, readers will probably not be inclined to argue minor points, although it would be possible to disagree with, for example, the statement that the Houses of Parliament are "probably the greatest single architectural monument of the 19th century." Someone, it seems, has already disagreed, since the ultimate photograph is of the Opera in Paris.

The relatively long captions, written by Dr. Cichy, comprise some specifics on the buildings displayed, and these, too, are comprehensible to the novice. The buildings chosen rank in time from the temples at Paestum to the Paris Opera, and in space from the cathedral at Monreale to the stave churches of Norway, from Westminster Abbey to St. Basil's Cathedral in the Kremlin. No photo credits are given, but the photographs appear to have been, if not specially, certainly recently taken.

Collegiate Study Habits

STUDENT REACTIONS TO STUDY FACILITIES. *With Implications for Architects and College Administrators.* By Stuart M. Stoke, Robert F. Grose, David W. Lewit, Michael Olmsted and Bulkeley Smith Jr. 60 pp.

This study was undertaken by a committee from four colleges—Mount Holyoke, Smith, Amherst and the University of Massachusetts. The committee gathered from students at these colleges both objective data on their study habits and subjective opinion on "ideal" study facilities. Not all of the conclusions were immediately apparent: large reading rooms in main libraries, for instance, were used by students just short of half their total study time, but it appeared after questioning that there were any number of reasons for this,

continued on page 58

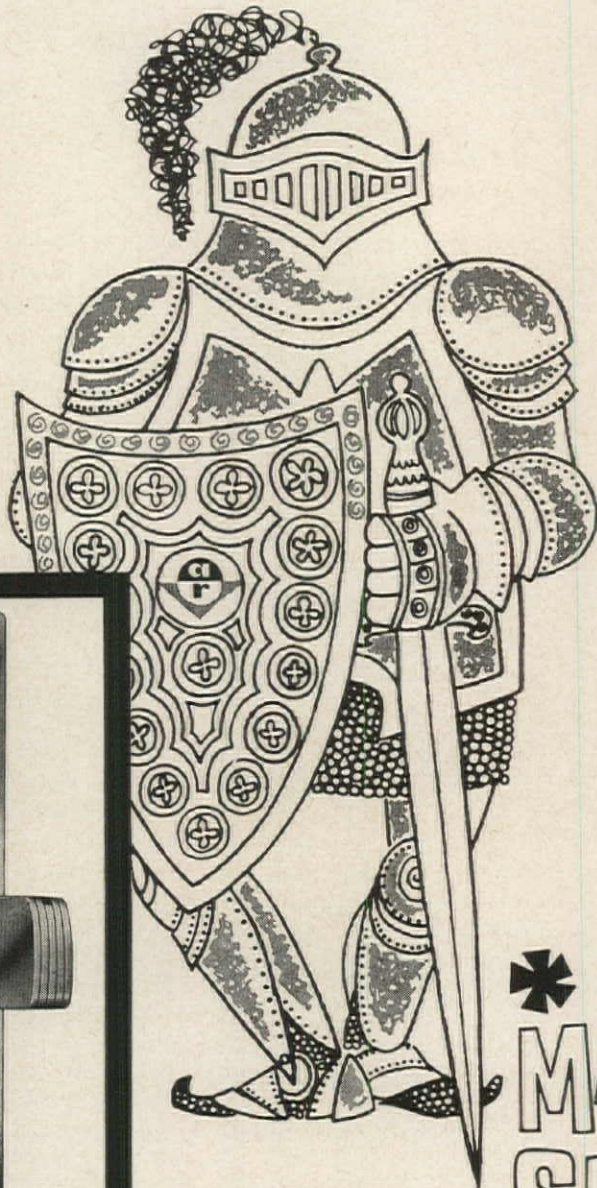


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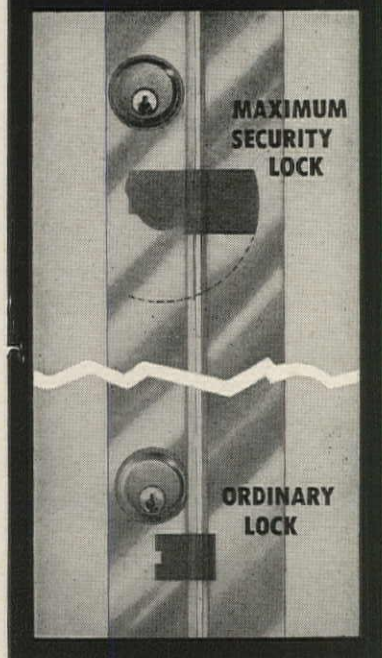
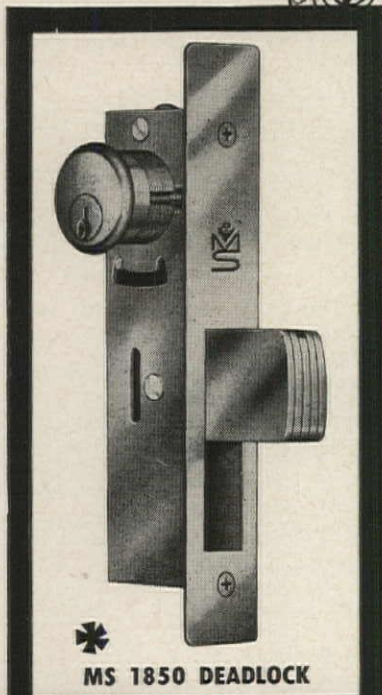
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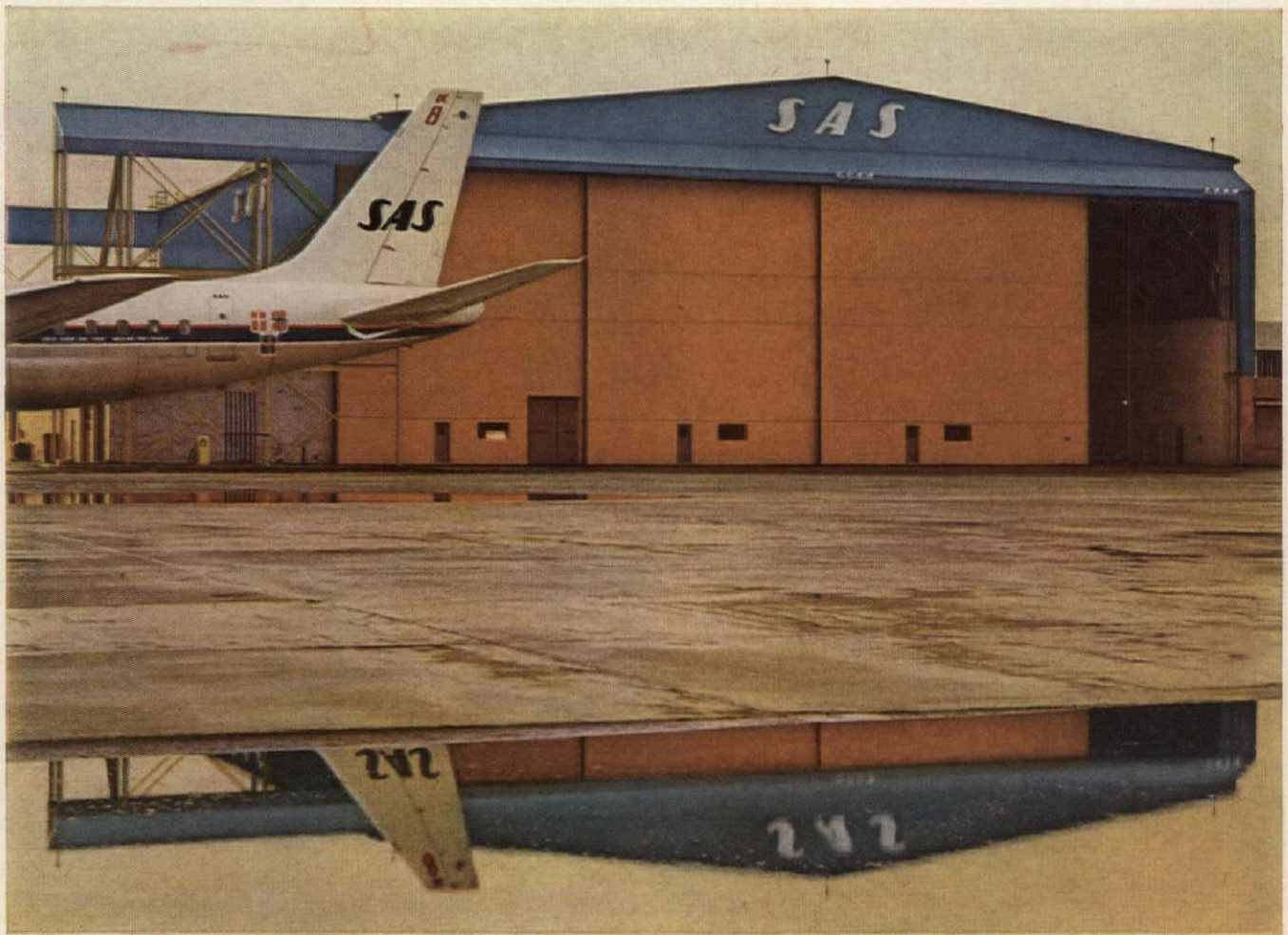


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This year SAS opened its first hangars in the United States. For a dramatic and economical color treatment, SAS chose striking Alcoa* Alunalure finishes.

Whether you're erecting an industrial or commercial building, shopping or recreation center, warehouse, or any other structure . . . remember this: Alcoa Aluminum is light in weight, strong, corrosion resistant. It handles easier, goes up faster, needs no maintenance. Tough, baked enamel Alunalure finishes come in 12 hues, including natural aluminum finish, and have already passed the 15-year mark in a rigorous test of durability.

Your local Alcoa sales office has samples. Get color swatches and full technical data by writing: Aluminum Company of Amer-

ica, 1821-J Alcoa Building, Pittsburgh 19, Pa. World-wide sales through Alcoa International, Inc., 230 Park Avenue, New York 17, N.Y.

*Registered Trademarks of Aluminum Company of America

Alcoa has an established architectural consulting service for owners, architects, consulting engineers, contractors. For technical counsel on aluminum applications, contact your nearest Alcoa sales office.

ARCHITECT: Roy S. Bent, associate of Kahn & Jacobs, N.Y.

BUILDER: William L. Crow, N.Y.

ALUMINUM SUBCONTRACTOR: A. Munder and Son, Inc., Long Island City, N.Y.



For exciting drama watch "Alcoa Presents" every Tuesday evening—ABC-TV

Ponder these Questions **ON WINDOW WASHING**

1. How many square feet of glass can a man wash per day?
2. When working from the outside, how much time is lost in reaching windows?
3. When working from the inside, how much of a washer's time is lost enroute from office to office, moving furniture in the way, opening and closing windows, or waiting to get in?
4. How much of other people's time is lost moving aside to provide free access for a washer; leaving the room to avoid heat or cold?
5. What happens to the balancing of your air-conditioning system when windows are opened? How does this affect productivity?
6. How hazardous is the work and can the danger be minimized?

When the above questions have been weighed carefully, you too may wish to swing to a safe, fast, efficient Cleveland Tramrail Window Washing System.

A Cleveland Tramrail Window Washing System enables one or two men to reach and clean entire walls of windows with safety. The special cage is suspended from an overhead carrier that travels on a track attached to the building. This equipment is also helpful for pointing up, painting and minor repairs.



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Associated Architects: Graham, Anderson, Probst & White, Inc., and Raymond S. Kastendieck & Associates.



Interior Designer: Raymond Wing Jean, RA, NSID

Permanent, yet movable

This efficient office layout is partitioned with new J-M floor-to-ceiling Class A High Walls, and uses Class A Low Walls as space dividers. These fire-proof walls can be easily and quickly relocated, and all materials re-used. The floor in this office is J-M Terraflex[®], and overhead is a J-M Sana-coustic[®] Ceiling.

Everywhere you look

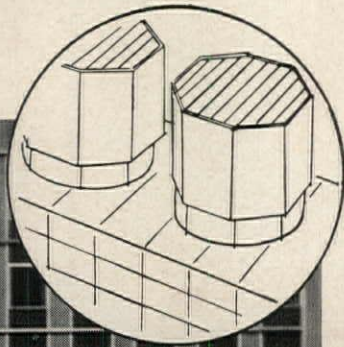
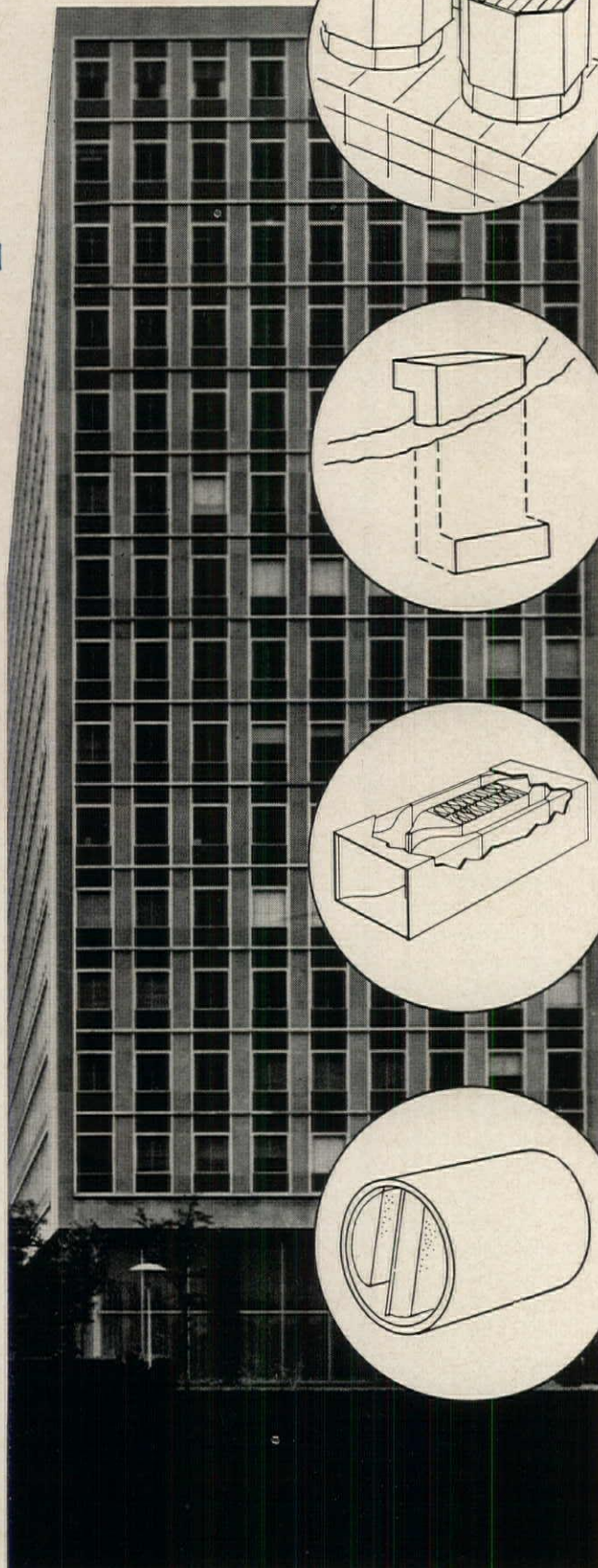
This impressive office suite incorporates four different J-M products. Partitions are of J-M Color-chip[®], an integrally-colored, structurally strong asbestos-cement material. The blue panel at right is of granitized J-M Corrulux[®], a translucent material reinforced with strong J-M fiber glass. The ceiling is of new J-M domed fiber glass panels. And J-M solid vinyl is the floor tile in the immediate foreground.

For more specific information, write to Johns-Manville, Box 158, Dept. AR-9, New York 16, N. Y. In Canada: Port Credit, Ont. Cable: Johnmanvil.

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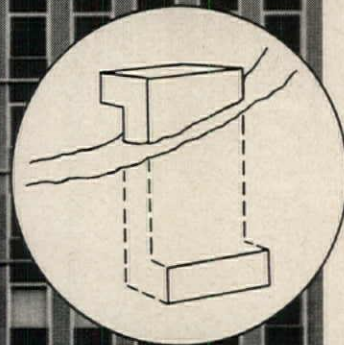


From basement to roof top...Aircoustat[®] silences noise



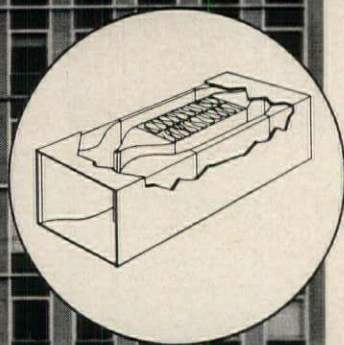
Cooling Tower Silencers

Water, fan and air noises are eliminated by Aircoustat Cooling Tower Silencers. Basic elements include intake sound proofing as well as exhaust mufflers. Because every building's requirements are special, every system is individually designed.



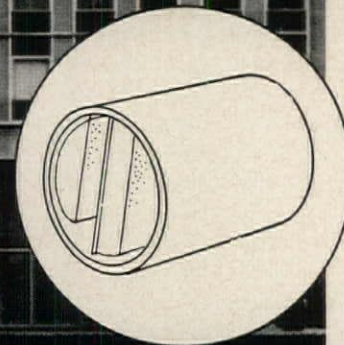
Return Air Vent Silencers

Block voices and other noises transmitted through transfer grills. Aircoustat Return Air Vent Silencers trap sound but not air. Available in three configurations and six stock sizes. Adaptable to a variety of installations—doors, walls, ceilings, etc.



Standard Duct Silencers

These low-cost, pre-engineered units assure a lifetime of trouble-free, maintenance-free service. Pre-determined values eliminate guesswork, *guarantee* the right attenuation. More than 60 stock models, fabricated in six lengths, available "off the shelf." No local job adjustments, no fabrication.



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High velocity air system sounds need not be excessive if proper consideration is given to attenuation. An Aircoustat Circular Silencer adjacent to the fan does the job. Designed especially for higher pressure systems as well as for standard cylindrical ductwork. A full range of standard sizes available.

Selecting *performance guaranteed* AIRCOUSTAT units is *quick and accurate*. We'll be pleased to supply you with complete technical and ordering information on any or all silencers in the line. Write: KOPPERS COMPANY, INC., 3009 Scott Street, Baltimore 3, Maryland.



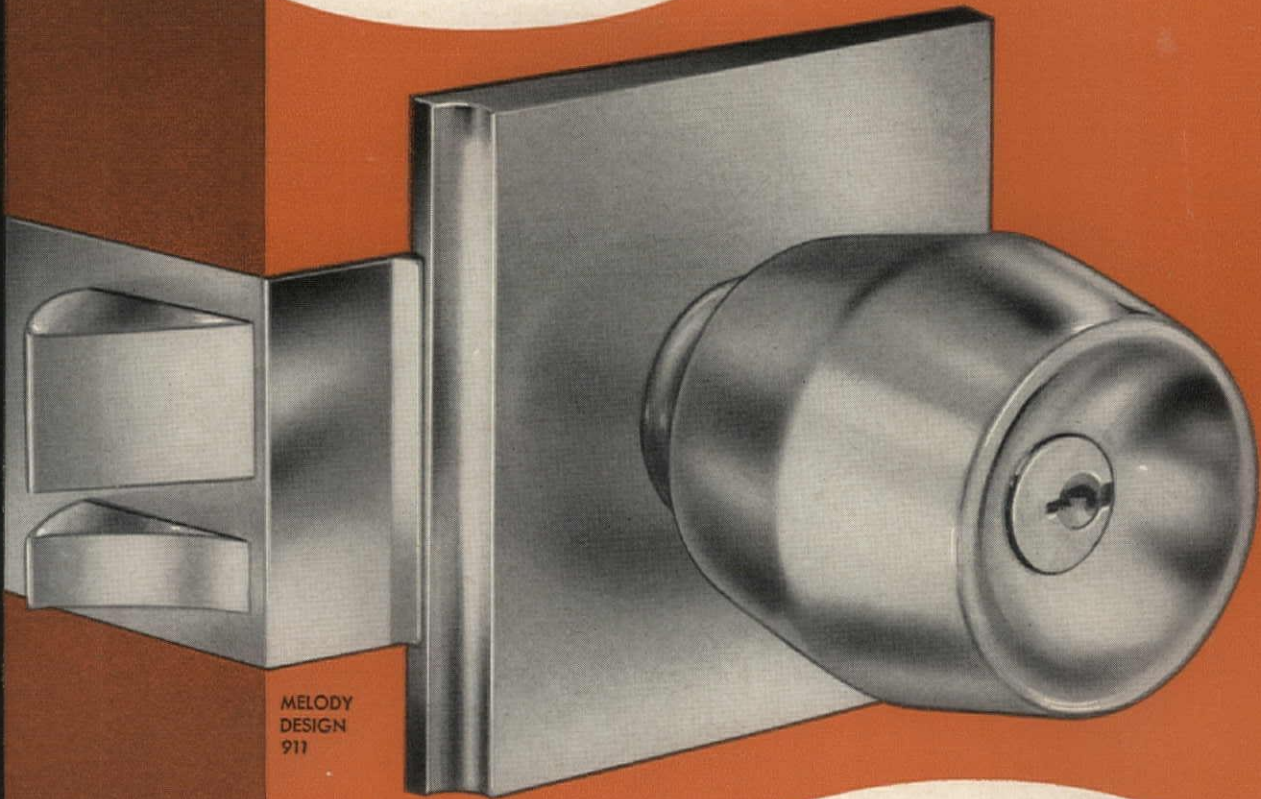
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At CORBIN—art, engineering and fine craftsmanship combine to give you the true Unit Lock . . . all assembled and aligned at the factory in one-piece, solid brass frames. In brass, bronze, aluminum or stainless steel trim . . . in a variety of functions . . . and a wide choice of smart, modern designs. APPROVED FOR CLASS B, C, D AND E LABEL DOORS. Easily installed in commercial, institutional and public buildings—and at cost-saving speeds.

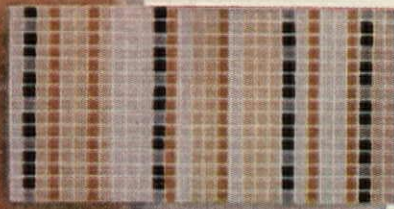
It pays to make it CORBIN—throughout!

P. & F. CORBIN DIVISION

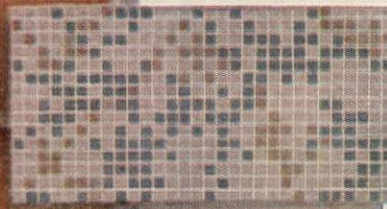
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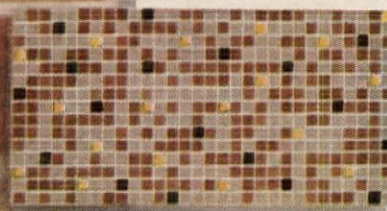
HORIZON



Design No. M-13

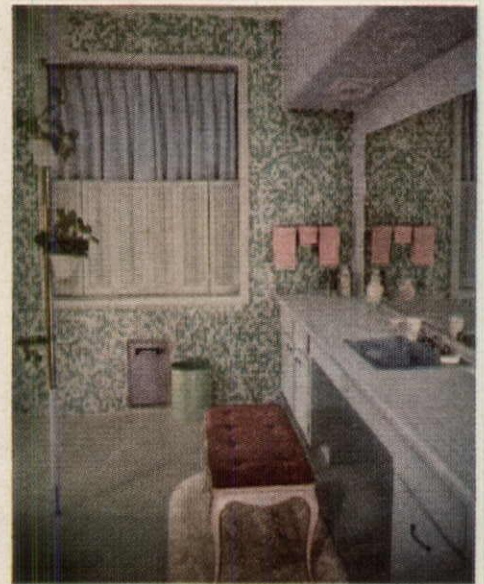


Design No. M-15



Design No. M-11

Design No. M-5
Actual size tiles



FREE COLOR PALETTE of actual tiles showing complete range of 58 different available colors will be sent without cost to architects and designers who write on their professional letterhead to Dept. AR-619.

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...the new

glazed ceramic mosaic
produced in the U.S.A.

by **Suntile**

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Design them with HORIZON TILE. This new, colorful wall tile has an informal, handcrafted appearance that's beautiful beyond description.

HORIZON TILE achieves its distinctive appearance through the intentional variation and irregularity of its shape, its surface texture and its 58 beautiful color shades that range from soft pastels to solid or textured tones.

Whether you use HORIZON TILE to create a beautiful mosaic mural, like the one shown here, or use one of the many interesting "Buckshot" or "Striped Pattern" designs created by Suntile's Design Department, you'll find that HORIZON TILE adds greatly to the beauty of your finished wall.

HORIZON TILE, made in America by Cambridge, is available through your local Suntile dealer. His name is listed in the Yellow Pages of your telephone directory.

OUR DESIGN DEPT.

under the direction of George Limke is ready to assist you with your tile design or layout problems. Send us your plans or elevations for suggested tile applications, or let us put your own tile designs in layout form.



The Crucifixion —
an 11' x 15' mosaic mural
St. Andrew's Church
Columbus, Ohio
Muralist: Charles L. Madden
Resurgere Associates,
Phila., Pa.

**THE CAMBRIDGE TILE
MFG. CO.**

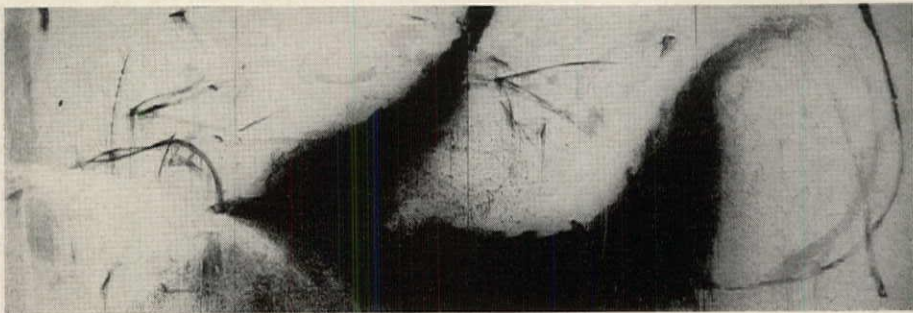
P.O. Box 71, Cincinnati 15, Ohio

Design No. M-2
Actual size tiles

ART FOR ARCHITECTURE
AVAILABLE ON LEASE

The works of two artists, recently on special exhibition at the Graham Gallery in New York, are now available to new residential or commercial buildings for installation on a trial basis.

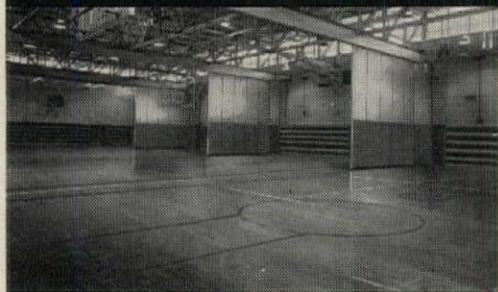
One of the works is a single painting—a four panel abstract mural, 8 by 24 ft, by Norman Bluhm.



"Oz," an abstract mural in four sections (each panel 8 ft x 6 ft) by Norman Bluhm

Eudolph Burckhardt

a revolutionary new feature in
TORJESEN FOLDING PARTITIONS



THE INGENUOUS



FLOOR SEAL

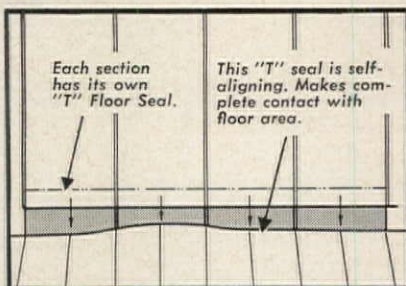
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NEW

"T" FLOOR SEAL ON
TORJESEN FOLDING PARTITIONS
Effects 100% Closure Regardless
of Floor Contour!

Each section of a Torjesen Partition has its own "T" floor seal. An electro-pneumatic activated unit in the bottom does the job! Regardless of high or low floor points, each panel is held rigidly in 100% contact with the floor making the entire partition immovable.

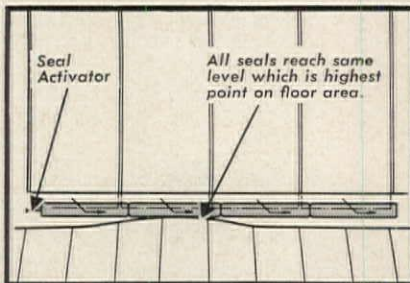
*The new "T" Floor Seal is now standard equipment on all Torjesen Folding Partitions at no extra cost!



OLD

TYPE FLOOR SEAL NOW
IN GENERAL USE Cannot Effect
100% Closure Unless Entire
Floor is Dead Level!

The drawing at right shows this. When the partition is closed the seal in the first door section is triggered and in turn activates each following door section seal. They all reach the same level which is the highest point on the floor area. Any irregularity in floor contour will cause the rest of the panels to hang loosely thus affecting the rigidity of the entire partition.



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The other is a group of cylindrical paintings, ranging in size from 3 ft high and 7 ft in diameter to 12 ft high and 2 ft in diameter, by Elaine de Kooning.



Painted "columns": Elaine de Kooning

Eudolph Burckhardt

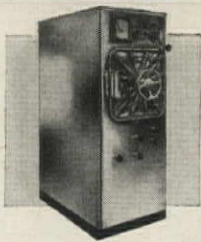
Realizing that many of the abstract painters today work in a scale beyond the pocketbook and hanging space of the small collector and that this same scale renders works of this sort particularly suitable for architectural installation, Robert Graham for several years has had the idea of staging such an exhibition. His goal was to make available to architects, on a trial basis, portable works that could be immediately placed in restaurants, banks and lobbies of modern buildings.

Mr. Graham felt that two artists who could present his case were Norman Bluhm and Elaine de Kooning, both New York painters associated with the New York school of abstract painting.

The Graham Gallery, 1014 Madison Avenue, New York, is now prepared to receive inquiries from architectural firms engaged in buildings where the Bluhm mural or the de Kooning columns might be housed. The art works may be leased for a year for the fee of 20 per cent of the sales price. If the renter decides to buy the work at the end of the year, he may deduct the 20 per cent from the total.

more news on page 76

world's hospitals to new heights of patient protection in the 60's



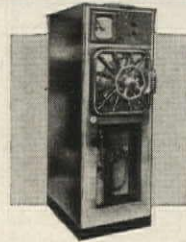
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- Ideal for processing heat-sensitive or heat-coagulable media and fluids.
- Square chambers . . . recessed and cabinet mountings.



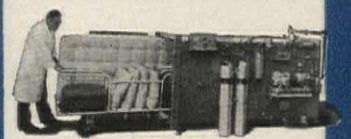
★ MODEL M. E. RECTANGULAR STERILIZERS

- Long recognized as the "workhorse" of Central Service.
 - Ideal for solutions, dressings, utensils, instruments, milk formula and laboratory supplies.
 - Fully automatic Cyclomatic Control.
- Also available as a utility M. E. with enameled exterior*



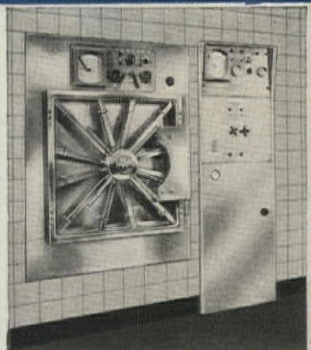
CRYOTHERM "COLD" STERILIZER

- For "cold" gaseous sterilization or heat- or moisture-sensitive materials, instruments and pre-packaged supplies.
- Ideal for Urology, Surgery, Central Service, Pharmacy and Laboratory.
- Cryoxide gas supplied in 16-pound cylinders.



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- Especially designed for decontaminating mattresses, blankets, pillows, bassinets, incubators, etc.
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- Ethylene oxide sterilant for 37"x46"x88" vacuum-pressure chamber.



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- Adaptable to any ethylene-oxide mixtures.



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- For Sub-sterilizing Rooms or Central Instrument Clean-up.
- Choice of three automatic cycles:
 1. Wash and sterilize
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- 11"x11"x24" chamber.

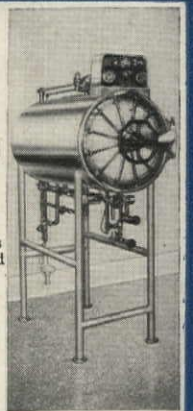


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- Cyclomatic Control assures correct sterilizing cycle.
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- Wide choice of sizes . . . open or recessed mounted.
- Economical initial cost.



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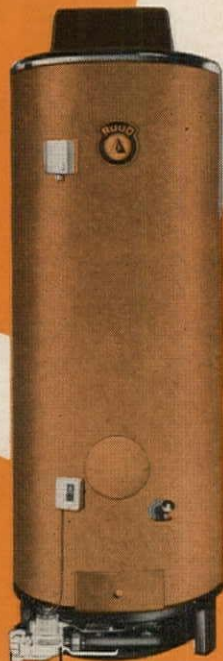
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CAPACITY'S UP!

CORROSION'S OUT!

COPPER provides complete protection against rust or breakdowns



30% more capacity by heating and storing water at 180°*

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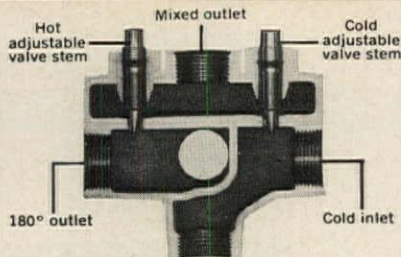
RUUD COPPER SANIMASTER COMMERCIAL GAS WATER HEATER

SOLID COPPER TANK



REINFORCED WITH STEEL

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Each of the nine models available is a self-contained, automatic storage water heater. Their compact design saves space and provides the contractor with greater installation flexibility. In addition, expandability of the system is simple and economical with the Ruud Equa-Flow Manifold system.

Sanimasters are warranted for five years and carry industry seals of the N.S.F., A.G.A., and A.S.M.E. The new Ruud Engineer's Manual now provides full facts about every model and the Certified Sizing Guides, available for 23 use-classifications permit easy, accurate selection.

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For a complimentary copy of the new Ruud Sizing Guides, send request on company letterhead, and a Ruud Commercial Water Heater specialist will personally deliver a set to you.

The Record Reports

continued from page 80

been established to interview each applicant. This effort to select the student best fitted for the five year design course, says Dean Harlan E. McClure, is aimed at weeding out the students not capable of handling their mathematics-English courses and also the extensive basic design work. According to Dean McClure, the "mortality rate" sharply decreased last year due to selectivity in the program—i.e., the percentage of students dropping architecture due to disinterest or failure to maintain passing averages in other courses has declined.

1961-62 Program

Clemson's 1961-62 schedule includes 12 lecturers from throughout the United States speaking on subjects centered on the many forms of visual arts. These and other educational adjuncts are financed through Clemson's Architectural Foundation.

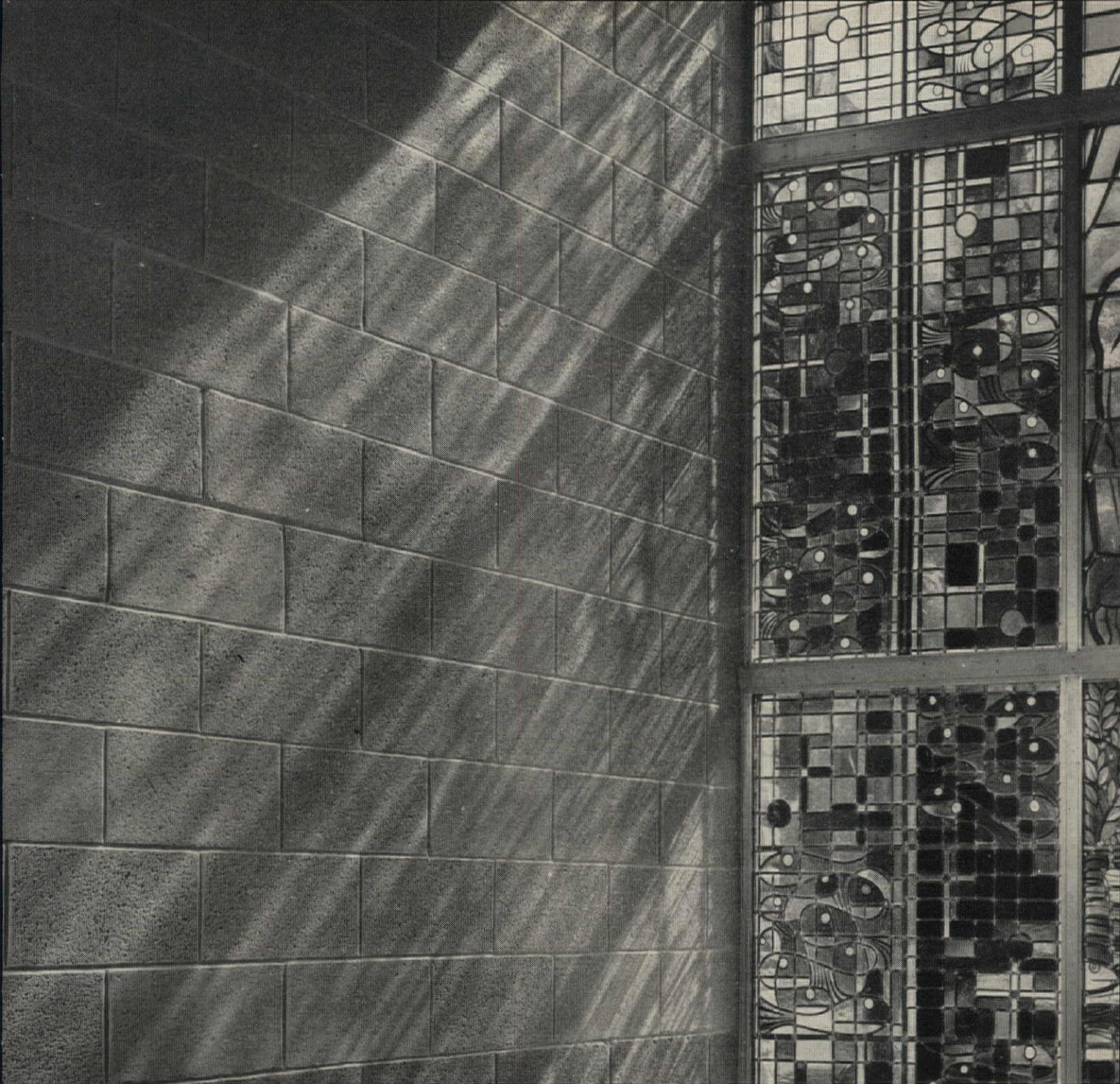
An integral part of the program is the showing of exhibits of recognized contemporary artists in the fields of painting, photography and sculpture in the newly dedicated Rudolph Lee Gallery. Both the lectures and art exhibits are open to the public and student body.

A recent staff addition at Clemson has been sculptor John Acorn. A native of New Jersey and former teaching assistant at Cranbrook Academy in Michigan, he will teach basic design and an elective course in sculpture. One more faculty addition will be a South American Fulbright architect replacing Professor George Means, himself a Fulbright scholar, who will lecture in Turkey next year.

Students Win Competitions

In the past year three Clemson students won first place in national architectural contests. They were: Robert Johnson, Koppers Roofers Award for a hospital design; Kemp Mooney, Garden Rowhouse National Competition with an urban apartment for Milwaukee, Wis.; and John Preston, A.I.A. Medal as outstanding fifth-year architectural student at Clemson and an A.I.A. National Scholarship for graduate study in city planning.

more news on page 96



BUILD WITH BLOCK

and build for keeps

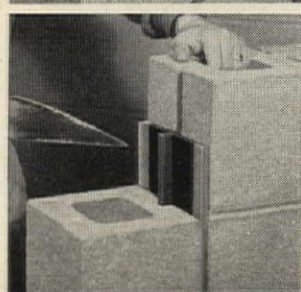
Nothing's a better-looking building investment than the modern concrete masonry wall. Nothing's sounder—especially when reinforced with Dur-o-wal, the engineered steel rod reinforcement with the patented trussed design. Can more than double flexural wall strength, outfunctions brick-header construction. Write to any Dur-o-wal address below for 44-page Armour Research Foundation test report.

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Masonry Wall Reinforcement and Rapid Control Joint

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- Dur-O-wal of Colorado, 29th and Court St., PUEBLO, COLO.
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- Dur-O-wal Ltd., 789 Woodward Avenue, HAMILTON, ONTARIO, CANADA

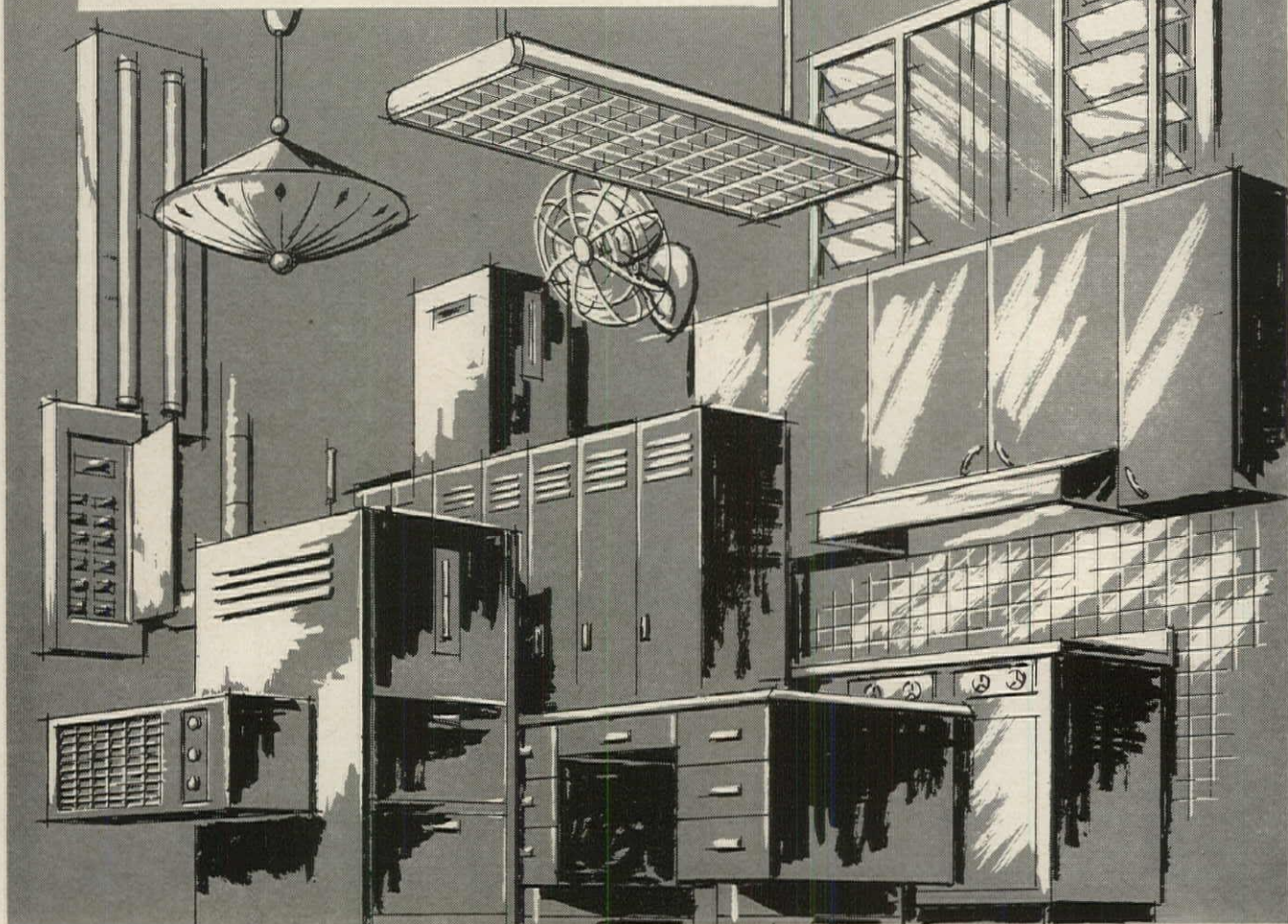


Strength with flexibility—the two basic factors for a repair-free masonry wall are assured by these intelligently engineered companion products. Dur-o-wal reinforcement, top left, increases flexural strength 71 to 261 per cent, depending on weight Dur-o-wal, number of courses, type of mortar. The ready-made neoprene compound flange of Rapid Control Joint, beneath, keeps itself sealed tight.

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Fluorescent Fixtures
Square "D"
Lithonia Lighting
Hotstream
Shaw Walker
Durham
Gardner-Denver



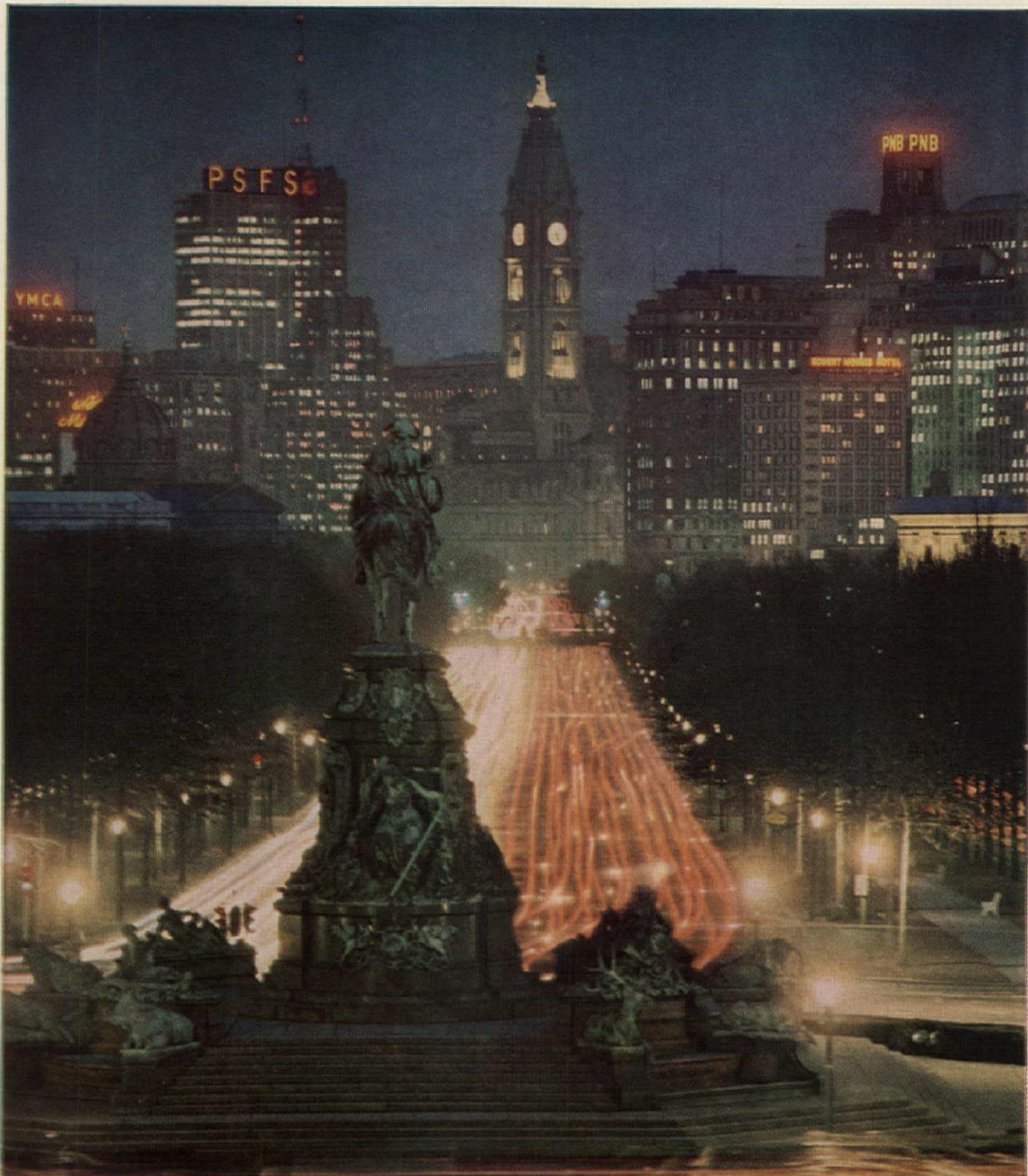
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When you specify Oakite CrysCoat as a pre-paint treatment for the steel products in your plans, you are specifying a top quality phosphating process for bonding paint to metal. It means the products will be protected against under-paint corrosion, unsightly peeling, and creeping rust surrounding accidental paint damage.

To the advantage of architects and building owners everywhere, a wide variety of steel products is now being CrysCoated. Write for more information about CrysCoated products. Oakite Products, Inc., 83 Rector Street, New York 6, N. Y.

CrysCoat paint-bonding treatment makes architectural products look better... last longer





Benjamin Franklin Parkway looking east from Art Museum

PHILADELPHIA DISCOVERS that traffic congestion either ends at curbside or extends into building lobbies—depending upon the kind of elevating used. Why? Because there is more to completely automatic elevating than simply leaving the operator out of the car! Any elevator installation that fails to provide complete automation for all of the constantly changing, widely varying traffic patterns that occur throughout the day and night—invites curtailed service, long waits and traffic congestion. This applies in a like degree to the greatest skyscraper and the smallest commercial or institutional building. How do tenants and visitors react? After all, they are people. They react in a like manner to elevator service. And a building's reputation soon reflects their reactions. The mark of a CLASS "A" building—large or small—is completely automatic AUTOTRONIC® elevating. It accurately predicts and delivers a magnificent performance. Since 1950, more than 1,100 new and modernized buildings across the United States and Canada have contracted for AUTOTRONIC elevating by OTIS—the world's finest!

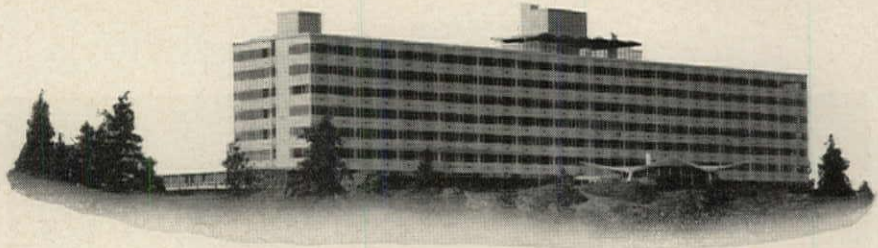


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large interlocking **MARMET** grid sections . . .

SAVE CURTAIN WALL ERECTION COSTS

on huge *Rockwood Manor*
in Spokane

*Rockwood Manor
Spokane, Washington
Architect:
Culler, Gail, Martell & Norrie
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Photographs by Charles Libby & Sons

mating joints automatically seal on assembly with **MARMET's** series 6442

Resplendent atop a hill, outside Spokane, Washington, Rockwood Manor gleams with the brilliance of MARMET's 6442 Series aluminum curtain wall. Wisely chosen for its economies in assembly, as well as initial cost . . . the Series 6442 is fabricated in large gridwall sections . . . well adapted to either single level or multi-level structures. Each large grid section, a complete unit from the factory, simply interlocks into the next grid section with a special mating joint (internally weatherstripped) for an *automatic seal* on assembly.

Note the detailed panel at right. These special joints absorb cumulative expansion horizontally and/or vertically in structures such as Rockwood Manor. Frames for operating sash and doors are built into the grid sections to save the cost of installing lintels and jambs on the job.

When you select curtain wall for your next job . . . whatever the requirements may be . . . compare costs on an erected price basis with any one of MARMET's four basic curtain wall series.

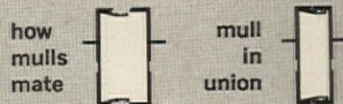
Variations possible in each series provides a beautiful window wall for every purpose . . . all engineered to achieve a more effective result at lower erection cost.



The man from **MARMET**

When any unusual site conditions require special technical assistance, the MARMET field engineer is available on 24 hour call to expedite job progress. During the construction of Rockwood Manor, extensive field service was provided by MARMET technical men. Write or phone for complete details on this service.

Fenestration in the lounge, custom fabricated by MARMET. The beautiful interior of Rockwood Manor's sumptuous front lounge, is well daylighted through custom MARMET curtain wall sections, specially fabricated to fit the undulating contour of the ceiling and roof lines.



SERIES 6442 & 6602 for
1 story or multi-story
gridwall structures.

Mating sections are pre-assembled at the factory with mating mull joints (shown above) which simply interlock . . . providing high speed assembly on the job site.



For additional information on the complete line of MARMET products — consult Sweet's Catalog File No. 3a Mar or write to MARMET



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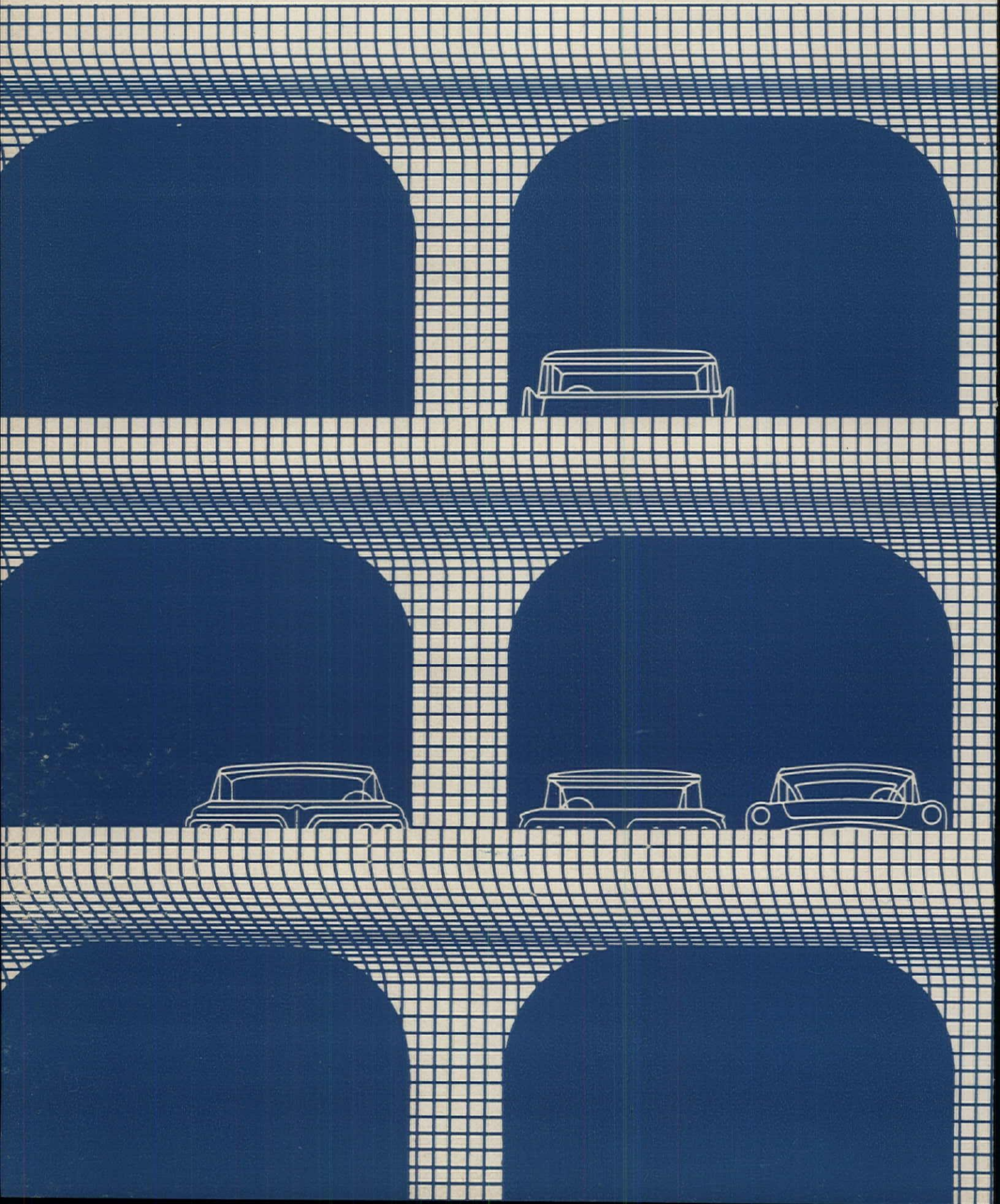
See Neo-Ray's
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New York City

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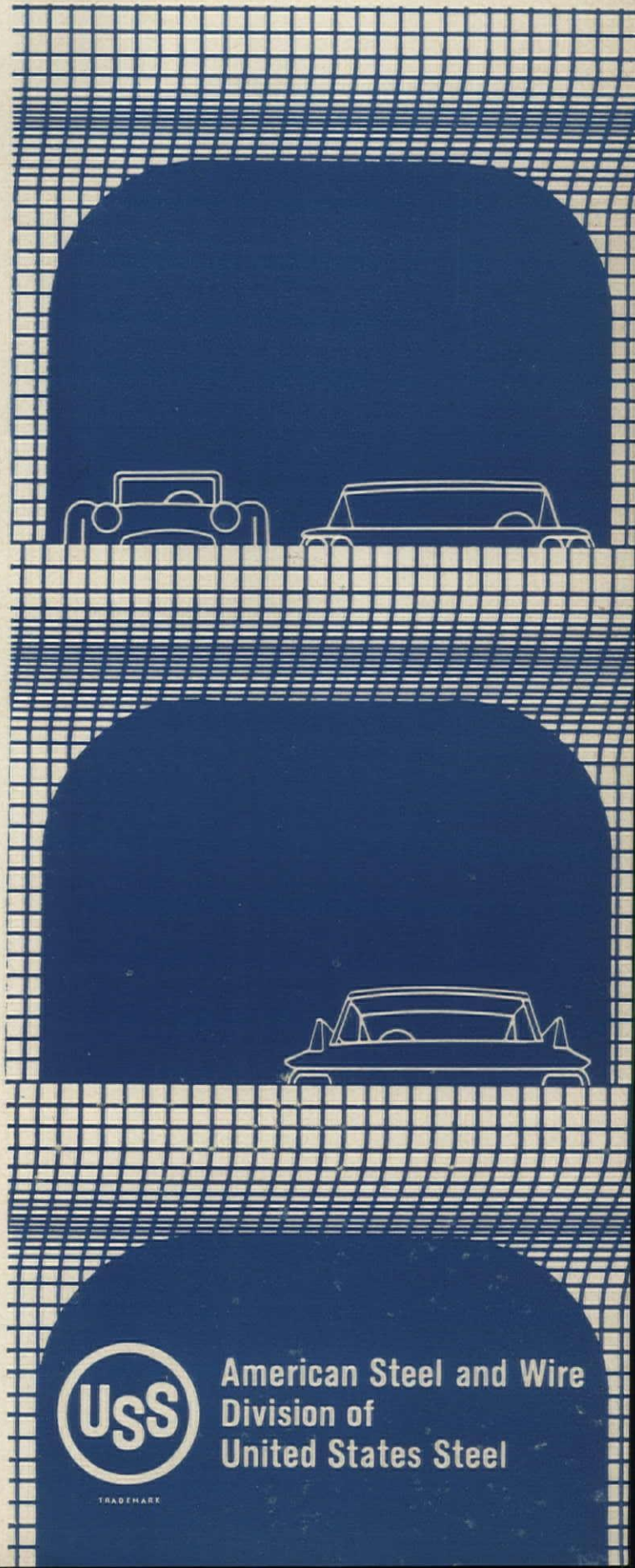
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new 1/2" dia. structural wire fabric**



concrete . . . increases slab strength, lowers costs

Here's a new Structural Wire Fabric that permits high working stresses for all reinforced concrete jobs such as this parking garage. Structural Wire Fabric is prefabricated to your exact specifications from cold-drawn wire up to 1/2" diameter and spaced as close as 2" on centers in both directions. Its minimum tensile strength is 75,000 psi with a minimum yield strength of 60,000 psi. All intersections are electrically welded . . . provides positive mechanical anchorage in the concrete. ■ Structural Wire Fabric is delivered to the job in cut-to-size sheets that can be quickly and more accurately placed . . . inspection is simplified. It eliminates thousands of time-consuming placing and tying operations required by bars . . . goes in at least 1/3 faster and saves on placement costs. ■ If your current or future designs call for a departure from yesterday's limitations, consider Structural Wire Fabric. We'll be glad to assist you or your structural consultant with complete technical recommendations. Just contact our nearest sales office or write American Steel and Wire, Dept. 252, Rockefeller Building, Cleveland 13, Ohio.

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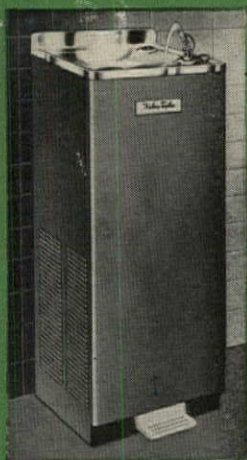


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Just a little over a year ago no one ever saw a cooler like this. We call it the Wall-Mount, truly a Halsey Taylor first.

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THIS MARK OF LEADERSHIP IDENTIFIES THE MOST COMPLETE LINE OF MODERN DRINKING FIXTURES

The Record Reports

continued from page 84

A.S.C.E. Awards for 1961 Announced

Recipients of the 1961 prizes, awards and fellowships of the American Society of Civil Engineers include the following: *J. J. J. R. Croes Medal*: a gold medal to George Winter, Cornell University, Ithaca, N. Y., for technical paper, "Lateral Bracing of Columns and Beams"; *Thomas Fitch Rowland Prize*: a cash award and certificate to Robert L. McNeill, Oakland, Calif., and H. Bolton Seed and Jacques de Guenin, both of the University of California, Berkeley, for technical paper, "Clay Strength Increase Caused by Repeated Loading"; *Collingwood Prize*: a cash award and certificate to Sidney A. Guralnick, Illinois Institute of Technology, Chicago, for technical paper, "Strength of Reinforced Concrete Beams"; *Arthur M. Wellington Prize*: a cash award and certificate to T. William Lambe, M.I.T., Cambridge, Mass., for technical paper, "Compacted Clay: Engineering Behavior"; *Construction Engineering Prize*: a cash award and certificate to Gail Knight, Roscoe, N. Y., for technical paper, "Concreting the West Delaware Tunnel"; *Moisseiff Award*: a bronze medal to John A. Blume, San Francisco, for technical paper, "Structural Dynamics in Earthquake-Resistant Design"; *Theodore von Karman Medal*: a bronze medal to R. D. Mindlin, Columbia University, New York City, in recognition of distinguished achievement in engineering mechanics; *Earnest E. Howard Award*: a gold medal to Herschel H. Allen, Baltimore, Md., for contributions made to advancement of structural engineering.

Winners of all awards and prizes have been invited to receive them at the annual meeting of the Society in New York City in October.

Urban University Expansion Studied in E.F.L. Report

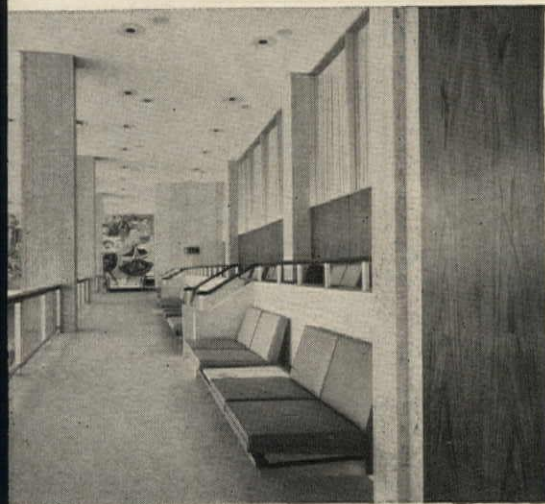
How can the downtown university in today's urban overcrowding and congestion find the space for classrooms and laboratories that serve over half the entire college population of the country?

continued on page 104

Halsey Taylor



PRATT & LAMBERT RIGHT ON SCHEDULE FOR AMERICAN AIRLINES AT IDLEWILD

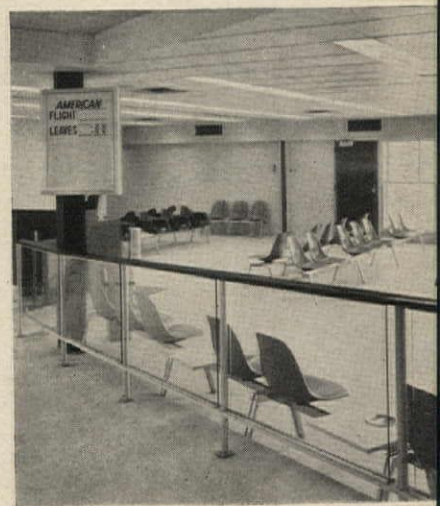


Hundreds of gallons of P&L finishes were chosen on color schedules and specifications for this superbly beautiful passenger terminal at New York International Airport.

Believed to be the world's largest stained glass wall, a 317-foot abstract design by Robert Sowers creates a gem-bright, many-colored sun breaker on the southern side of the terminal.

Strong emphasis on color styling in ceramic, glass and metal decorative effects throughout this 700-foot-long building called for superior quality in the matching and harmonizing paints. The specifications of Kahn & Jacobs included Pratt & Lambert Lyt-all Flowing Flat, Double Duty Primer and Vitralite Enamel.

Pratt & Lambert representatives offer architects sound, practical counsel on all finishing problems... surface preparation, color styling... and on the right materials to provide best protection. Call your P&L representative or write: Pratt & Lambert Architectural Service Department, 3301 38th Ave., Long Island City 1, N. Y.; 4900 S. Kilbourn Ave., Chicago 32, Ill.; 75 Tonawanda St., Buffalo 7, N. Y.; 254 Courtwright St., Fort Erie, Ontario.



American Airlines Passenger Terminal
New York International Airport
Idlewild, Long Island, N. Y.

ARCHITECTS:

Kahn & Jacobs, New York City

GENERAL CONTRACTOR:

Turner Construction Company,
New York City

PAINTING CONTRACTOR:

George Campbell & Co.,
Flushing, N. Y.

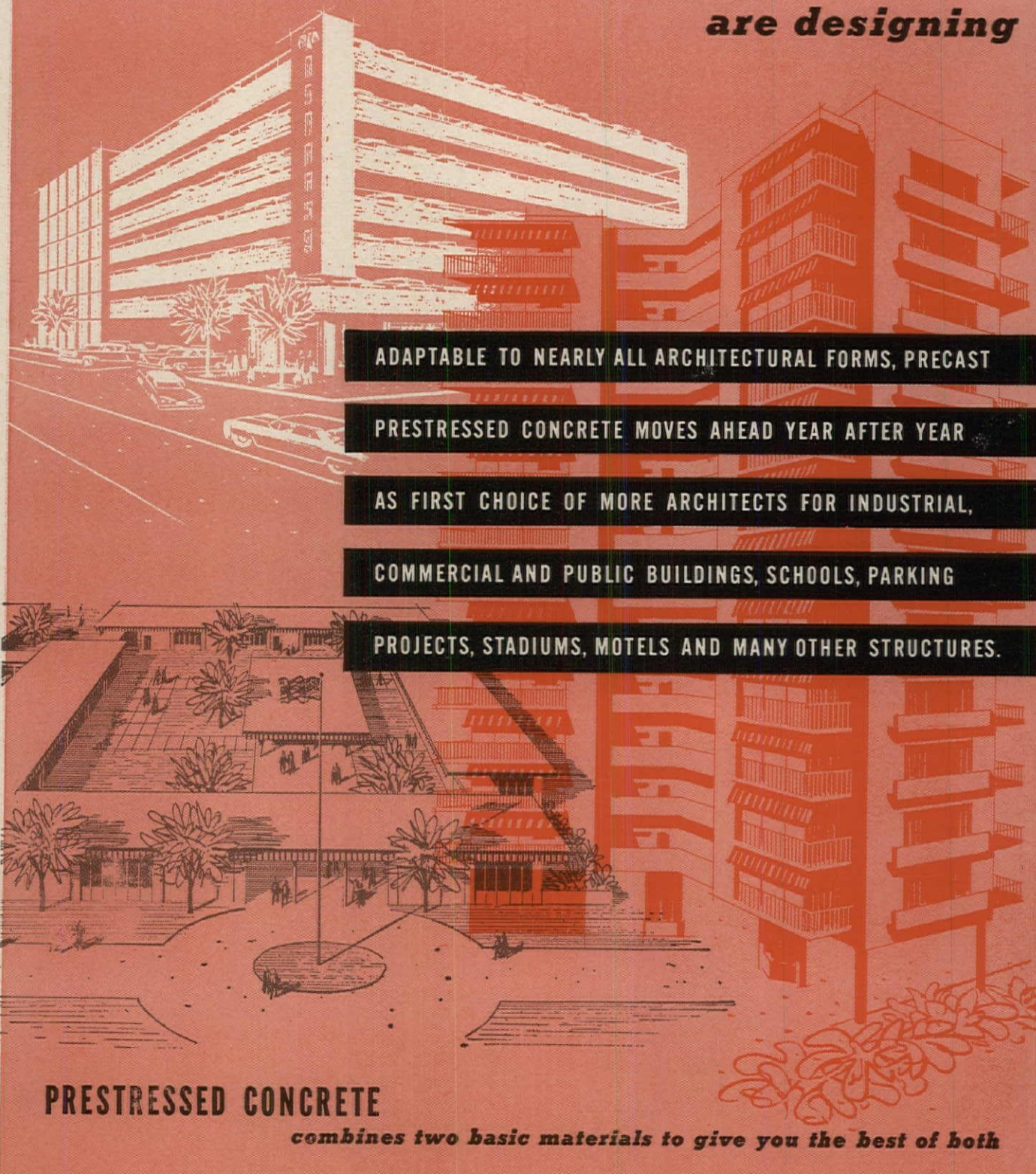
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LONG SPANS, SHALLOW DEPTHS... for fewer columns, more usable floor space. High strength produced by prestressing allows the design of well proportioned building members of limited depth for given spans.

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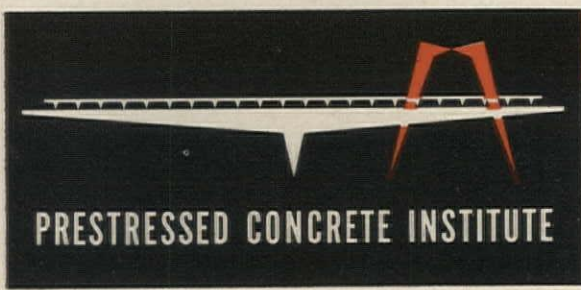
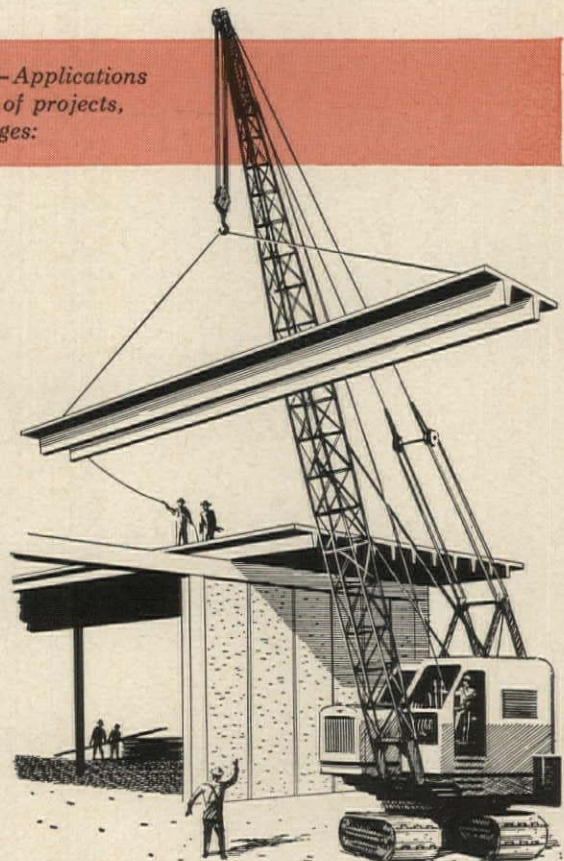
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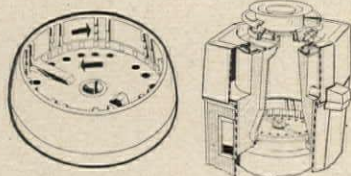
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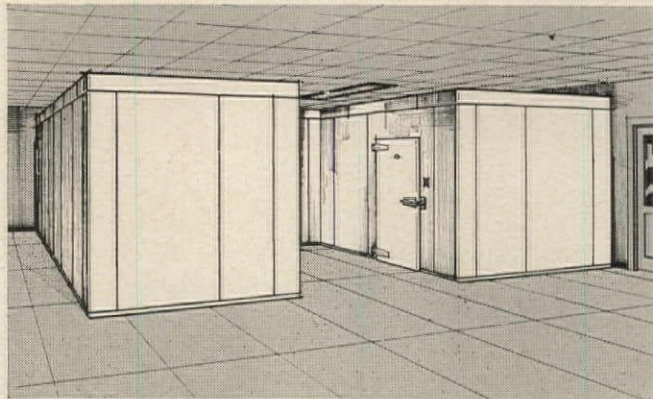
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Installation in the Suburban Country Club, Baltimore, Md. Specifications prepared by Henry Adams, Inc., Consulting Engineers, 2315 St. Paul Street, Baltimore, Maryland.

Bally pre-fab walk-ins *all-metal coolers and freezers*

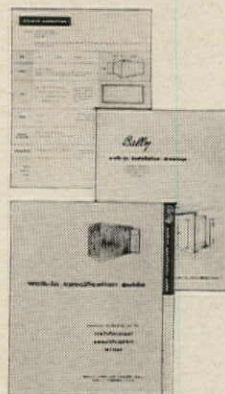
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Includes guide for specification writers . . . 16-page Walk-In book . . . portfolio of 48 installation drawings and specifications. Also included is a Walk-In description form to request plans and specifications from Bally engineers for individual installations. Write on your company letterhead.

See Sweet's File section 26a/Ba.



*Based on cost scales in Metropolitan areas.

Bally

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Bally, Pennsylvania



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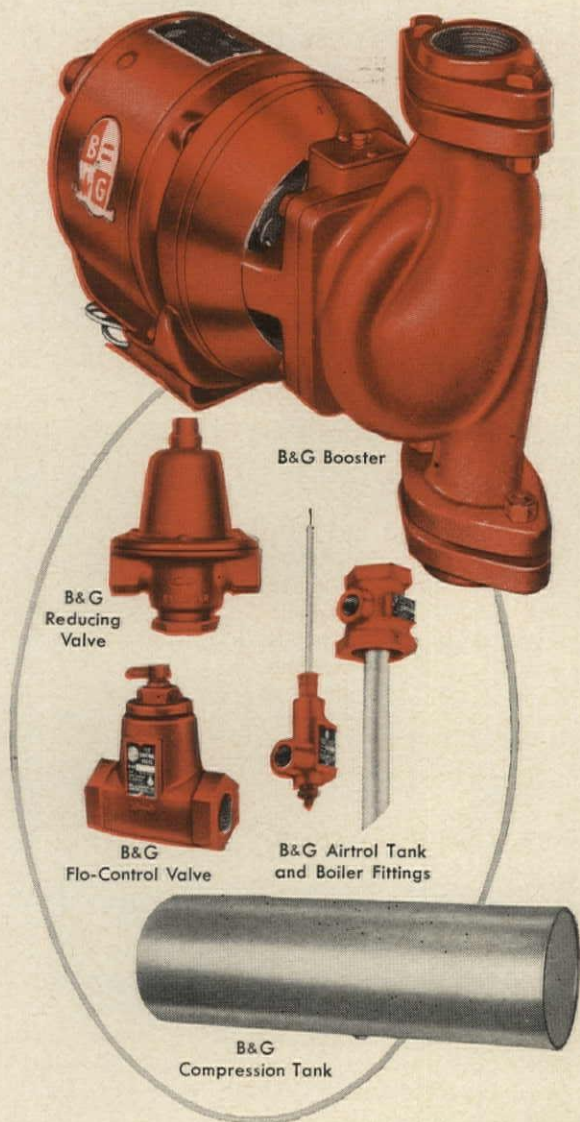
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The building is divided into nine zones for better temperature control, with each zone served by a B&G Booster. A bronze Booster is used for circulating domestic hot water.

Over 3,500,000 Boosters are in service today...clinching evidence that their superior quality and performance has never been challenged. The reasons why they so completely dominate their field are not hard to find. Above all they are *quiet—vibrationless*...the prime essentials of a forced hot water circulating pump. They are dependable and profitable—not a cause of endless service and customer dissatisfaction. Sound design and sturdy construction of best materials assure efficient performance for years.

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New from Koppers

25 years of bonded

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KOPPERS
ROOF BOND



This 27 year old store of the J. C. Penney Company in Milwaukee has been given a million-dollar-plus remodeling job which involved everything but the water-cooled roof. Although the Koppers coal-tar pitch roof has been constantly under water for 27 summers, it is still in excellent condition, and should last many more years.



The original 20 year bond on the John A. Nichols School in Syracuse expired more than 12 years ago, but this Koppers roof continues to give trouble-free service year after year. Its coal-tar base is totally resistant to water penetration. No other built-up roofing material can offer 32 year service records like these.

roof protection for the cost of 20!

So many Koppers roofs have been maintenance-free for twenty-five, thirty and even thirty-five years that Koppers has decided to introduce the Plus-25 Koppers Roof Bond, *with no extra premium charge!* The two roofs illustrated at left are examples of why we're offering architects this new 25-year roof bond. These roofs are typical of numerous installations that have established 25-year plus service records.

Koppers roofs have stood up against blustery winter extremes and sizzling summer heat. Coal tar, with its natural cold-flow characteristics, heals hairline cracks and stops real trouble before it can start. Coal tar also is completely resistant to water penetration, the most serious threat to long roof life; in fact, it is well-known that coal tar is the most water-resistant roofing material in existence.

So when you're specifying a roof for your next building, take advantage of the longer protection you'll receive with a Plus-25 Koppers Roof Bond. It costs no more than the 20-year guarantee available on other roofing materials. And you'll protect your building with a cover made of nature's finest protective material—coal tar—processed by the industry's most experienced manufacturer, Koppers Company, Inc.

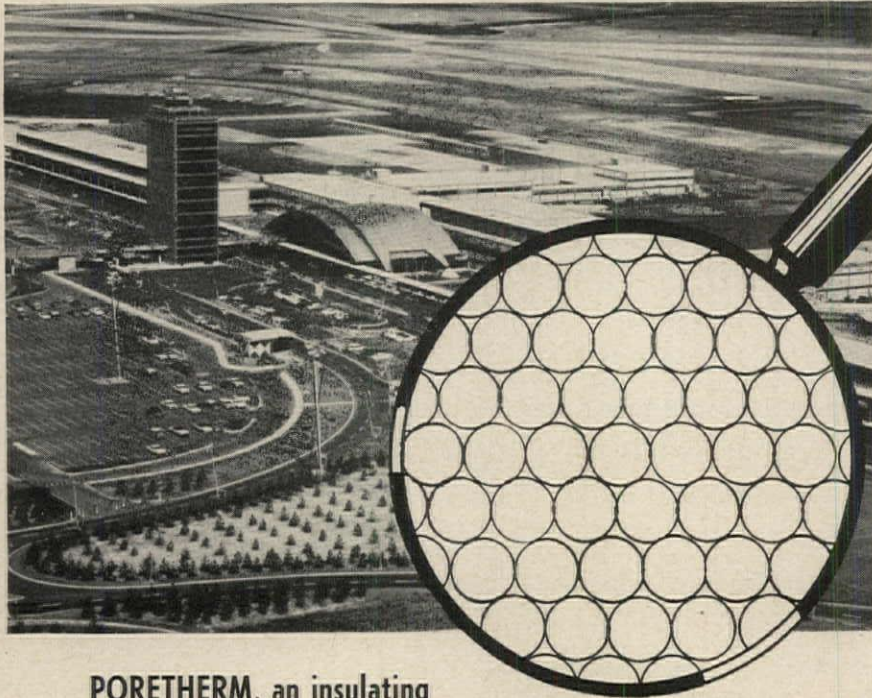
Ask your Koppers representative to tell you more.



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Pittsburgh 19, Pennsylvania

AIR WAS USED AT IDLEWILD TO PROVIDE A BASE FOR ROOFING



POREATHERM, an insulating cellular concrete, was chosen for the roof and promenade area of the huge International Arrivals Building.

Poretherm, with mechanically produced air-bubbles is an insulating concrete used in combination with corrugated steel decking. It is applied as a continuous surface with no seams or cracks and the "dead air" spaces act as an air-concrete blanket that produces good insulating qualities.

Poretherm, an inert material, is permanent and cannot deteriorate. In combination with corrugated steel deck it provides a lightweight, fire-resistant roof with high structural strength.

If your plans call for construction meeting these characteristics specify Poretherm insulating cellular concrete.

OTHER CANTILITE PRODUCTS WERE USED ON THE FOLLOWING BUILDINGS AT IDLEWILD:

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Architects: Kahn & Jacobs
Structural Engineers: Severud, Elstad, Krueger Associates
- FOOD PRODUCTION CENTER**
Architect: Louis Allen Abramson
Structural Engineers: Fraoli, Blum, Yesselman
- BUS GARAGE AND MAINTENANCE BUILDING**
Architects: Brodsky, Hopf and Adler
Engineers, Thompson & Czark
- TELEPHONE BUILDING**
Architects: Vorhees, Walker, Smith, Smith and Haines
- SWISSAIR TERMINAL**
Engineers: Amman & Whitney

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The Record Reports

continued from page 96

Some institutions have built satellite campuses on the edges of their cities; others retreated to the country altogether. The urban university, if its function is to serve the needs of city people, must find another answer.

In a report by Educational Facilities Laboratories, a Ford Foundation establishment to help American schools and colleges with their physical problems, the problems choking downtown educational institutions are explored and solutions suggested.

Entitled "Space Dollars: An Urban University Expands," the study deals with the most economic ways of staying in the city and providing increased instructional space as well.

At what cost in land price does a high-rise, multi-story academic building make more sense than a low one? The report reveals the answer to be when land costs approximately \$4.50 a sq ft or more. But perhaps a new building isn't necessary; there may be an industrial structure next door that can be converted into classrooms or laboratories for less money and in less time than it takes to construct a new one.

How to get more yield out of present space and reduce the need for the quantity of new building? How to determine the amount of future space to build?

The answers to these questions and others are based on a case history of Drexel Institute of Technology, a typical urban institution with typical problems located in downtown Philadelphia.

Copies of "Space and Dollars: An Urban University Expands" are available without charge from Educational Facilities Laboratories, 477 Madison Ave., New York 22, N. Y.

Cincinnati U. Appoints New Assistant Professor

Oystein Egeland-Eriksen has been appointed assistant professor of architecture in the College of Applied Arts of the University of Cincinnati. Born in Norway, he received his Bachelor of Architecture from the University of Durham, England. He is particularly interested in civic design in architecture and has worked in the city planning field in Norway.

more news on page 246



Vendors for Kotex napkins lower absenteeism —eliminate embarrassment—raise morale

3 types to choose from!

1. Recessed vendors hold 63 individually wrapped napkins. Available in white enamel, satin chrome, polished chrome and stainless steel. Can also be surface-mounted, if desired.

2. Surface mounted vendor for boxed Kotex, holds 15 individually boxed napkins. Adjustable for free, five-cent or ten-cent vending. White enamel, bright chrome or satin chrome finishes.

3. Surface mounted vendor for envelope Kotex, dispenses 22 individually packaged napkins. Sturdy, 20-gauge steel cabinet available in white enamel, satin chrome or bright chrome. Operates as nickel, dime or free vendor.

The great convenience of restroom vendors is appreciated by both tenants and employees. And only Kotex offers three types—making it the most complete personal service available for your building. All are easy to install—all have trouble-free, longer-wearing cold-rolled steel coin mechanism.

Vending machines for Kotex belts augment this needed service.

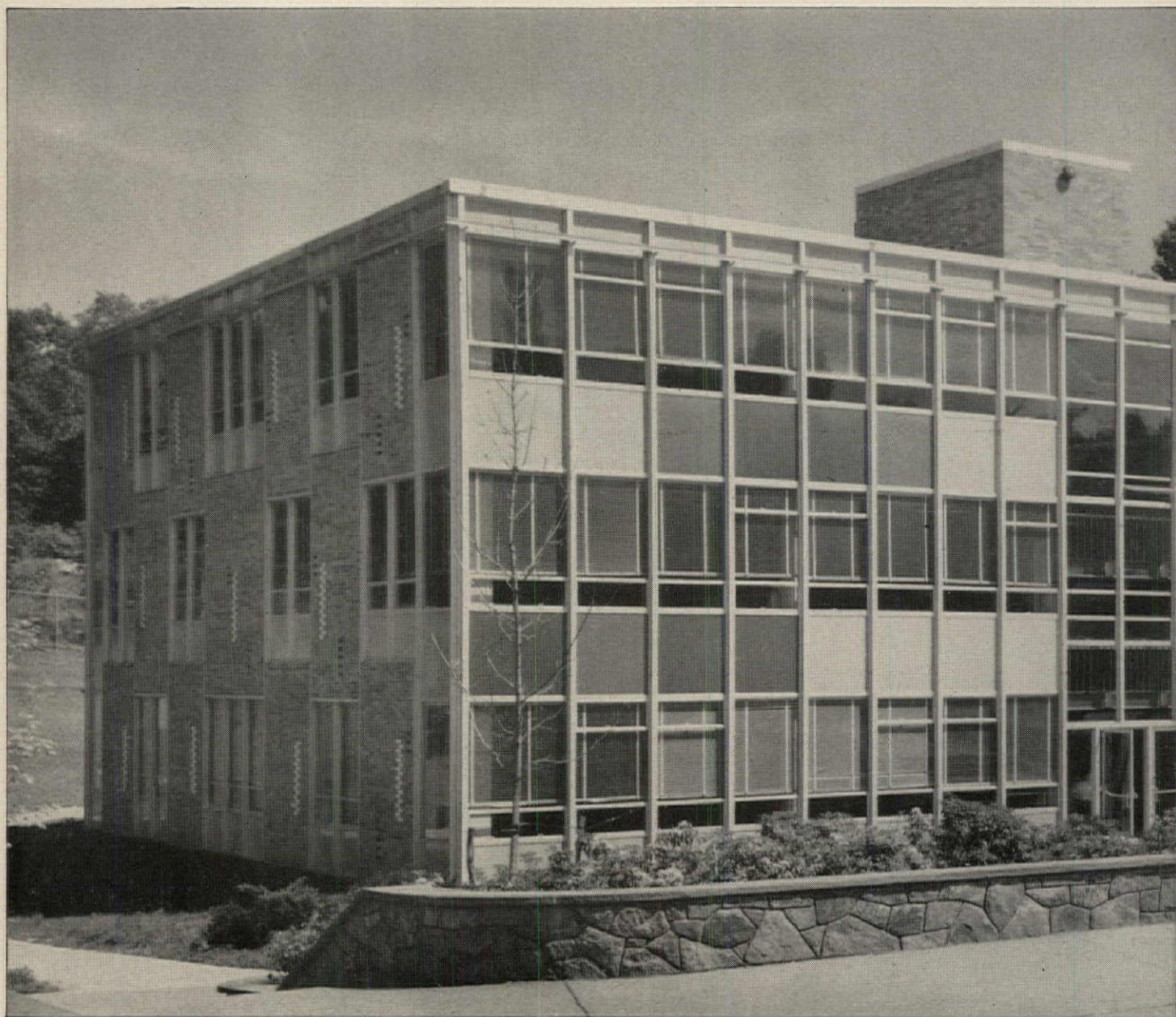
More women prefer Kotex feminine napkins than all other brands

KOTEX is a trademark of KIMBERLY-CLARK CORPORATION

Kimberly-Clark Corporation, Department Number AR-91, Neenah, Wisconsin

Please send complete information on vending machine service for Kotex feminine napkins.

Name _____ Organization _____
 Title _____ Address _____
 City _____ Zone _____ State _____



LUPTON aluminum curtain walls create striking patterns in color at Yonkers' new Walt Whitman Junior High School

The bold, imaginative use of colors and patterns . . . in interiors and exteriors . . . is the most dramatic feature of ultra-modern, new, three-story Walt Whitman Junior High School, Yonkers, N.Y.

On two sides of the building, the architect utilized LUPTON Aluminum Curtain Walls . . . their spandrels forming attractive random patterns of several colors.

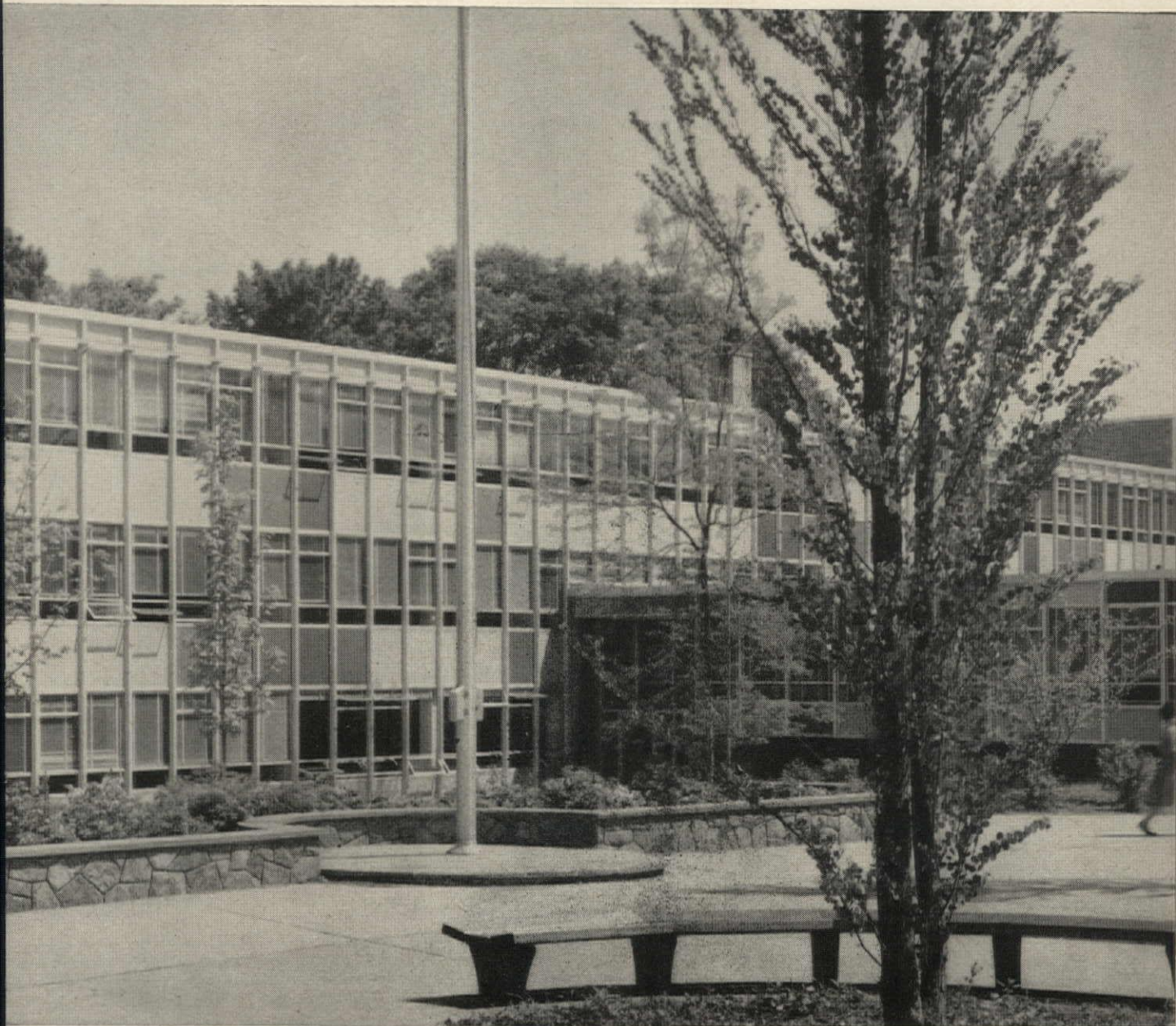
The Walt Whitman Junior High School illustrates the exciting design possibilities for you inherent in LUPTON Aluminum Curtain Walls. A wide range of colors, windows in various styles, panels of metal or glass allow you unlimited creativity in design. This handsome modern wall construction provides striking visual

effects when used alone or with brick, stone, and other materials.

LUPTON Aluminum Curtain Walls and Windows offer you such dollars-and-cents features as: low initial cost, virtually no maintenance, and effective thermal insulation (two metal skins form a built-in vapor barrier).

Installation is worry-free because LUPTON assures you of accurate fitting and alignment of all component parts. It offers you a single source of responsibility for both the manufacture and the erection of the entire assembly.

See the LUPTON Aluminum Curtain Wall and Window Catalog in Sweet's (sections 3 and 17). Then talk to your local LUPTON man or write to us for details.



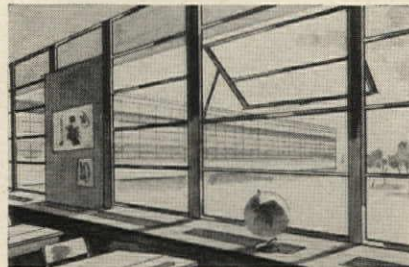
Walt Whitman Junior High School, Yonkers, N.Y.; Architect: Eli Rabineau, Yonkers, N.Y.; Engineers: Abrams & Moses, New Rochelle, N.Y.

Photograph by C. V. D. Hubbard

**OTHER LUPTON
PRODUCTS THAT MAY
SOLVE PROBLEMS
FOR YOU ARE:**



Double Hung Windows. LUPTON DH-A2 aluminum double-hung windows are custom built for installation in masonry construction or metal curtain walls. Woven-pile weather-strip and barrel type suspension give smooth operation and weathertight closing.



Projected Windows. LUPTON "Master" windows in projected or casement types—used equally well in curtain walls or in masonry construction. Tubular ventilator members for extra rigidity... double weather-stripping, bronze hardware.

LUPTON[®] MICHAEL FLYNN MANUFACTURING COMPANY

Main Office and Plant: 700 East Godfrey Avenue, Philadelphia 24, Pa., West Coast Office and Plant: City of Industry (Los Angeles County), California. SALES OFFICES: Stockton, California; Chicago, Illinois; New York City; Cincinnati, Ohio; Dallas, Texas. Representatives in other principal cities.

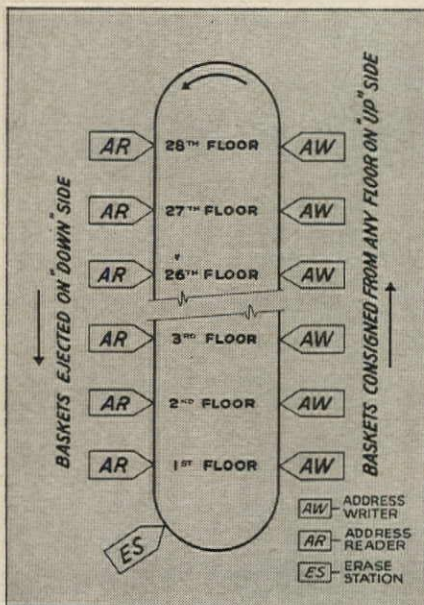


STANDARD CONVEYOR Recordlift distributes a daily volume of mail equal to a 1st class postoffice throughout the 28 stories of the Kaiser Center office building. The operator merely pushes a button to send the mail basket to the proper floor . . . button determines a magnetic code for address tabs on the conveyor carriage.



KAISER CENTER, Oakland, California. ARCHITECTS: Welton Becket & Associates. GENERAL CONTRACTOR: Robert E. McKee General Contractors, Inc.

High speed mail distribution streamlines the paper flow in new Kaiser Center



"Magnetic memory" control system has no moving parts, no levers, no between-station wiring . . . nothing to wear out. Diagram shows how address "writers" and "readers" are located between the building's 28 floors. If you are planning a multi-story building where mail distribution can be a problem, get the full details now on fast and efficient Recordlift!

At Kaiser Center's towering new 28-floor office building, mail is distributed every half hour. Yet it's all done without the usual cost and confusion of interfloor mailboy traffic.

Instead, a modern and efficient STANDARD CONVEYOR Recordlift whisks the mail, interoffice correspondence and other vital business records to central dispatching mailrooms . . . rapidly, economically, automatically.

Dispatching is simple, speedy, selective. The operator merely puts

the material in the container, pushes the button for the proper floor and Recordlift delivers it in minutes. Mailboy hours are saved . . . speed and efficiency are gained.

If you have a multi-story building project pending, remember Recordlift, the modern mail system. It saves your client the cost and clutter of interfloor mailboys . . . with push-button speed, economy and efficiency!

Write today for illustrated data file . . . or simply clip this ad to your letterhead and mail it.

Check into these typical Standard Recordlift Installations

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Jacksonville, Florida
- State of Minnesota Department of Highways
St. Paul, Minnesota
- Ohio Oil Company, Findlay, Ohio
- Ontario Hospital Services Commission
Toronto, Ontario, Canada
- Bank of America Service Center Building
San Francisco, California
- Bankers Life Company, Des Moines, Iowa
- State of California Compensation Insurance Fund Building
San Francisco, California
- State of Minnesota State Office Building
St. Paul, Minnesota
- State of Oregon, Salem, Oregon
- Western Electric Company, New York, N.Y.
- First National Bank, Minneapolis, Minnesota
- Lincoln National Life Insurance Company
Fort Wayne, Indiana
- City of Minneapolis, Public Library Division
Minneapolis, Minnesota
- Great West Life Assurance Company
St. Boniface, Manitoba, Canada
- Mutual Service Insurance Company
St. Paul, Minnesota
- State of Texas Employment Commission
Austin, Texas
- David Wohl Memorial Hospital
Washington University Clinic
St. Louis, Missouri
- State of California, California State Teachers Association, Burlingame, California
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Cincinnati, Ohio
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Structurally efficient!

EGSCO® insulated metal wall panels in Colorgard are architecturally effective for all building types

Whether the building design is industrial, institutional or commercial, the EGSCO system of interlocking metal wall panels offers simple, low cost and fast erection, ample insulation, pleasing wall configuration and built-in contemporary color finish.

For most modern buildings the extreme panel lengths available eliminate unsightly horizontal panel laps. Fasteners are exposed to neither view nor weather. This, coupled with factory caulking of vertical joints, eliminates any weak point of entry for weather corrosion.

The shimmering beauty of Colorgard is protected by Peelcote, a strippable polyethylene skin, until erection is complete.

EGSCO engineers provide the architect and engineer with structural standards to reduce drawing board time. Specify EGSCO for a sure bet. For complete information see Sweet's File 3a/Sm or write for Bulletin 61W.

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(top) EGSCO insulated wall panels with Colorgard in tan and gold were erected on this recently completed Williamsport, Pa., plant of The M. W. Kellogg Company, where the Power Piping Division is located, including engineering, research and field erection and the manufacture of power piping systems. Engineer and architect is Lester B. Knight and Associates, Inc., Chicago.

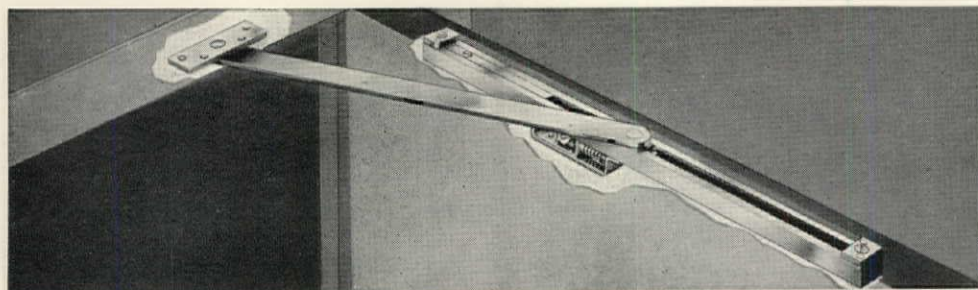
(middle) This is the new, modern Pittsburgh office of Carson, Pirie, Scott & Co., nationally known wholesale distributors of floor coverings. The architecture is enhanced by EGSCO Shadowwall panels in Colorgard Gold. The architect is J. Kenneth Myers; the contracting engineers are Mellon-Stuart Co., both of Pittsburgh.

(lower) A close-up view of a curtainwall of EGSCO Contourwall in Colorgard Green. The panels form the colorful insulated metal wall for a penthouse on the roof of a modern factory-type building.

GLYNN·JOHNSON

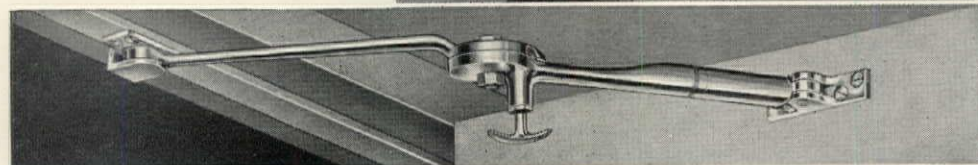
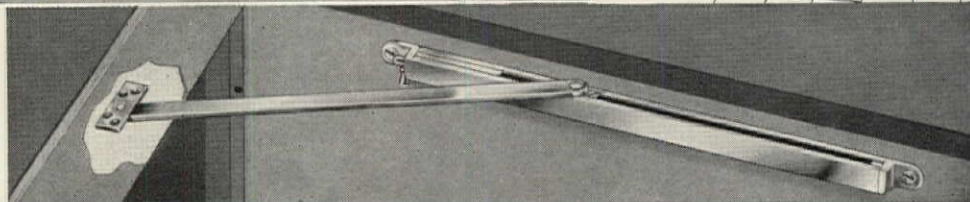
the complete line of OVERHEAD DOOR HOLDERS

*overhead means out-of-the-way...
no stumbling hazards — no interference with cleaning



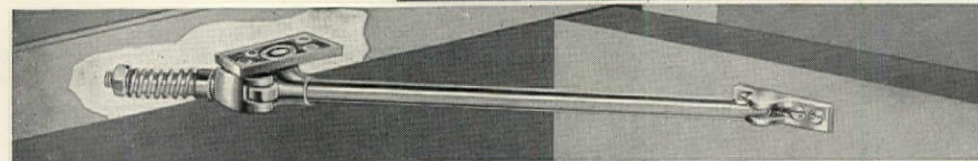
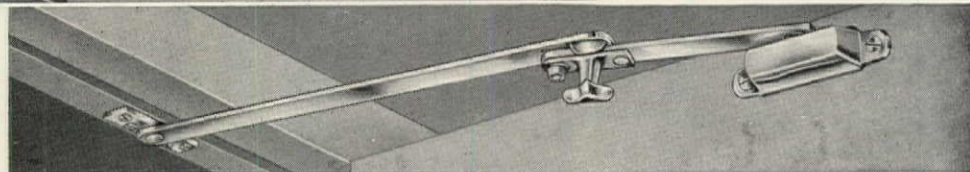
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concealed
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for single and double acting
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and long, trouble-free wear.

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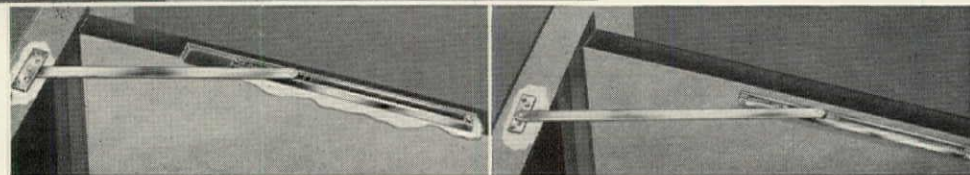
◀ **GJ ARISTOCRAT** (non-handed) for single acting doors. Ruggedly built for hard, practical usage.

▶ **GJ 80** (handed) for single acting doors. For moderate cost installations.



◀ **GJ 70** (non-handed) for single acting doors. Inexpensive for low-cost installations.

▶ **GJ 300 and GJ 500 series**
(non-handed) concealed for single and double acting interior doors. Surface type for single acting doors. Spring cushion types and friction holder type.



CUSHION THE STOP... silently absorbing the shock of violent openings.



HOLD THE DOOR... hold-open engages silently... holds firmly... releases easily.

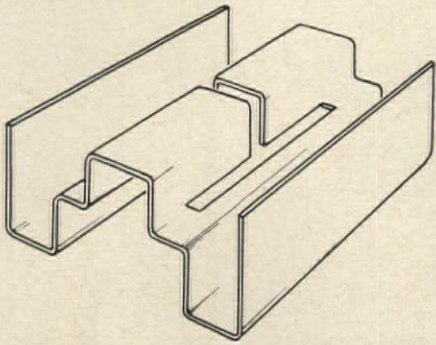
"Life of the building" GJ Overhead Door Holders are made of highest tensile strength alloys requiring minimum maintenance or replacements. They have built-in shock absorbers to cushion the stop and are made in various sizes for any width door.

Write for complete details and templates.

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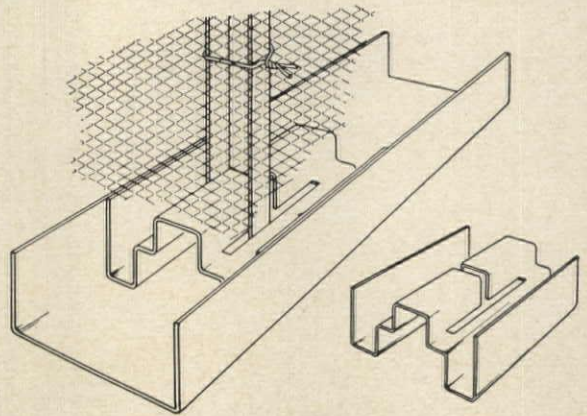


IMAGINATION IN PLASTER

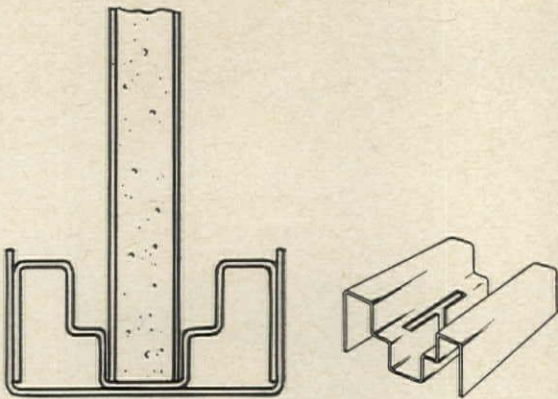


NEW LATH & PLASTER SYSTEMS

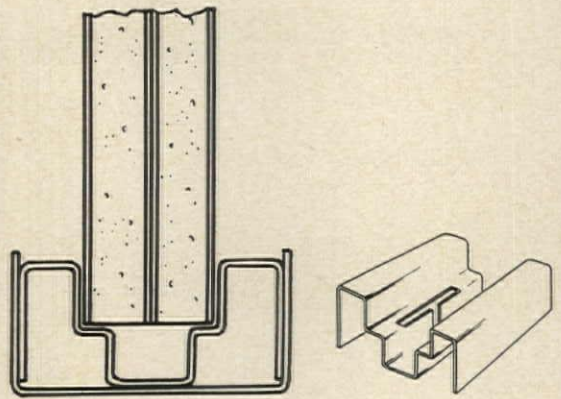
This unique, reversible, Gold Bond Floor Runner Insert can be used four different ways to produce a solid 2" partition.



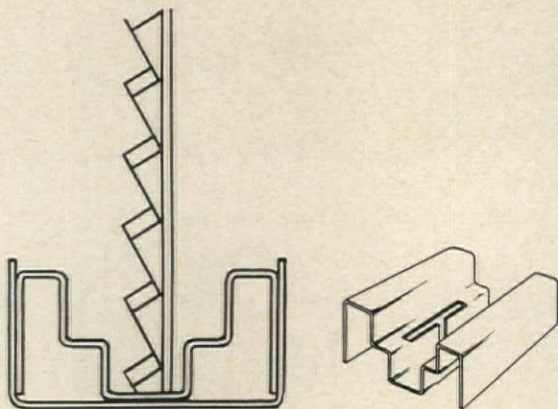
With $\frac{3}{4}$ " channel and Diamond Mesh Metal Lath wire-tied to one side of the channel.



With $\frac{1}{2}$ " Long-Length Gypsum Lath.



With 1" Gold Bond Laminated Long-Length Gypsum Lath (patented interlocking edges).



With $\frac{3}{8}$ " Rib Lath Base grouted with gypsum.

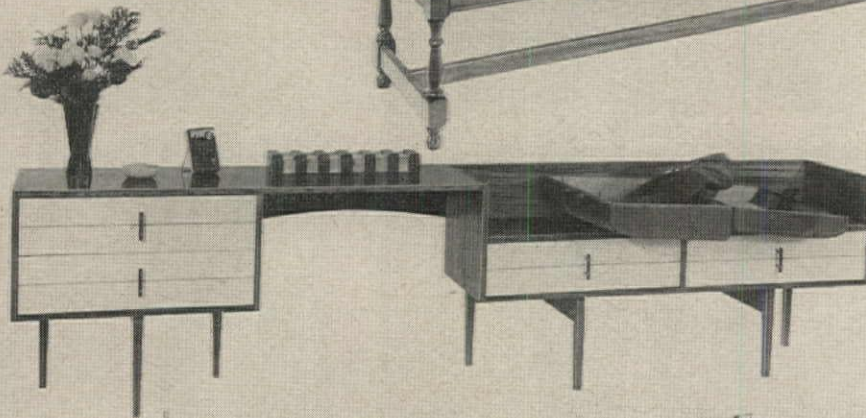
Another example of spacesaving, moneysaving, timesaving modern lath and plaster systems through imagination . . . from Gold Bond®.

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4 STYLE & ECONOMY ANSWERS TO YOUR FURNISHING PROBLEMS

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esquire



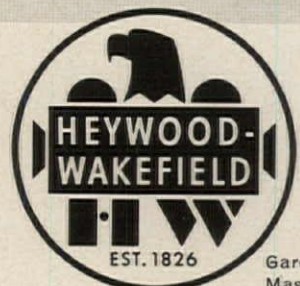
DANISH
MODERN



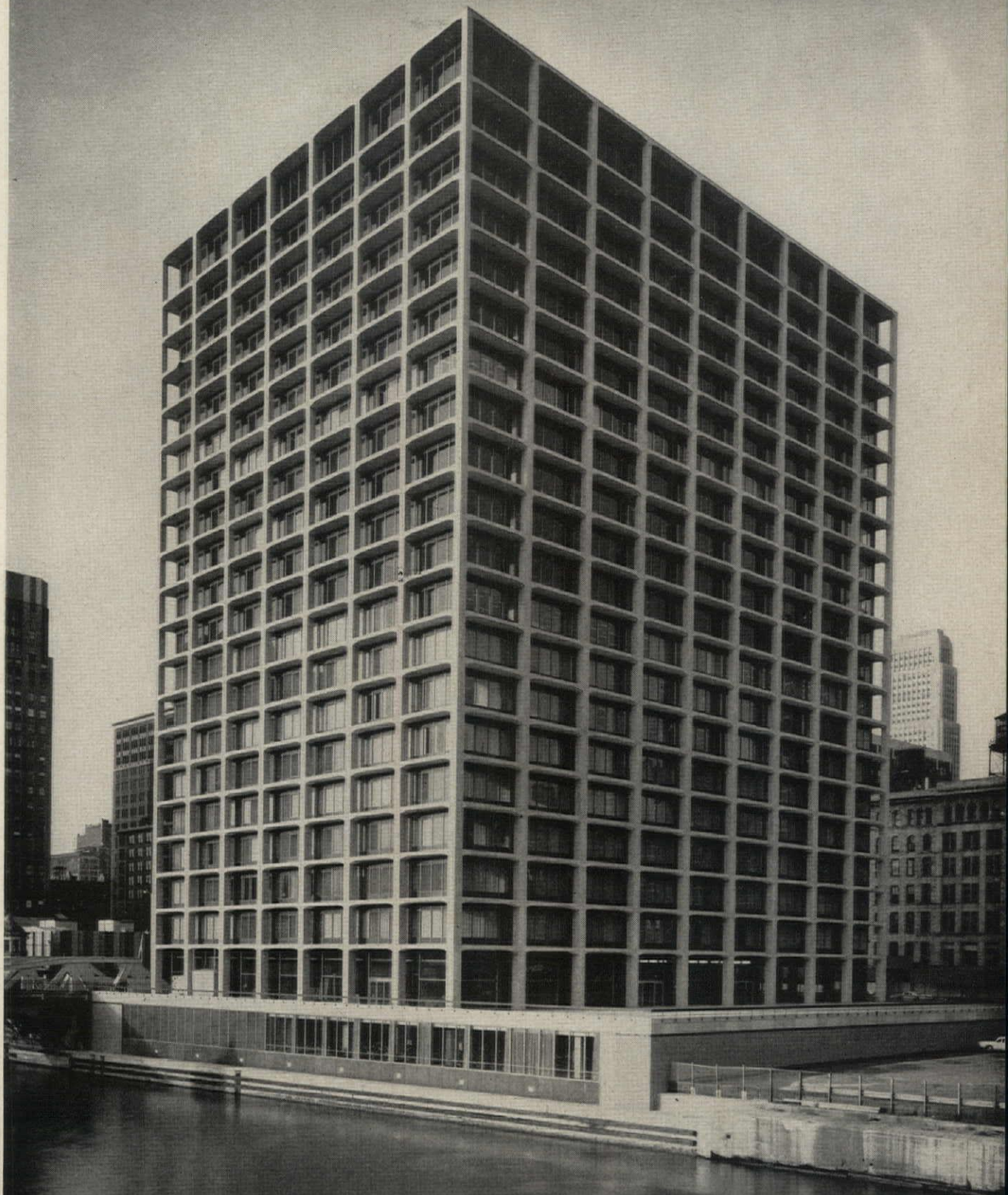
Riviera

No matter what your furnishing needs, you can fill them best from one reliable and economical source. Heywood-Wakefield now offers four new high-styled groups that will not only meet your most demanding requirements for beauty and craftsmanship, but for economy as well.

Take your choice...Riviera, Danish Modern, Esquire and Old Colony...today's best buys (today's wise buys) in hotel and motel furnishings.

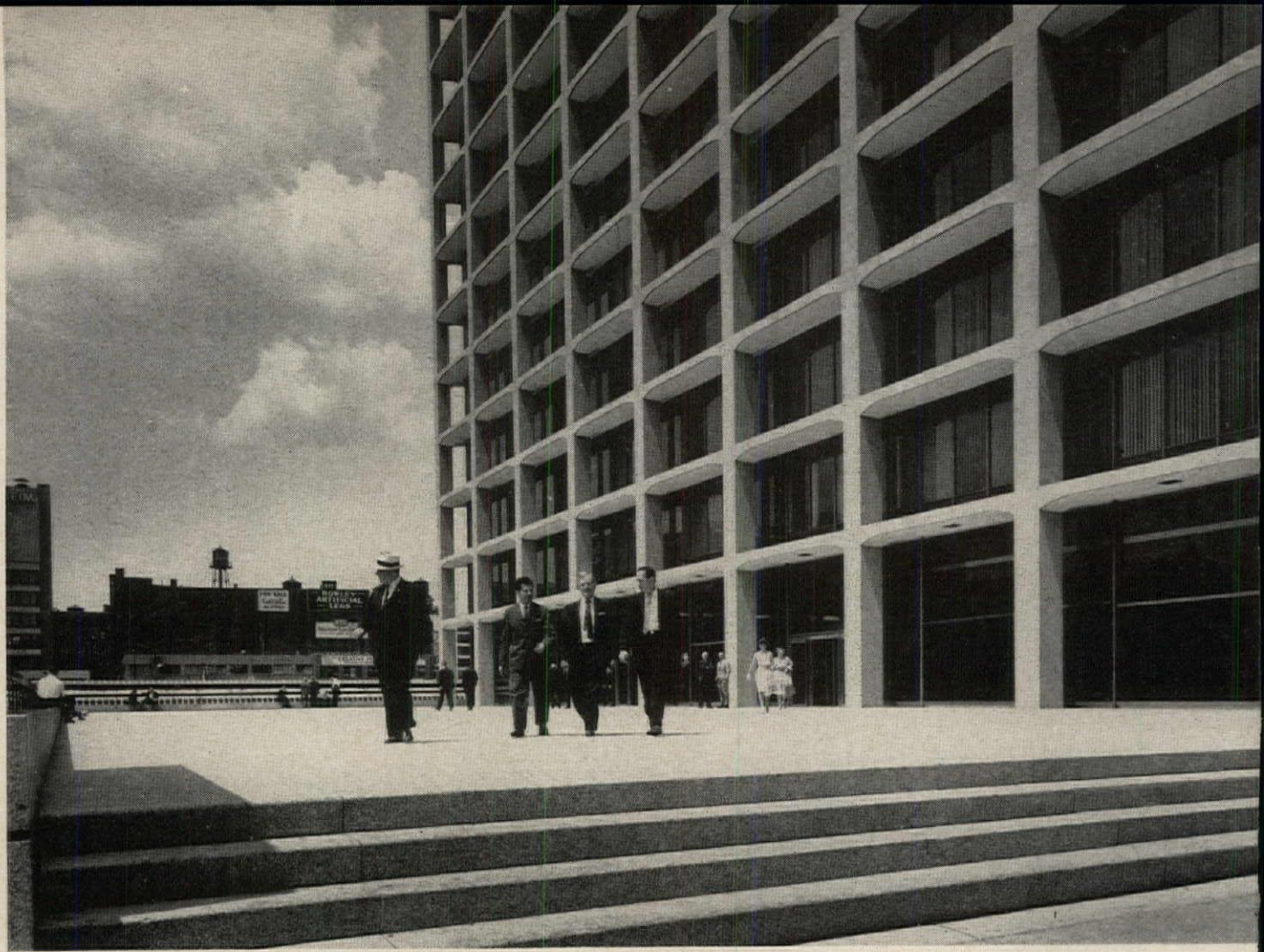


Gardner,
Mass.



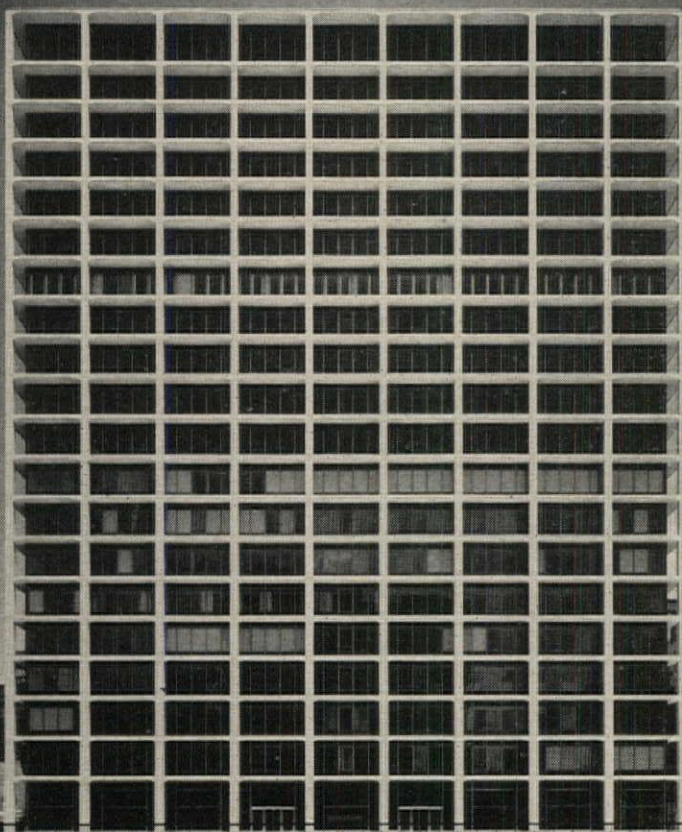
INSTITUTIONAL CHARACTER AT COMPETITIVE COST

*The Hartford Building, Chicago, Illinois
Skidmore, Owings & Merrill, Architects
Carl A. Morse, Owner's Construction Consultant
George A. Fuller Co., General Contractor*



The Hartford Building, Chicago: CONCEPT AND DESIGN

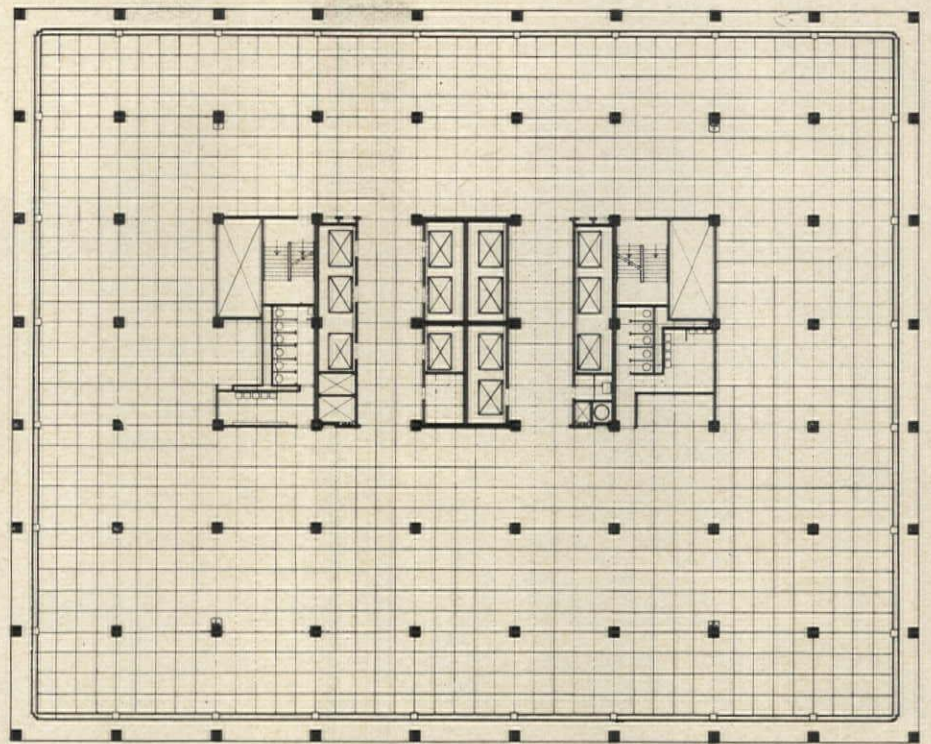
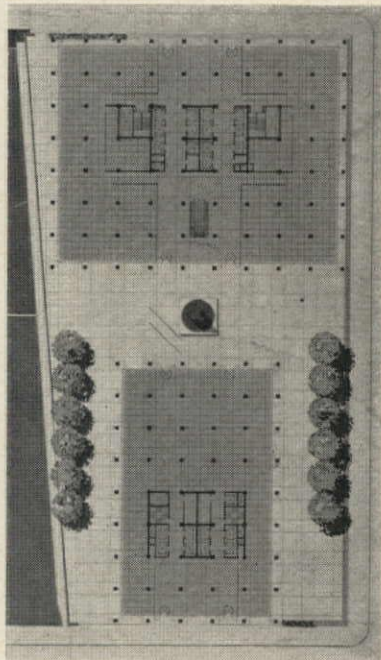
All photos © Ezra Stoller Associates



Constructed to provide rental return as well as owner occupancy, the new building in Chicago for the Hartford Insurance Group is notable for its high quality, prestige type design—built at a sq ft cost competitive with strictly speculative buildings.

For economy, a flat slab concrete frame with 22 ft square bays was chosen, and floors were set at 11 ft 6 in., providing 9 ft ceilings. The building was made almost square in plan (7 by 9 bays) to reduce peripheral wall area. The glass curtain was recessed 4 ft 6 in. to furnish sun-shading, cut the air conditioning load, and provide balconies for window cleaning. The light gray granite cladding meets the owner's request for a masonry exterior.

Esthetically, this concept offered the chance to exploit the formal characteristics of a flat slab structure—the thin, slab-edge horizontals (as opposed to the more familiar wide bands of dropped spandrel beams), and the rounded haunch connections at the column verticals. The result is a bold yet graceful expression of structure, in keeping with "Chicago School" tradition. The columns are tapered (nearly 8 in. top to bottom), an SOM refinement that adds visual subtlety to the façades.

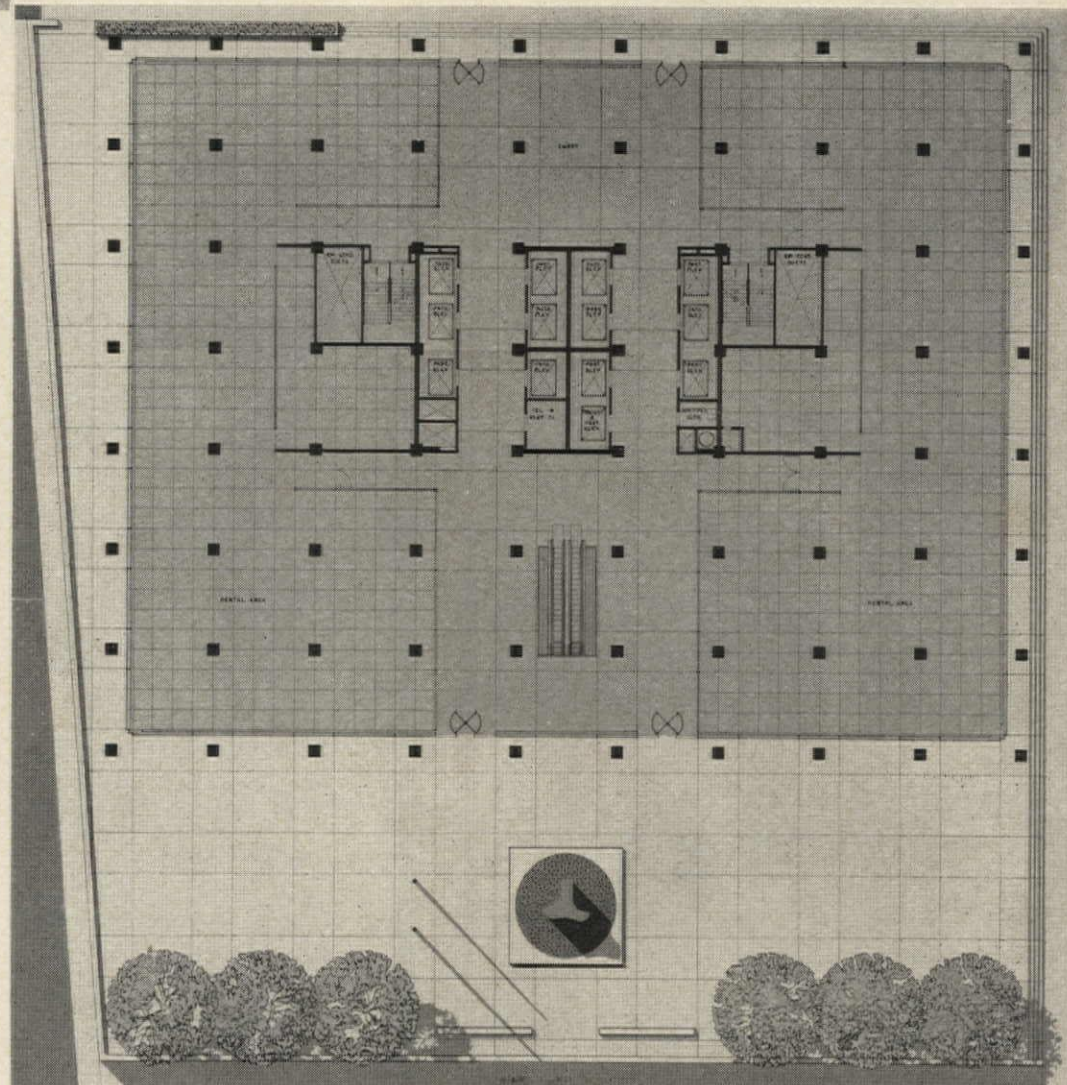


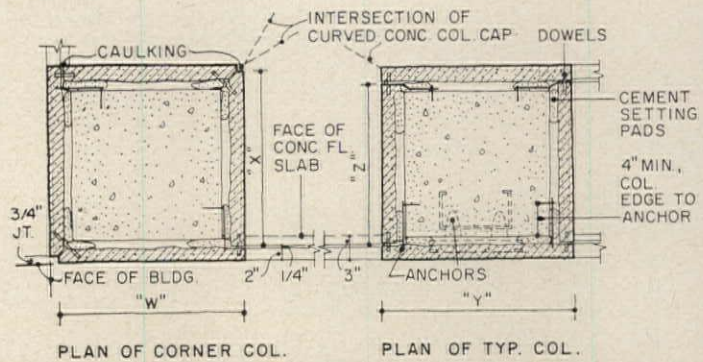
TYPICAL FLOOR

Good design at competitive cost came about through the close four-way teamwork of the owner, architects, owner's consultant, and general contractor, who made all decisions with those basic twin objectives in mind.

The plan—with its off-center core—provides two types of rental space: that of a proper depth for private plus secretarial offices; and the larger, deeper space appropriate for a general office clerical or stenographic pool.

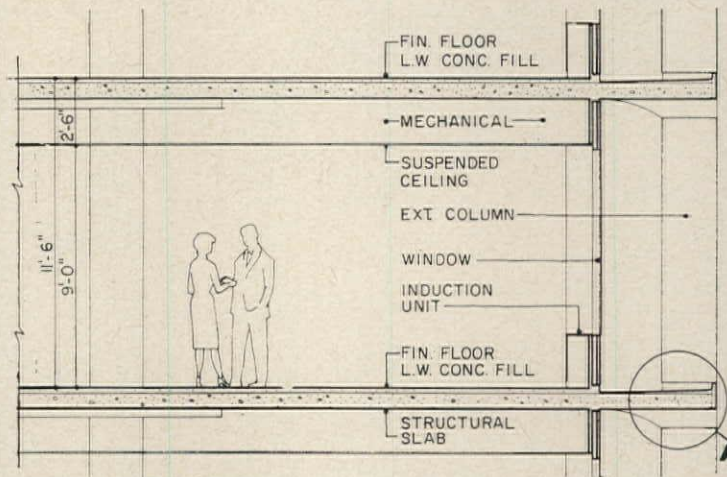
The plan above shows how a second building might be placed on the owner's property, a common plaza serving to link the two towers at ground level. No date has been set for such a development. The present plaza (now in the design stage) is not yet complete



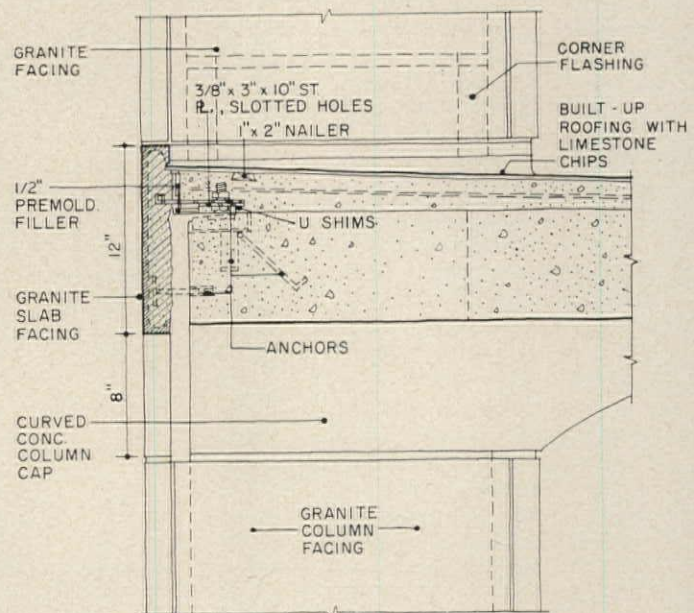


OUTSIDE COLUMN DIMENSIONS IN INCHES

FLOORS	W	X	Y	Z
1 TO 4	30¼	28	30	25½
5 TO 7	28¾	26½	28½	24
8 TO 10	27¼	25	27	22½
11 TO 13	25¾	23½	25½	21
14 TO 16	24¼	22	24	19½
17 TO ROOF	22¾	20½	22½	18



TYPICAL FLOOR SECTION

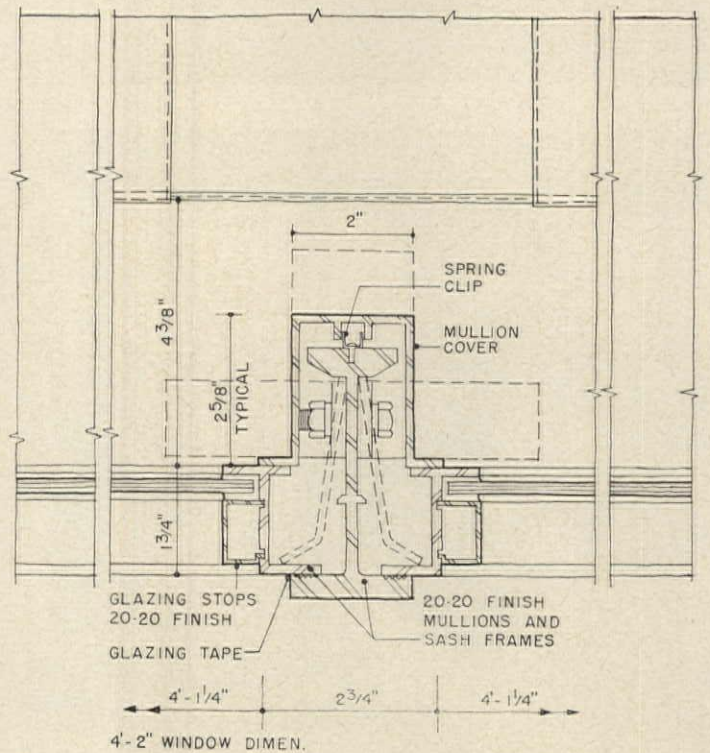
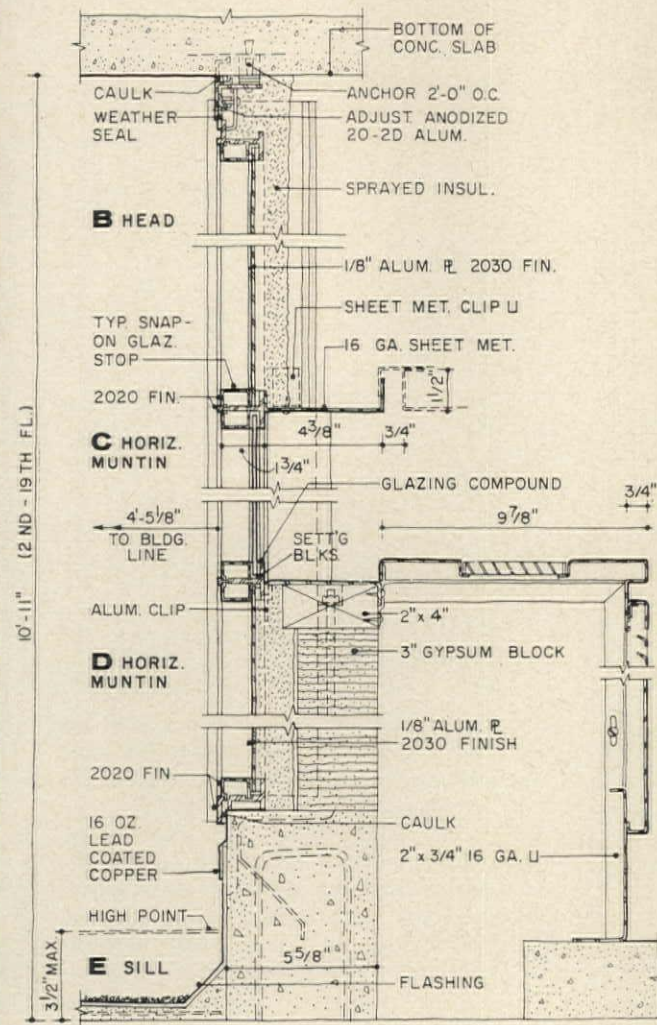
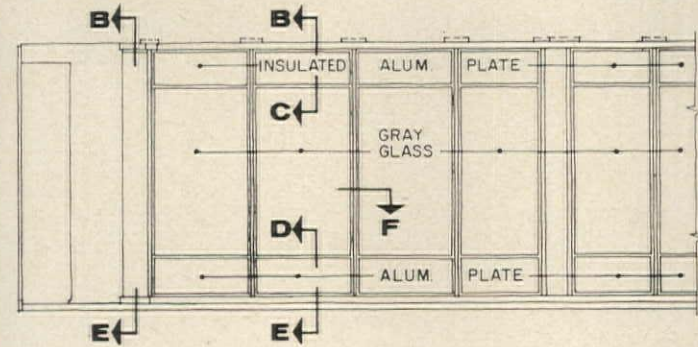
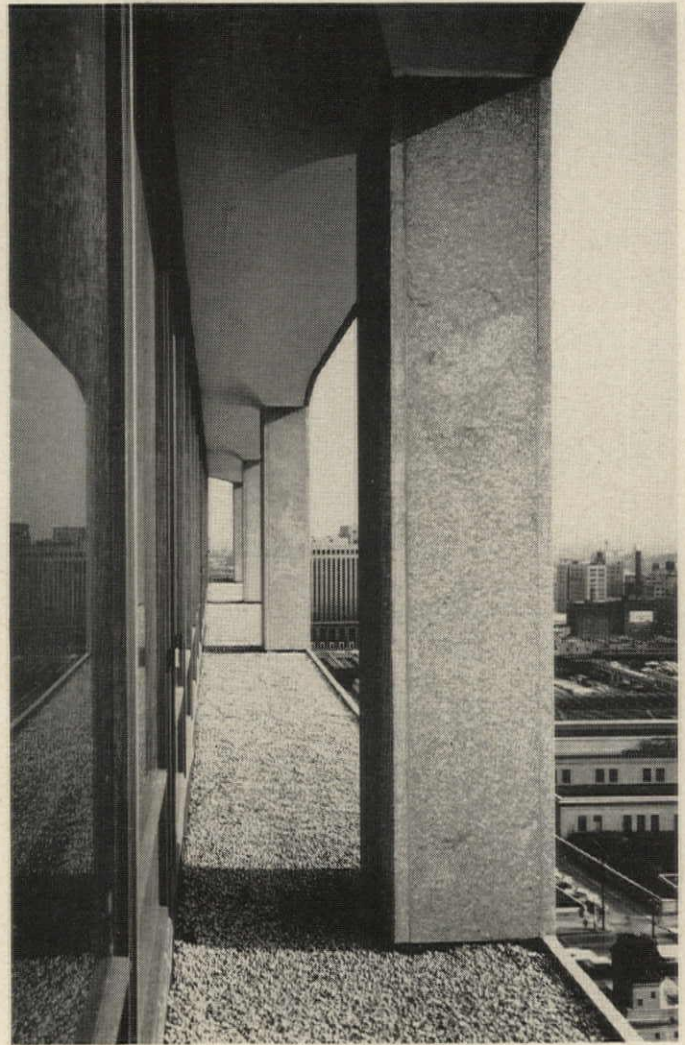


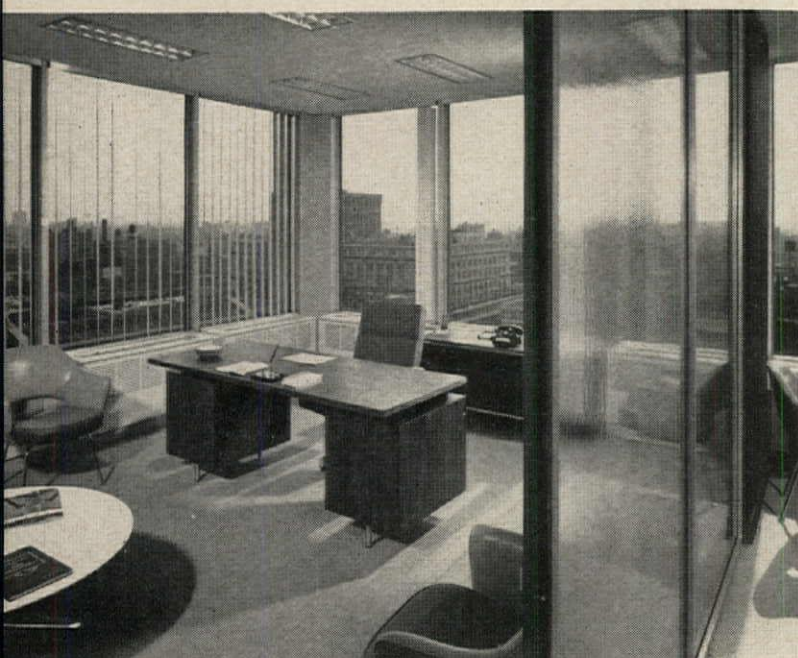
A

The Hartford Building, Chicago: CONSTRUCTION DETAILS

The exposed flat slab structure is sheathed with 2 in. slabs of light gray Cold Spring granite; details on left page. The table of dimensions explains how both typical and corner columns are tapered. For the corner columns, the outer exposed arris was held to a plumb line; for the typical columns, the outer face was kept in wind with a vertical plane.

Details of the aluminum and gray glass curtain wall, on this page, reveal how over-all economy was achieved by simplified sections, since all glass is sealed—except for four access windows at each level. The under-window induction units will be painted in accordance with tenants' demands; built-in vertical blinds will be provided for every floor

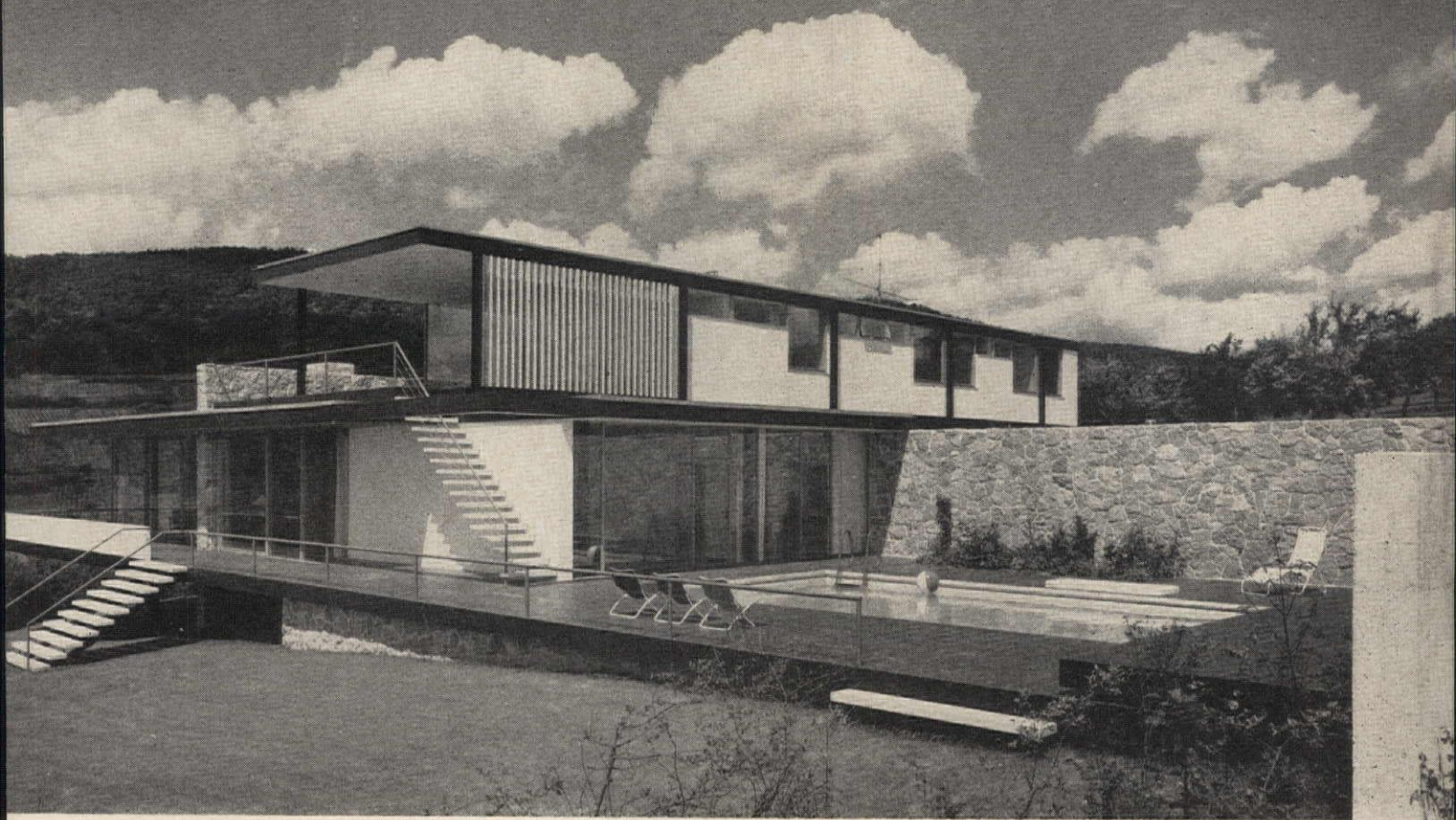




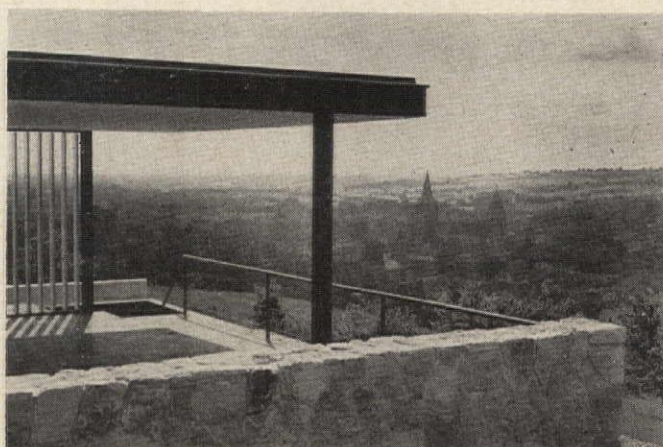
The Hartford Building, Chicago: INTERIORS

Above and left are shown views of the lobby (note the characteristic flat slab column haunches), a corner office, and an upper floor elevator lobby.

The dark gray slate paving for the plaza has been carried through as the lobby floor, and helps tie these spaces together. Plaza paving has been loosely set so that any given modular blocks may be removed to make way for planting boxes, pools, etc. as the plaza is landscaped and developed

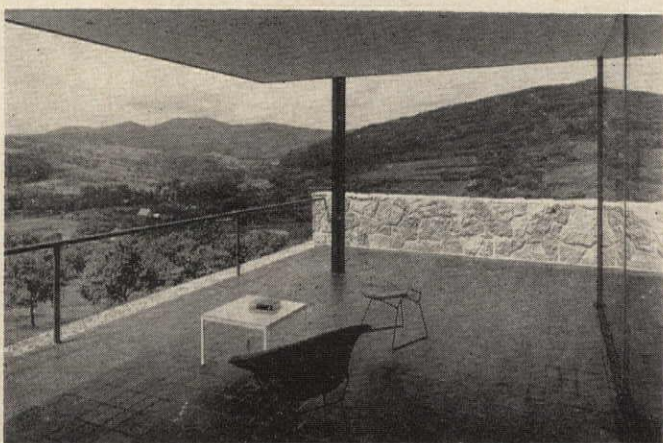


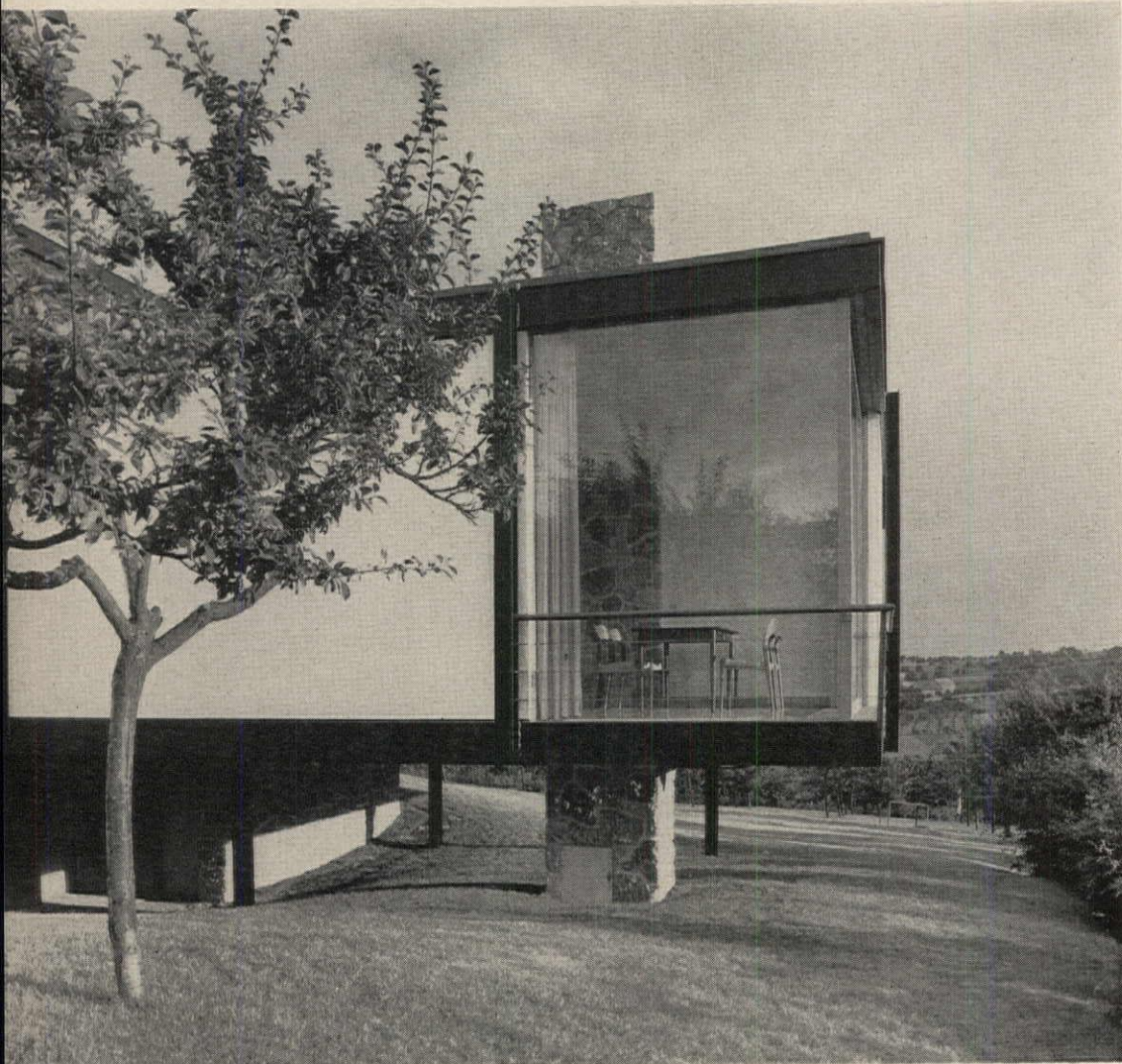
Ernst Deyhle



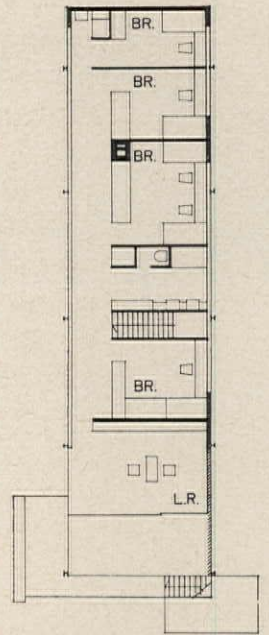
A MANY-TERRACED VILLA IN FRANCE

Country House in Alsace, France
Walter Brune, Architect

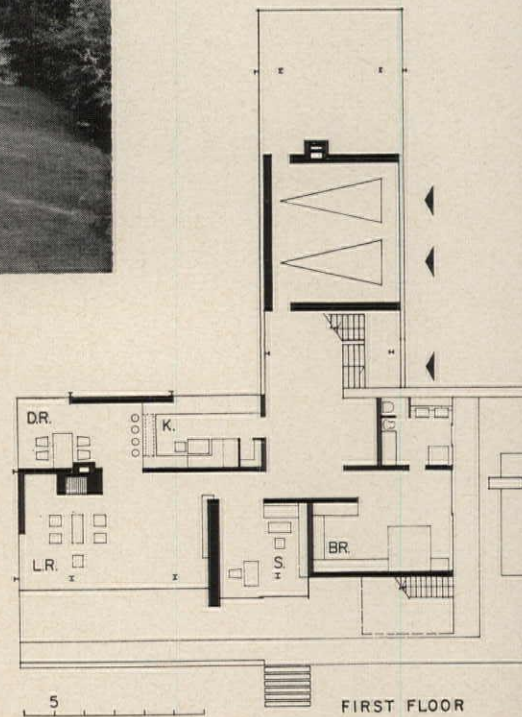




Ernst Deyhle



SECOND FLOOR



FIRST FLOOR

Country House in France

This neatly designed house was created to take the greatest possible advantage of its magnificent site: a hilltop overlooking the valleys and villages of the vineyard country in Alsace, France. Broad glass areas and outdoor terraces are located to make the most of the views.

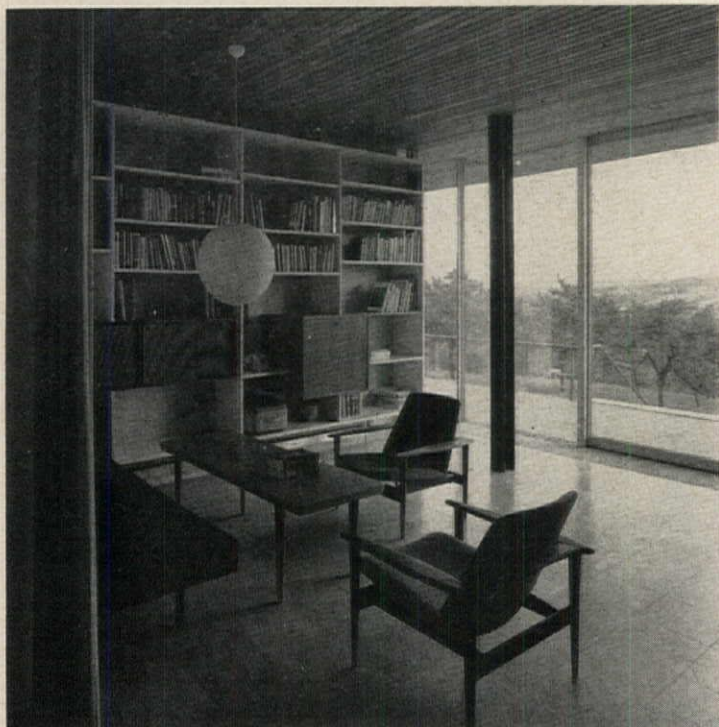
The house is a large and luxurious one, with parents' bedroom and living areas (including a swimming pool and deck) on the main floor, and four bedrooms and a second sitting area for children and guests on the upper floor.

The house is steel framed, which permitted a suspension over—and non-disturbance of—the rolling landscape. Quarry stone is used to enclose the massive basement, the pool area, and some of the major rooms of the house. Other walls are made of panels of lightweight concrete. Ceilings and built-in cabinets are of natural-finished wood. Built-ins were carefully planned to minimize the need for furnishings other than seats, tables and beds. The resulting spacious rooms were planned to show off a beginning art collection to greatest advantage.

Outdoor decks and terraces are planned as supplemental outside "rooms" to the house, and each is planned with considerable privacy from others.

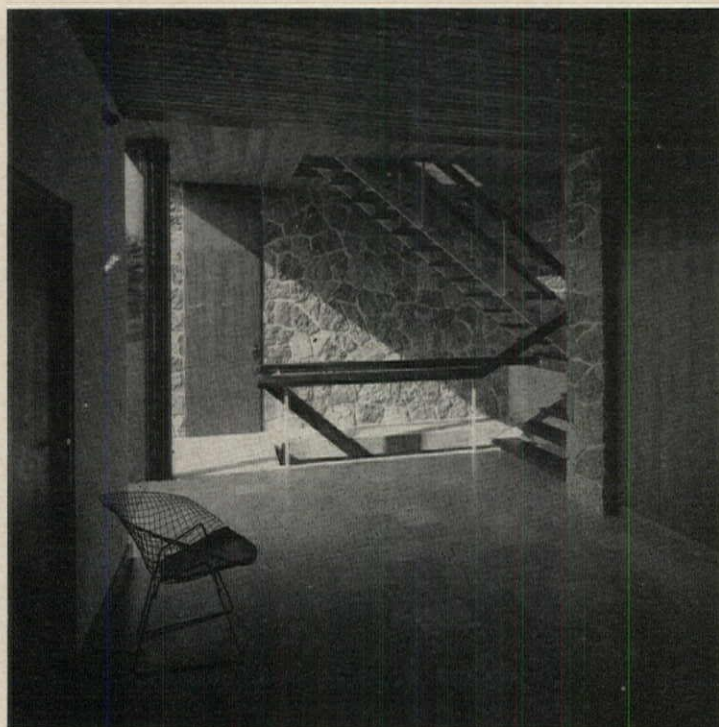
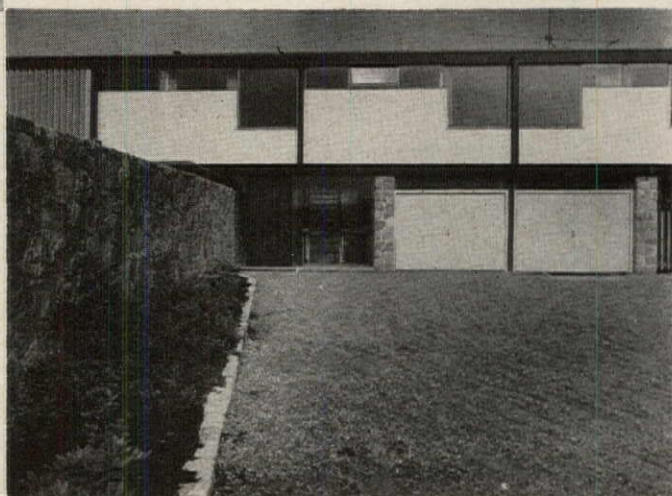
The major orientation of the house is to the south, with living room, library, and pool facing in this direction. All bedrooms are oriented to the east. The north façade turns mostly solid walls to the cold winter winds. A series of high windows line the west bedroom corridor.





Ernst Deyhle

Country House in France



The front of this house by Dusseldorf architect Walter Brune presents a partially enclosed motor court geared to enhance both the sense of arrival and the subsequent wide vistas of the major rooms of the house (center photo).

The much-abused corner window arrangement is put to excellent, and valid, use in most rooms to emphasize the outlook. The photo of the library at the top of the page is a good example of this.

The entrance hall (left) is spacious and underfurnished—establishing at once the quality of the house, and affording ample display areas for changing collections of art

The Architect's Role in Hotel-Motel Design

Architectural Record interviews James S. Craig, Vice President
of the Hotel Corporation of America, Staff Services Planning Division

Do architects play a major role in the basic programming of the hotels and motels you build?

I would say that the firms we work with certainly do, and even many architects designing hotels or motels for the first time know more about the way a hotel should be planned than the client. The hotel or motor hotel is somewhat related to a hospital, and rather like a miniature city. The architect is controlling a complex team of specialists and so are we. Ours know all about kitchens, bars, restaurants, linen storage and employe's facilities. The common problem we share with our architects is implicit in the fact that when you have two complex planning organizations working together over a period of two or three years, nothing is static. Specialists change their roles, responsibilities overlap, and a certain amount of friction is inevitable.

How do the main responsibilities for programming divide up?

The basic program concerns the size and number of guest rooms, which are set by management using criteria based on market surveys, financial arrangements, value of the land . . . if you are building on land worth two or three million the land value often dictates the program. Size of kitchens and other public and service areas are worked out by our own planning group. The architect's job as we see it is to co-

ordinate and fit together all elements into a coherent, efficient and pleasing whole.

From your point of view does the architect have blind spots in understanding your objectives?

Sometimes. The blind spot that bothers me the most occurs after our specialists and the architect have blocked out the program and its elements and the architect starts to develop shapes. What so often gets in the way is not so much a pre-conceived idea of what the design will be, but a too early fixing of the design at a time when pretty drastic changes may still be called for. It is not pre-conceiving, it is early conceiving, and it is too bad. From then on we find ourselves trying to tailor the shape the architect has fixed, and the architect tries to tailor our ideas to fit his shape. Some architects don't freeze that early but will go away with the revised program and come back with a different solution that fits the new needs. They will make drastic changes in the way of looks and plan.

What are the areas of research and study in the hotel field which are within the architect's realm and are not being adequately explored?

The problem that is not getting the attention it deserves is that of flexibility of use. The architect

should design for flexibility now, and for whatever changes may be necessary to prevent obsolescence forty years in the future. The economics require that hotel spaces be used for more than one purpose. Morning to noon use can be different from noon to dinner use; room uses change with the season. There are different uses on weekdays and weekends. Now at last we are building in some flexibility, but we are less able to change the character of rooms as we change their size and purpose. I have always been intrigued by how easily things are changed in the theater. It seems to me that more of these techniques could be used in changing the atmosphere of a room.

Multi-purpose rooms are almost never pleasant for any of their purposes. When the dividing partitions are folded back and you have the big room which is the ballroom . . . some ballroom. It isn't right as an assembly room either, and then you put your partitions back and you have your smaller conference rooms and they are grim. You call in a decorator and the decorator doesn't know how to do it. Too many purposes . . . what note can he strike? It seems logical to attempt to solve the problem with lighting.

Lighting is a major factor in creating this versatility. The architects we are working with are interested and feel that the lighting effects specialist can fill an important need. On every job we do we have a lighting specialist.

So often hotel areas are used for exhibitions but one rarely sees an installation in a room that has the proper facilities for exhibition. The merchant puts up his panels and puts out his products and they are never properly lit. Are architects and lighting engineers studying this problem for you?

It is being done. At the Edgewater Beach we are putting in a big "ballroom" but its primary use will be for exhibition space. It will have everything it must have. There is a grid in the floor which includes electrical power, telephone and television to allow exhibit servicing without exposed cables. In addition we are bringing in extra heavy electrical power, and are providing water supply and floor drains. There are outlets for overhead spots. Other older hotels will be

forced to do this kind of remodelling.

A complete change of furniture must be often called for in multi-purpose rooms. Do the architects provide enough storage for equipment not in use?

There is seldom enough storage planned but the owner is generally to blame. He compromises on storage area in order to increase revenue producing space ending up with a relatively unworkable space.

Are there other areas in which there should be more thought and research?

More thought should be devoted to traveler needs. Bedroom arrangements need further study.

There is a tendency to leave doors off closets now. Of course there is a repetitive economy there.

We don't.

Do you feel that this is pushing cost paring too far?

Some very brilliant people give some very crazy reasons for leaving off closet doors . . . such as so people won't leave things behind.

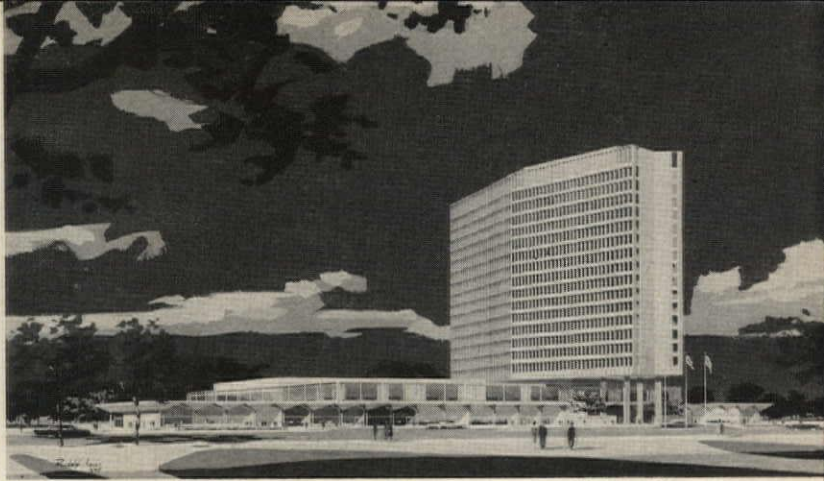
Owners leave the closet doors off in the less expensive rooms and leave them on in the more expensive rooms. This must be on the assumption that people paying more are less likely to leave their clothes behind.

The reason for leaving them off is cost of course, but we put them on.

Your organization is clearly oriented toward good architecture. How does this happen?

Investing in a good architect is the best protection against obsolescence. We are in the food business as long as our food stays good. Our hotels will stay ahead of the competition until someone builds better ones, and we won't let that happen.

Planned for Hidden Economy: Five Hotels-Motels by W. B. Tabler



Adolph Study

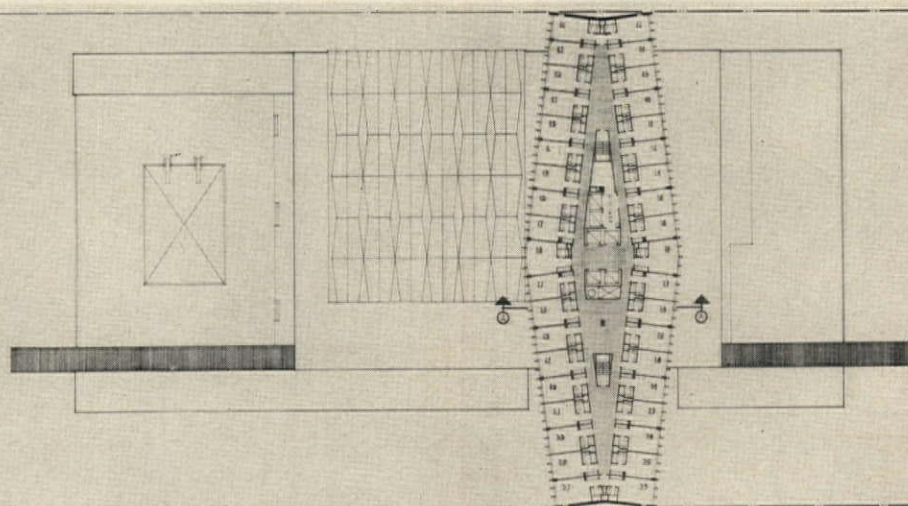
1. Buenos Aires Intercontinental

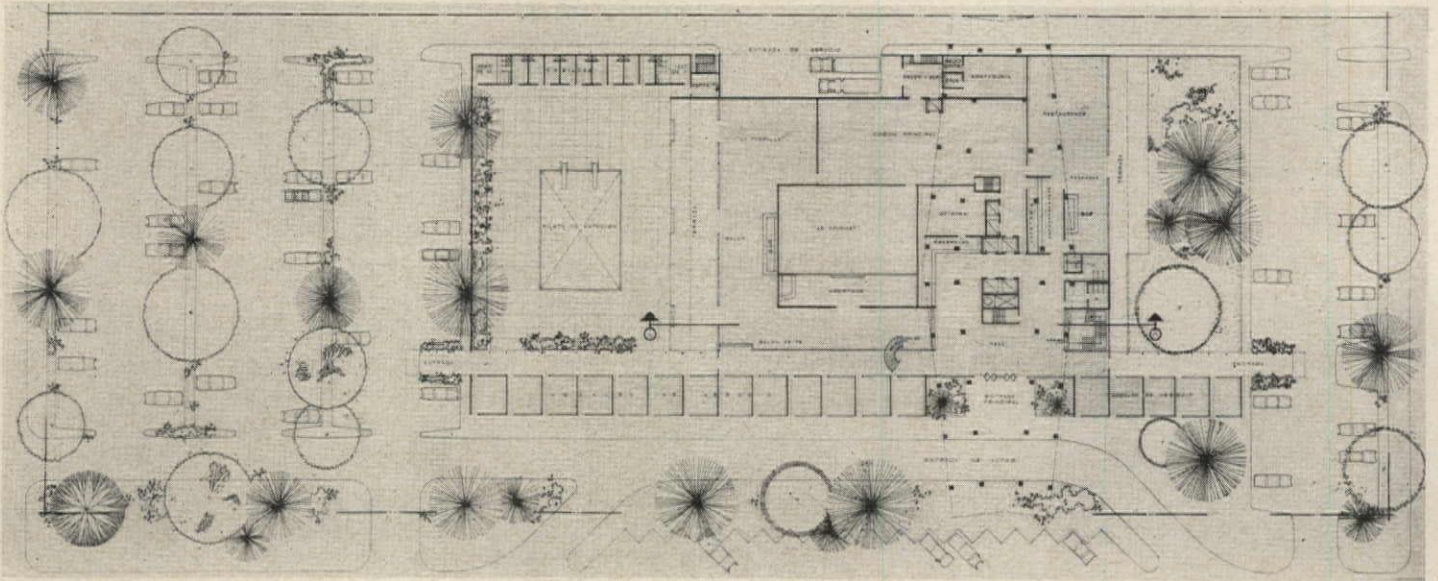
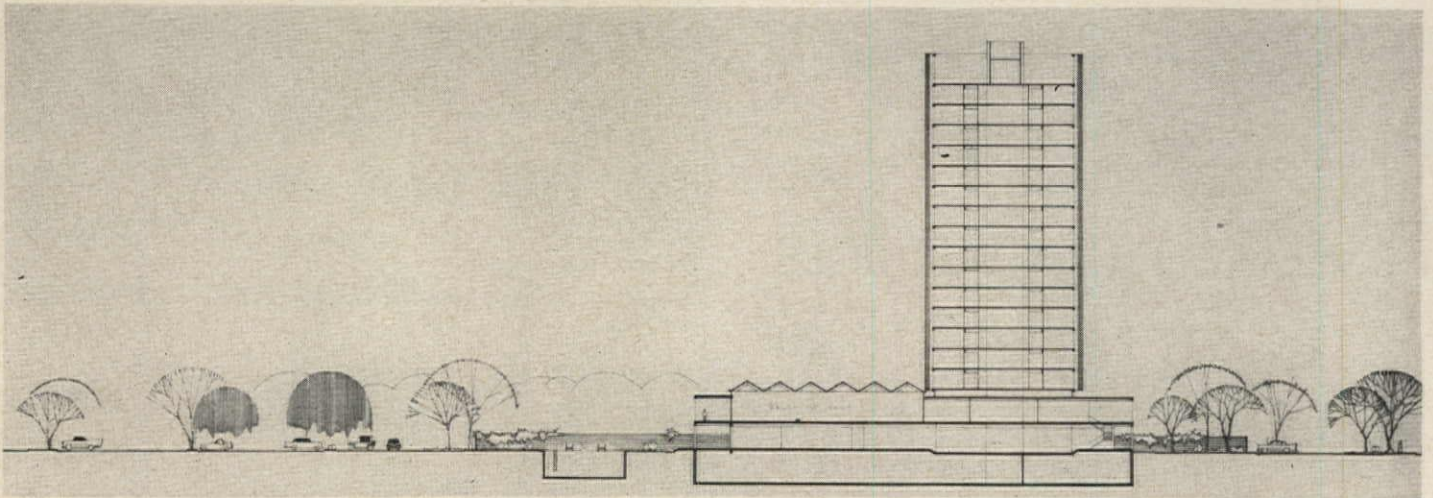
How to save hotel-motel construction costs, reduce service and maintenance expense, yet maintain comfort, suggest luxury and send the traveler on his way happy. Architect William B. Tabler knows how to save money in ways that don't show, one of the reasons he is currently engaged in the design of thirty-four hotels and motels costing an approximate total of \$247,165,000

The tower of this proposed sixteen-story reinforced concrete frame hotel is shaped like a double wedge to allow a central rather than a perimeter elevator and stair core. The typical small hotel of this size has its elevator and stair element at some point on the exterior wall, thus pre-empting valuable bedroom space while increasing the amount of expensive perimeter wall. Since a hotel does not require as many elevators as an office building of an equivalent number of floors (no morning, noon and evening peak loads in hotels as in offices), and since hotels cannot utilize non-perimeter space as office buildings do, a rectangular core within a rectangular plan is impractical as it takes up more space than a small hotel requires. The wedge-shape core requires less elevator and service space to fill it and is therefore more practical. Note in plan the placement of stairs at opposite ends of the double wedge. This permits it to taper down to a width of 5 ft, which prevents each hall beyond from becoming excessively wide.

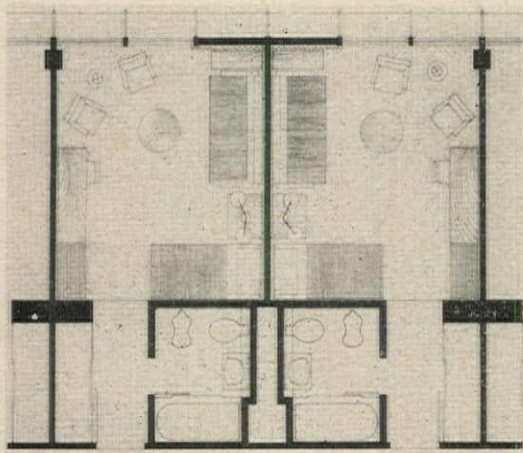
Projecting concrete fins will reduce the air conditioning loads on the tower. The hotel will provide 608 guest rooms, a swimming pool, laundry, ballroom, meeting rooms, a coffee shop, cocktail lounge, restaurant and bar and shops. Estimated cost: \$8,000,000.

ARCHITECT: *William B. Tabler*
David P. Dann, Associate in Charge
LOCATION: *Buenos Aires, Argentina*





Spaces which require uninterrupted column-free floor area such as the ballroom and dining rooms are covered by wide spans and grouped in a low element separate from the tower. The plan is organized to position the tower and its columns conveniently over the entrance drive, lobby, and service spaces

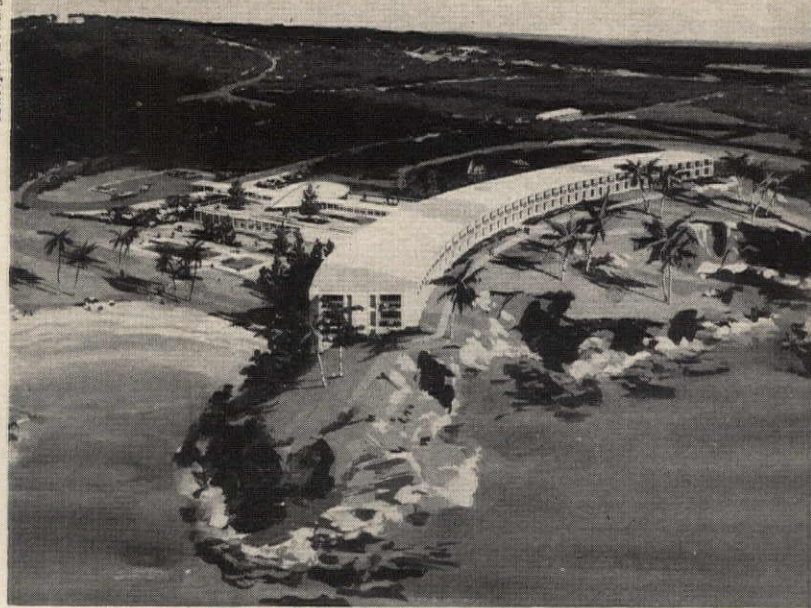


Typical double bedrooms. Second bed doubles as sofa providing a small but workable living area

2. The Carlton Beach

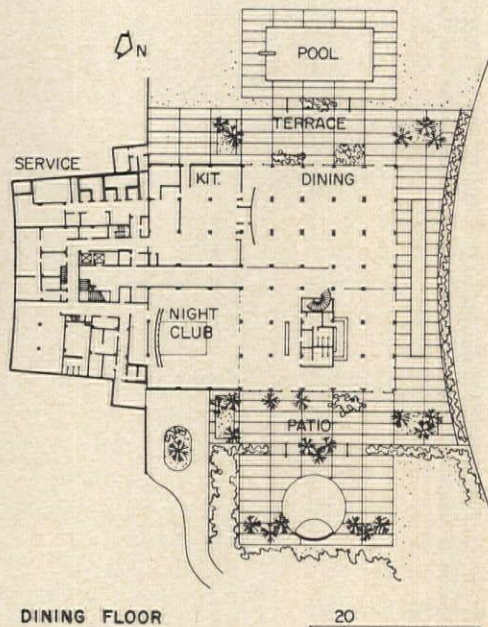
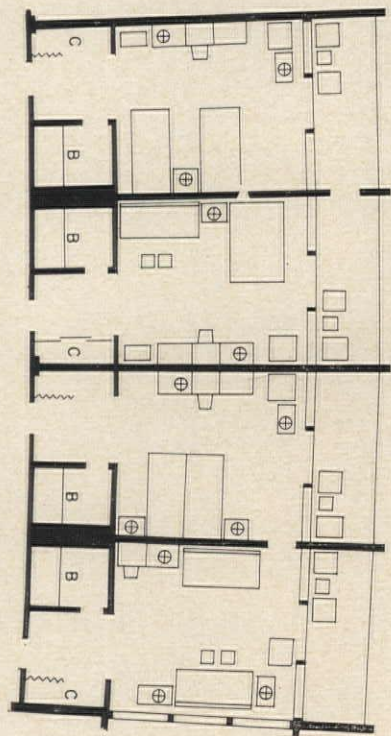
In this nearly finished \$3,000,000 resort hotel, construction and maintenance costs have been pared by a reduction in public and service spaces achieved by designing these areas for maximum flexibility and locating them so that they may be served by a single kitchen. The night club can be subdivided into meeting rooms by means of a new type of moveable partition with a continuous pneumatic gasket at the top of each panel which permits the partition to be located against any firm ceiling. No floor or ceiling tracks are required. The pneumatic rubber gasket is inflated by an applied air cartridge and makes a tight ceiling connection. When a different space arrangement is required, air is released from the gaskets and the panels can be easily rearranged or stored.

The guest room wing hugging the coral reef has been designed as a long low element with a double-loaded corridor two stories high on one side and three on the other. Guests walk down or up one flight only. This design provides the maximum income-producing bedroom space available to a scheme which saves money by eliminating elevators. Since this is a resort rather than a do-it-yourself motel, bellboys will carry bags down the long corridor. The corridor carpet has been specially woven with a line pattern which follows the curve as it disappears ahead.



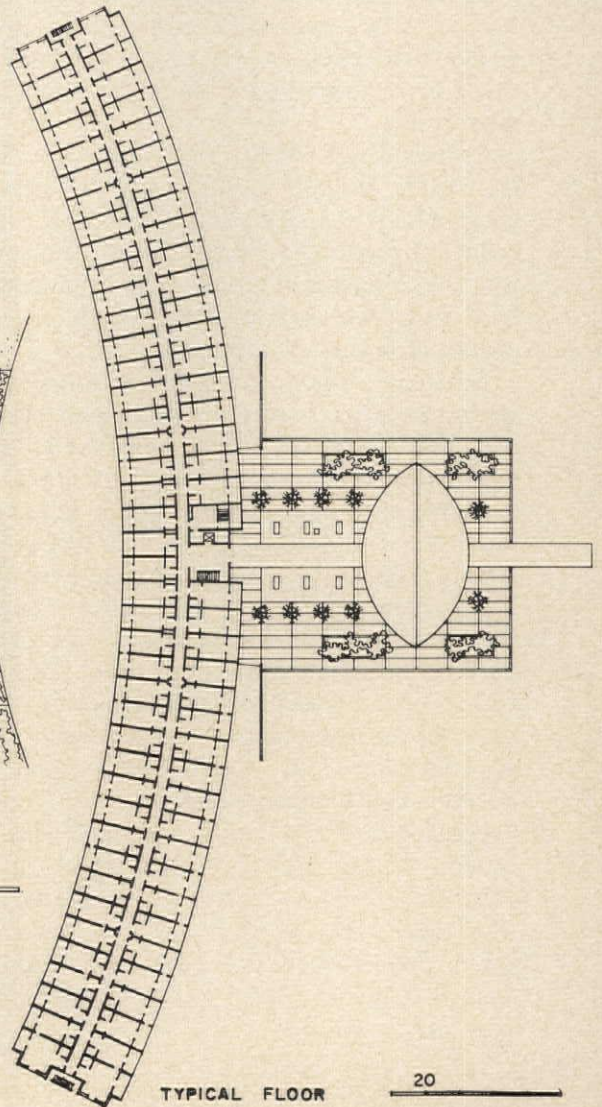
Owners and architect point out that in addition to saving elevator costs, the long low scheme adapts to the site, and brings guests physically closer to the marina on one side of the spit of land and the swimming bay on the other. It is in character with much of the local building which is low

ARCHITECT: *William B. Tabler.*
Raymond C. Giedraitis, Associate in Charge
 OPERATOR: *Hotel Corporation of America*
 LOCATION: *Southampton, Bermuda*
 STRUCTURAL ENGINEER: *Wayman C. Wing*
 MECHANICAL ENGINEERS: *Cosentini Associates*
 LANDSCAPE ARCHITECTS: *Zion & Breen*
 LIGHTING CONSULTANT: *William Richardson*
 CONTRACTOR: *Aberthaw Construction Company*
 OWNER: *Southampton Hotel Company Limited*



DINING FLOOR

20



TYPICAL FLOOR

20

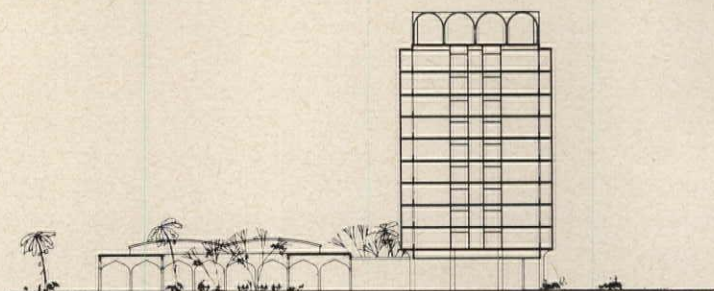
Basic room size permits four different room arrangements. At lobby level certain bedrooms can become meeting rooms for local business groups. Flexibility of this type helps pay for hotel operation during the off season

3. Karachi Intercontinental

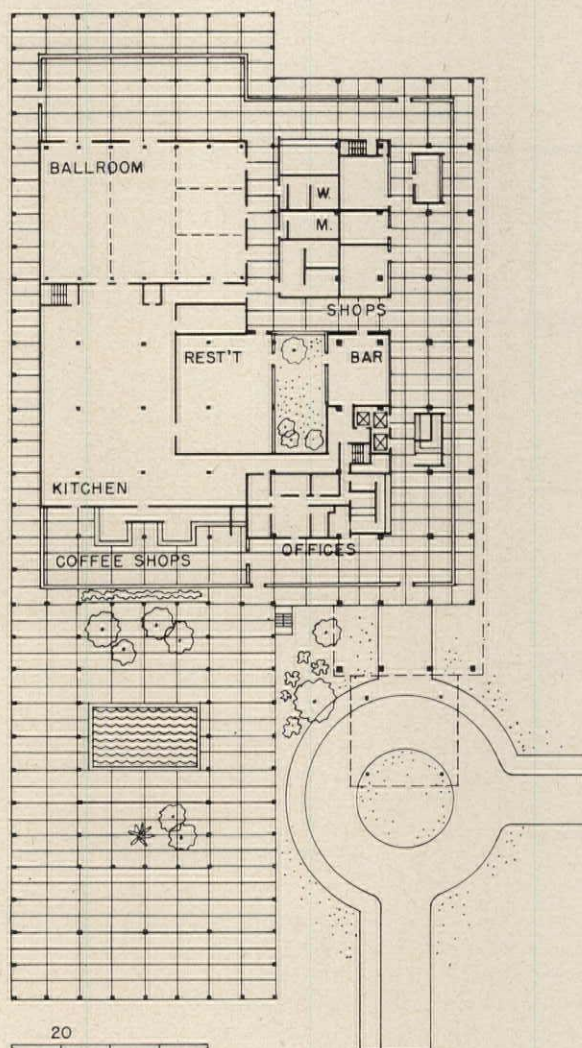
"We have been criticized for doing an American type hotel abroad," said architect Tabler in discussing this projected \$7,400,000 hotel for Pakistan. His critics contend that in a country where servants earning a pittance stand around all day to be available to perform one or two brief tasks, Tabler's efforts to cut payrolls by making fewer servants necessary are a bit needless. They ask why the hotel magnates he works for can't provide, in these overpopulated outposts at least, the same good old fashioned luxury well staffed by humans, that the finest local hotels may still provide. Tabler, who used to figure one employe per room in American hotels and who has been forced to continue to refigure that proportion downwards, because of ever rising wages, asserts that eventually in countries like Pakistan wages will reach a level which will make the hotels there as anxious to cut the payroll as they are anywhere else.

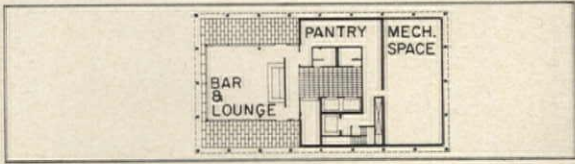
In his design for Karachi, therefore, Tabler keeps the public areas to a minimum and provides a ballroom which can be divided into small private dining rooms or meeting rooms, or easily shut down during the slow season. The plan is organized to permit ballroom, restaurant, coffee shop and bar to be served from one big kitchen.

Karachi Intercontinental will have an economical structure of a type not yet permitted by the ACI code, but allowed to be constructed abroad. The eleven-story reinforced concrete frame tower will use long narrow columns 5 in. or 6 in. wide, rather than the familiar 8 in. or 10 in. wide round or roughly square columns now required by the code. These narrow columns act as wall partitions (see thickened walls on room plan on opposite page), and fit into interior planning better than square or round ones. Used as partitions and room dividers they are an integral part of the design and cut costs of partition and wall construction. Spans are shorter, making floor slabs thinner. The long narrow vertical spandrel column combined with the horizontal line of the thin floor slab creates a thin refined exterior frame. As shown in the rendering opposite, the frame will be filled with a pre-cast concrete screen which acts as a sunshade reducing the air conditioning load, and protects the window glass from sand storms.

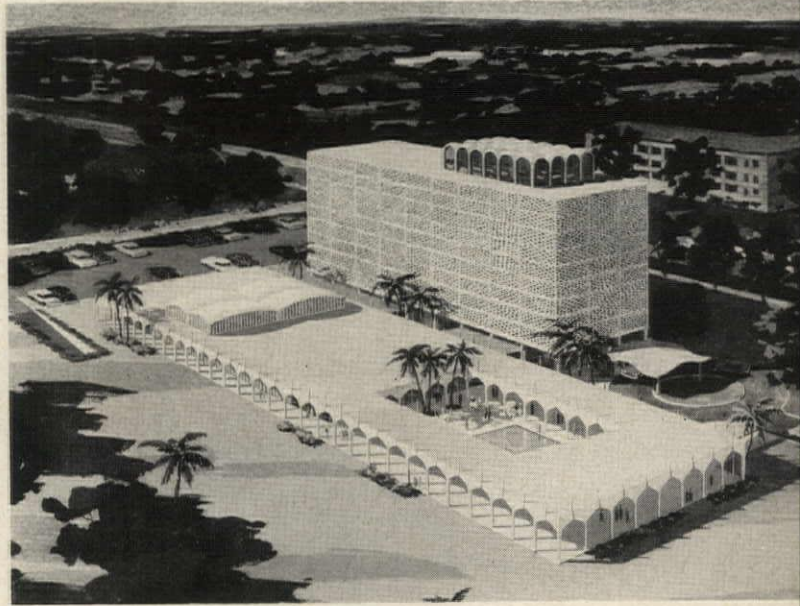
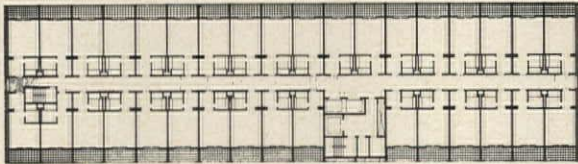


The swimming pool is surrounded by a terrace and colonnade to protect swimmers and loungers from the hot summer sun

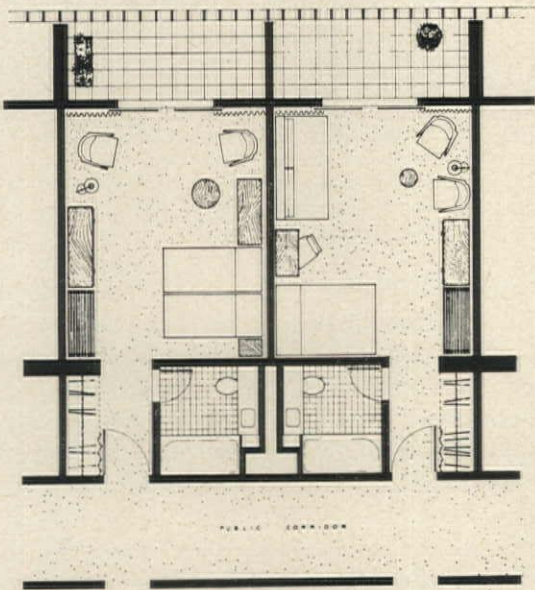




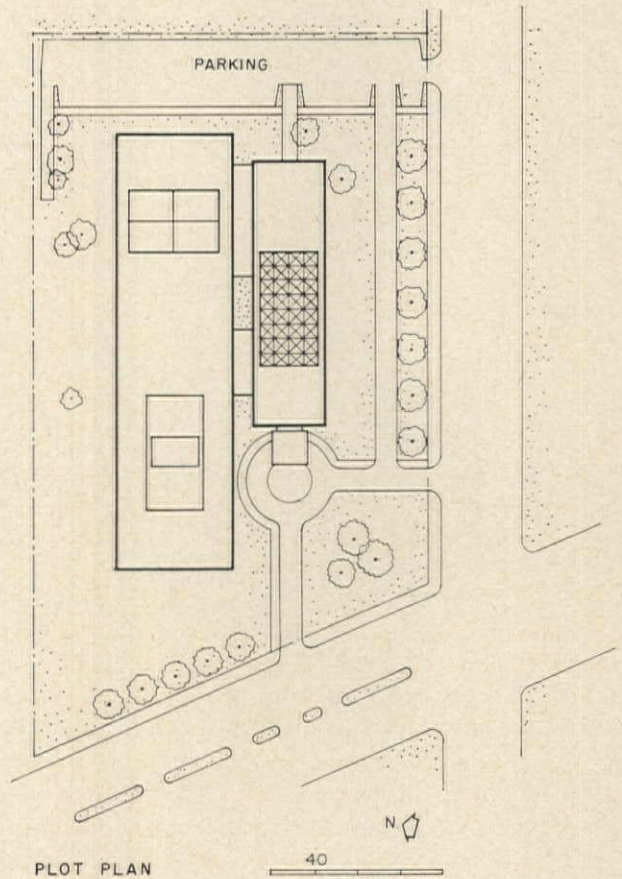
Rooftop cocktail lounge seats eighty people, affords a view



ARCHITECT: *William B. Tabler, E. R. Branning
and J. B. Robinson, Associates in Charge*
OWNER: *Pakistan Services*
LOCATION: *Karachi, Pakistan*
STRUCTURAL ENGINEER: *Wayman C. Wing*
MECHANICAL ENGINEERS: *Jaros, Baum and Bolles*



Room module accepts conventional and studio type furniture arrangements. Floors will be of terrazzo with throw rugs. Short thick walls placed in one direction on balcony and in the opposite direction between paired closets and bedrooms serve structurally as columns, reduce spans and double as partitions, an economical system

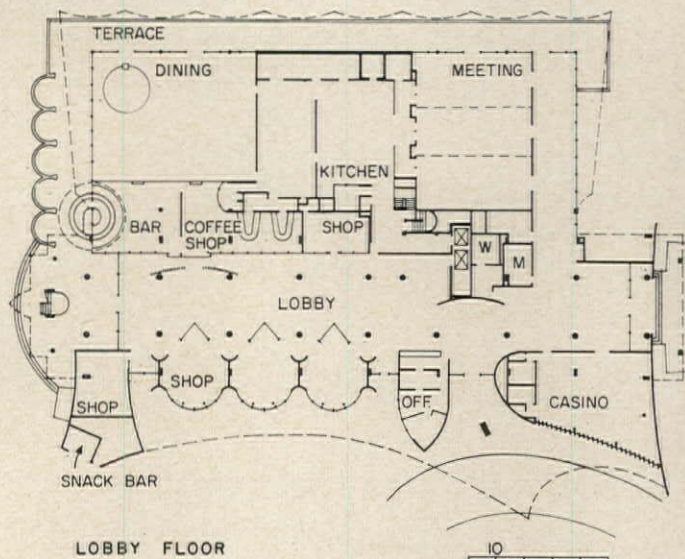


PLOT PLAN

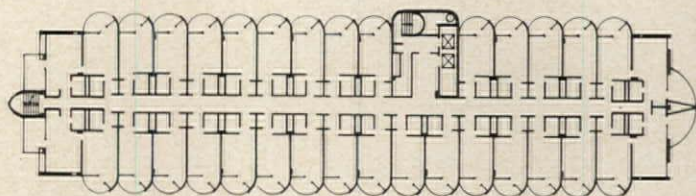
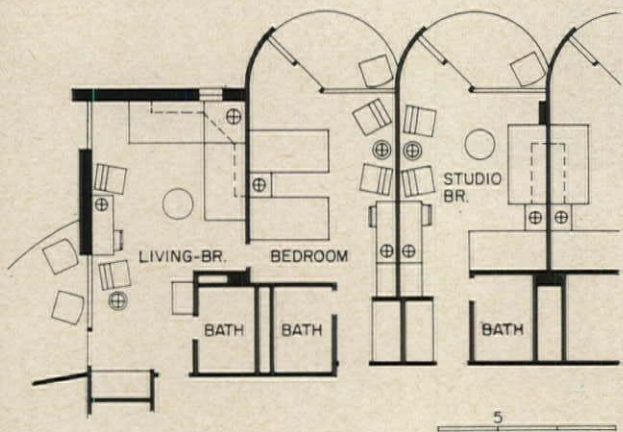


Manuel A. Ramirez

Planned for Hidden Economy



LOBBY FLOOR



TYPICAL FLOOR

4. El Ponce Intercontinental Hotel

ARCHITECT: William B. Tabler, J. C. Mayer and J. B. Robinson, Associates in Charge

ASSOCIATE ARCHITECT: Henry J. Stojowski

OWNER: Ponce Hotel Corporation

LOCATION: Ponce, Puerto Rico

STRUCTURAL ENGINEERS: Seelye Stevenson Value & Knecht

CONSULTING STRUCTURAL ENGINEER: Paul Weidlinger

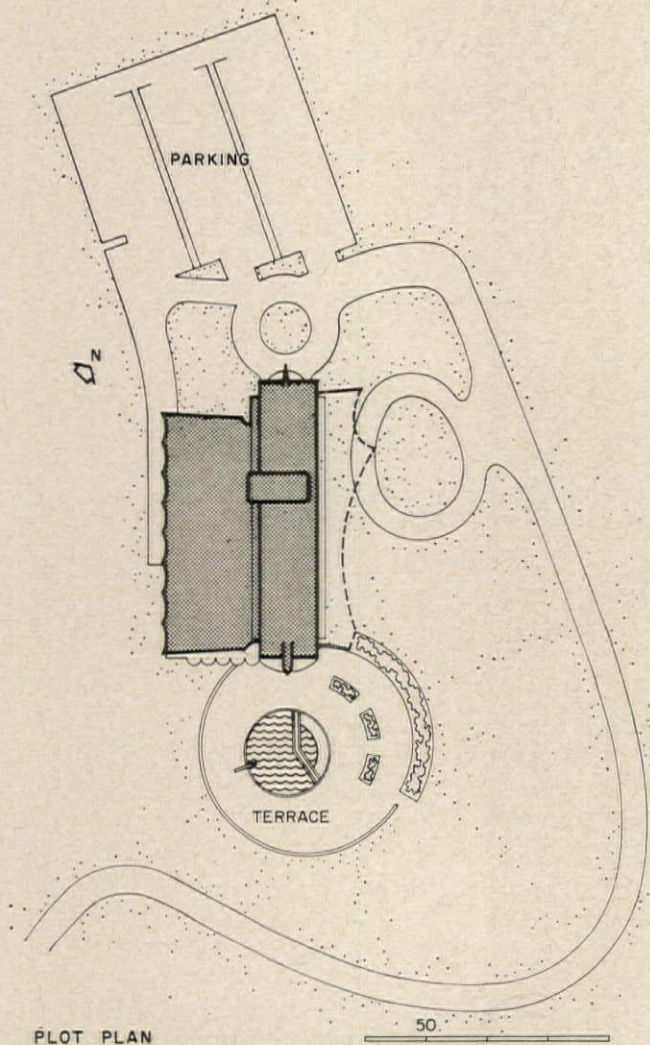
MECHANICAL ENGINEERS: Jaros, Baum and Bolles

LANDSCAPE ARCHITECT: Allen Edwards

CONTRACTOR: Metropolitan Builders

According to Tabler, this new \$3,500,000 resort hotel is currently breaking even at 40% occupancy when usually at least 70% occupancy is considered essential for a hotel to hold its own. The casino on the lobby floor helps, he admits; but so does the maintenance-reducing design of the compact, low public and service element beyond the lobby.

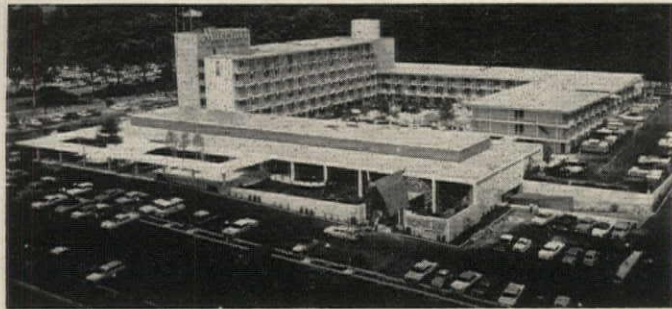
Every hotel man knows that bedrooms are the greatest income producers; the greater the proportion of bedroom area to public and service area, the more economical the hotel. To obtain as many bedrooms as possible at Ponce, their size was held to an absolute minimum as the bedroom and studio bedroom plans show. A more generous suite is achieved by combining the last two bedrooms on either end of both sides of the corridor as shown. Circular balconies curved toward the view of the Caribbean make the spaces seem larger to their occupants. The totem-like element on the south face of the tower is a special stair giving access to the pool.



PLOT PLAN

5. Marriott Motor Hotel

Robert C. Lautman



ARCHITECT: William B. Tabler.
 J. B. Robinson, Associate in Charge
 OWNER: Monument Properties Inc.
 LOCATION: Bala Cynwyd, Pa.
 STRUCTURAL ENGINEER: Wyman C. Wing
 MECHANICAL ENGINEERS: Cosentini Associates
 LANDSCAPE ARCHITECT: Frederick B. Stressau
 CONTRACTOR: Irwin & Leighton Inc.

The client wanted this \$5,000,000 motor hotel to have 60% of the bedrooms on a two-story walkup and favored parking which adjoins bedrooms with direct access to and from cars. Tabler believes that a bedroom tower combined with his customary low service element would have crowded the land less, been a better solution. The traveler, who looks out over his car unless he pays a higher price for a room on the interior court, can enjoy the terrace and pool, a serene oasis protected from the rush of highway traffic by the hotel's four enclosing wings. He has three different-priced restaurants to choose from and four kinds of guest rooms, all with oversize beds. There are studio rooms with one double bed and studio couch; twin bedrooms; singles with one double bed; and the studio executive room with a studio bed and a large 7-ft desk which can double as a bar with a small built-in refrigerator. (See second photo from the top right.) As shown in photo at bottom right, in all bathrooms the lavatory and toilet are ingeniously arranged to double as dressing table and seat, an amenity which takes no additional space.

Louis Reens



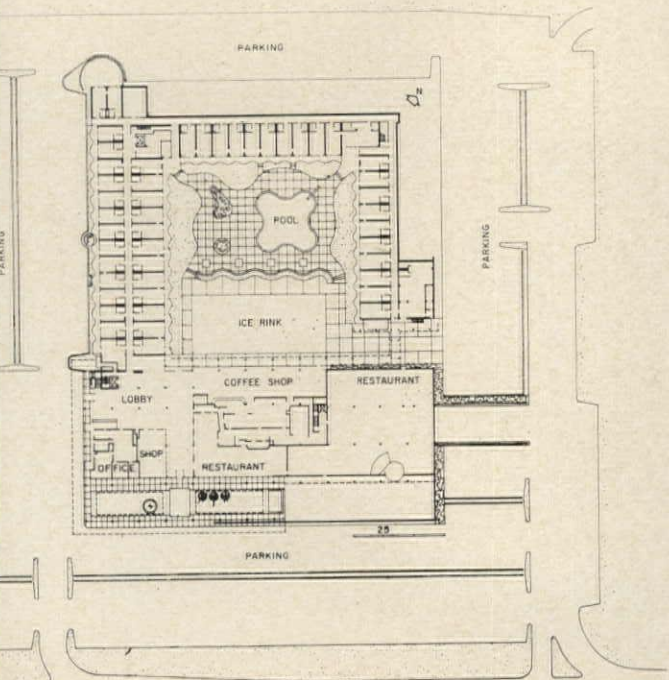
Louis Reens

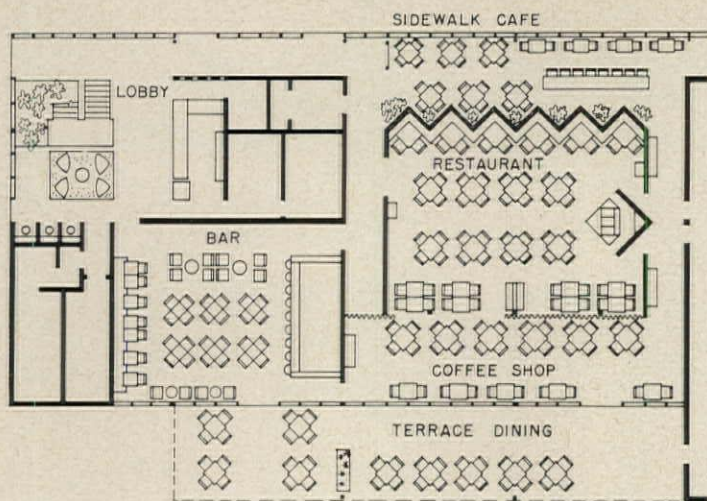


Robert C. Lautman



Robert C. Lautman





Flexible, Expandable Motor Hotel on a Budget

ASSOCIATED ARCHITECTS AND ENGINEERS: *Curtis and Davis and Utility Engineers, Inc.*

NAME: *Charterhouse Motor Hotel*

OWNER: *Lynn Motor Hotel Trust*

LESSEE: *Hotel Corporation of America*

LOCATION: *Lynn, Mass.*

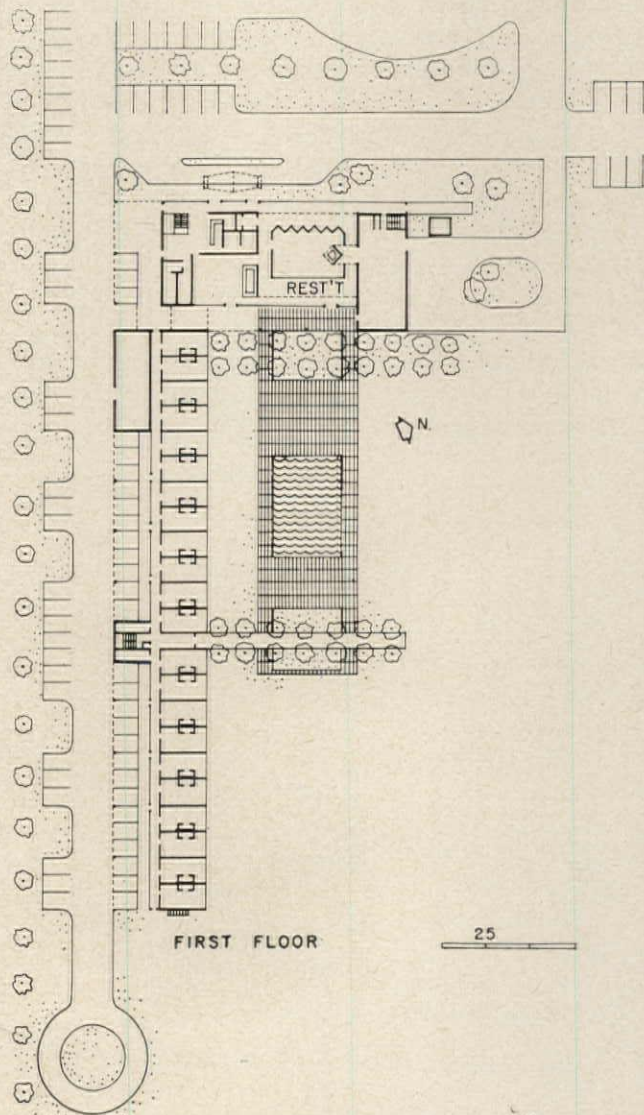
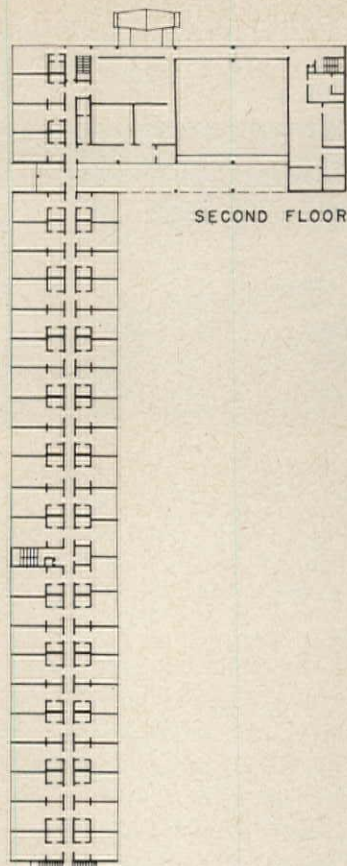
INTERIOR DESIGN: *Public Spaces by Curtis and Davis, Guest Rooms by HCA (Roland Jutras, Designer)*

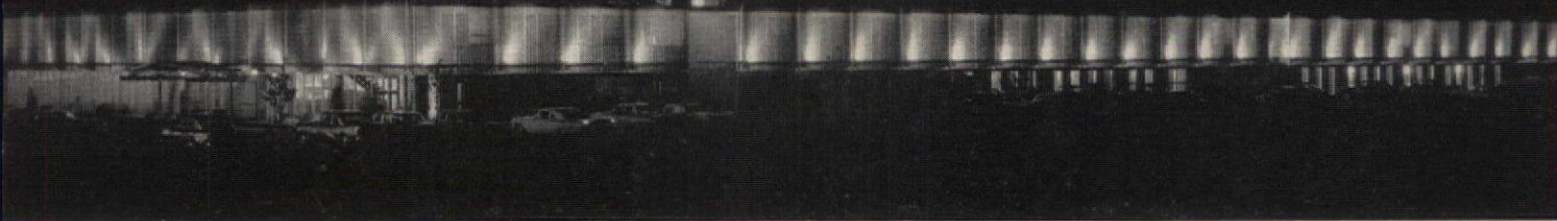
GENERAL CONTRACTORS: *Duggan and Hiscock*

The cost of this motor hotel was kept to \$15 per sq ft. A simple steel frame with wood joists and wood stud load-bearing partitions was used. Materials throughout are simple and inexpensive, the welcoming atmosphere is achieved through imaginative use of color, texture and light. A hotel man's rule of thumb is to charge a dollar in room rent for every thousand dollars of construction cost per room. The cost per room was \$8,895, which should permit management to price their rooms within reach of the average traveler. The building, opened in December 1960, has so far enjoyed a high occupancy rate. Total cost of the 70-room unit, including landscaping, parking, drives and pool, but excluding movable furniture and kitchen equipment, was \$622,661.36.

The most interesting feature of this motor hotel is the partially elevated guest room wing with parking under cover on the south side. See first floor plan at right. Most of the parked cars tuck under the overhanging second floor, are close to the guest rooms, but do not mar the view of the harbor beyond. The master plan for the site provides for an eventual 200-room development including a health club, additional dining space and some retail area, which will transform the L shape into a U. The existing kitchen has been designed to accommodate the additional dining space planned.

The Hotel Corporation of America requires that dining space be made as flexible as possible in all the hotels and motels which it operates. At this motor hotel the dining area is divided into three separate eating spaces, a cafe and a bar, to cater to diverse tastes and incomes at different times of the day. See plan above. Kitchen is adjacent on right.



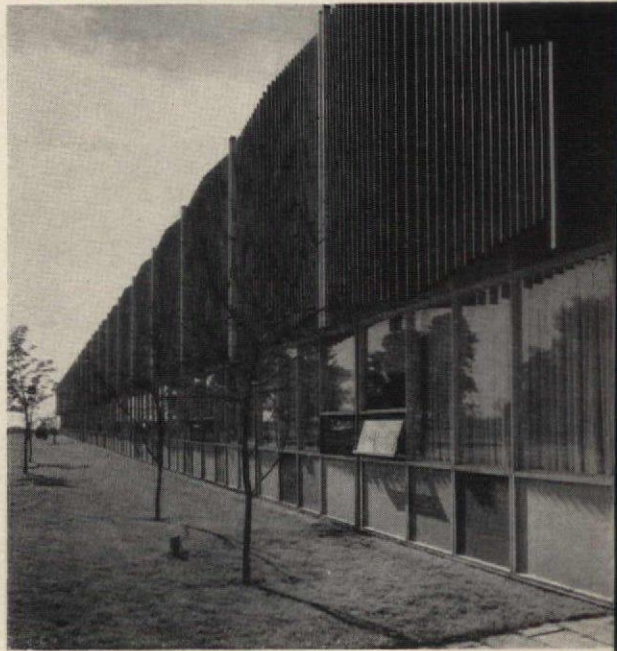


Effective use of light to attract motorists passing at night

Photographs by Robert D. Harvey

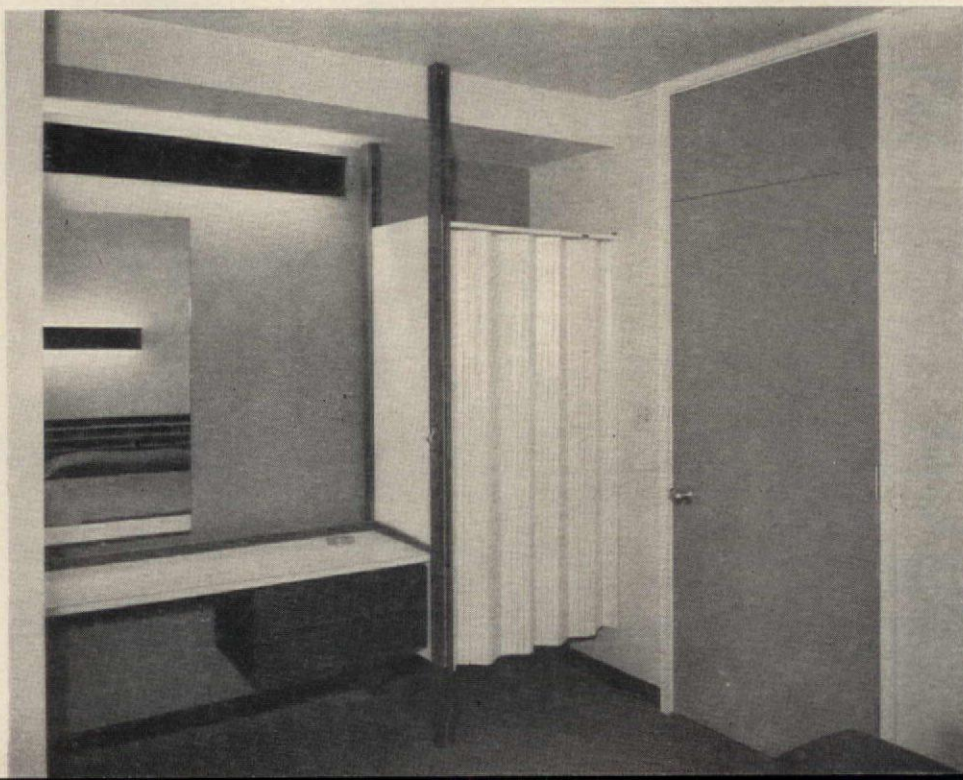


Main parking space at entrance is not overlooked by bedrooms



Wood grilles baffle sun, create privacy

Folding slatted door on guest room closet is inexpensive, neat



Adaptable Project for British West Indies

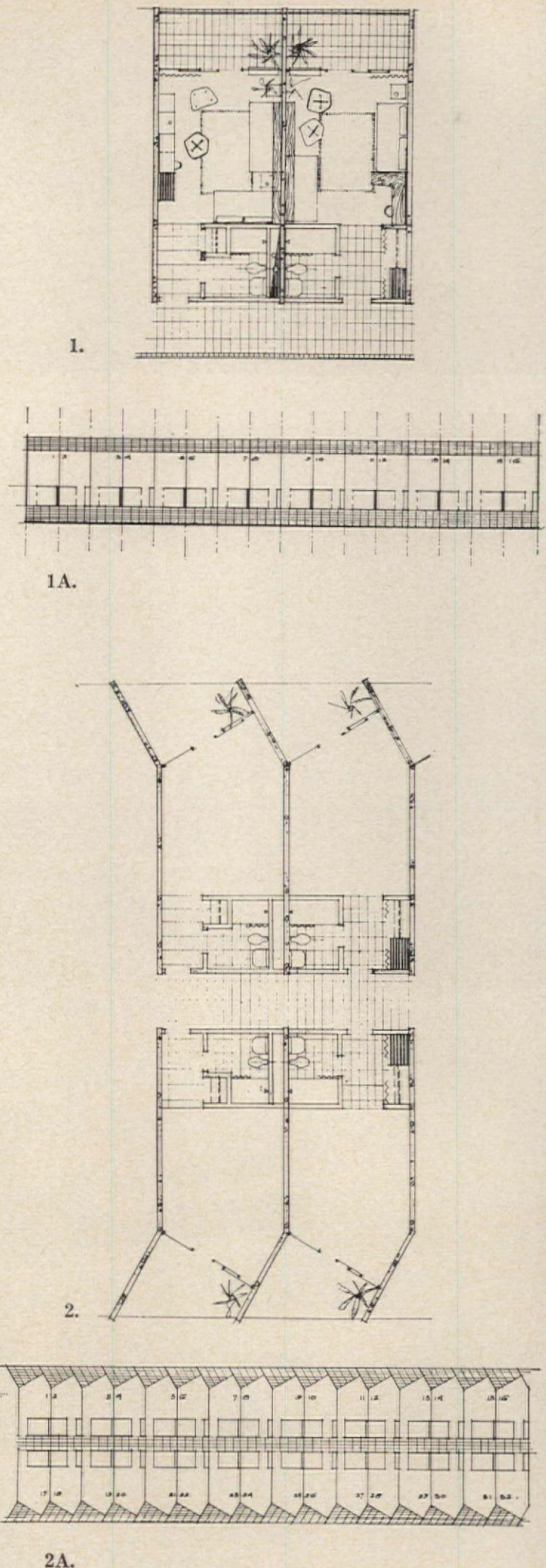
Curtis and Davis, architects of this scheme, state that this design is flexible enough to cope with most limitations imposed on it by site conditions or number of rooms required, both initially or in the future. They assert that this projected physical plant can compete on equal terms with hotel units costing a great deal more.

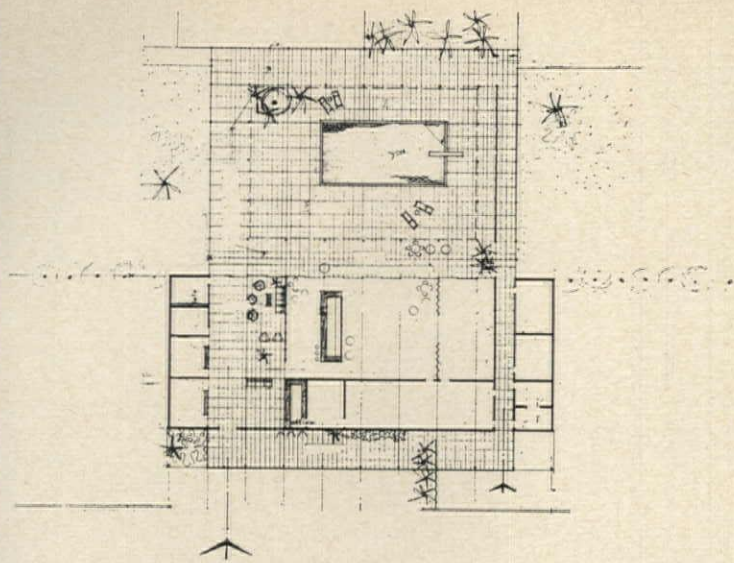
The plan is constructed around two basic modules as follows: 1. the two- or three-story module with four or six rooms arranged on the seaward side of an open corridor with balconies toward the sea, or an identical arrangement minus balconies; 2. the two- or three-story module with eight or ten rooms arranged on both sides of a central corridor running perpendicular to the sea, the rooms and balconies being angled toward the view.

These various modules are then combined together into room blocks as shown at 1A. and 2A.

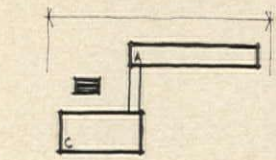
These room blocks are served by an expandable core shown in sketch 3. containing: bar, dining room, game room, kitchen, lobby, desk and office, shops, swimming pool and terraces, storage and toilets. This scheme illustrates a core for approximately 100 rooms. The core unit illustrated, together with the various room blocks, form the elements of a plan which can be arranged in many ways, depending on the site and number of rooms required. Sketch 4. shows five ways in which the elements may be arranged.

Finally sketch 5. shows the development of a plan for a 100-room unit either two or three stories high, illustrated in perspective on opposite page.

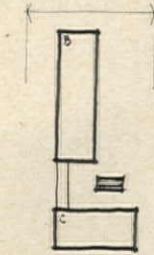




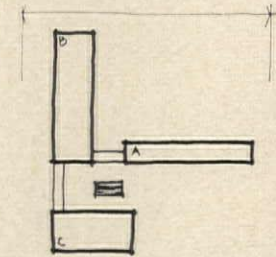
3.



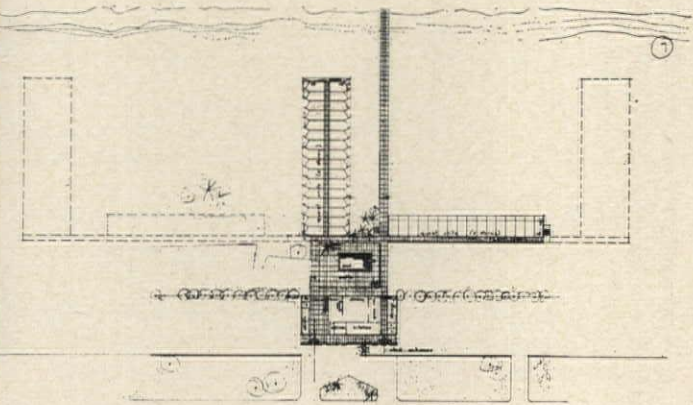
1 2 story 32 rooms
3 story 46 rooms
frontage 350 feet



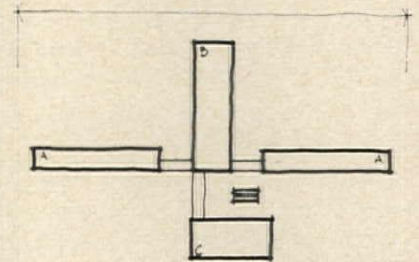
2 2 story 64 rooms
3 story 96 rooms
frontage 200 feet



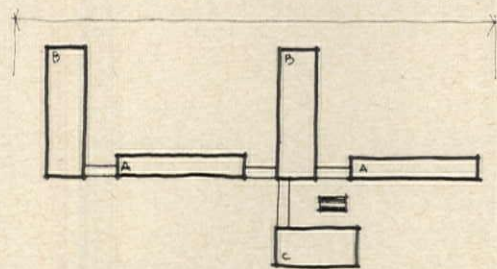
3 2 story 96 rooms
3 story 144 rooms
frontage 300 feet



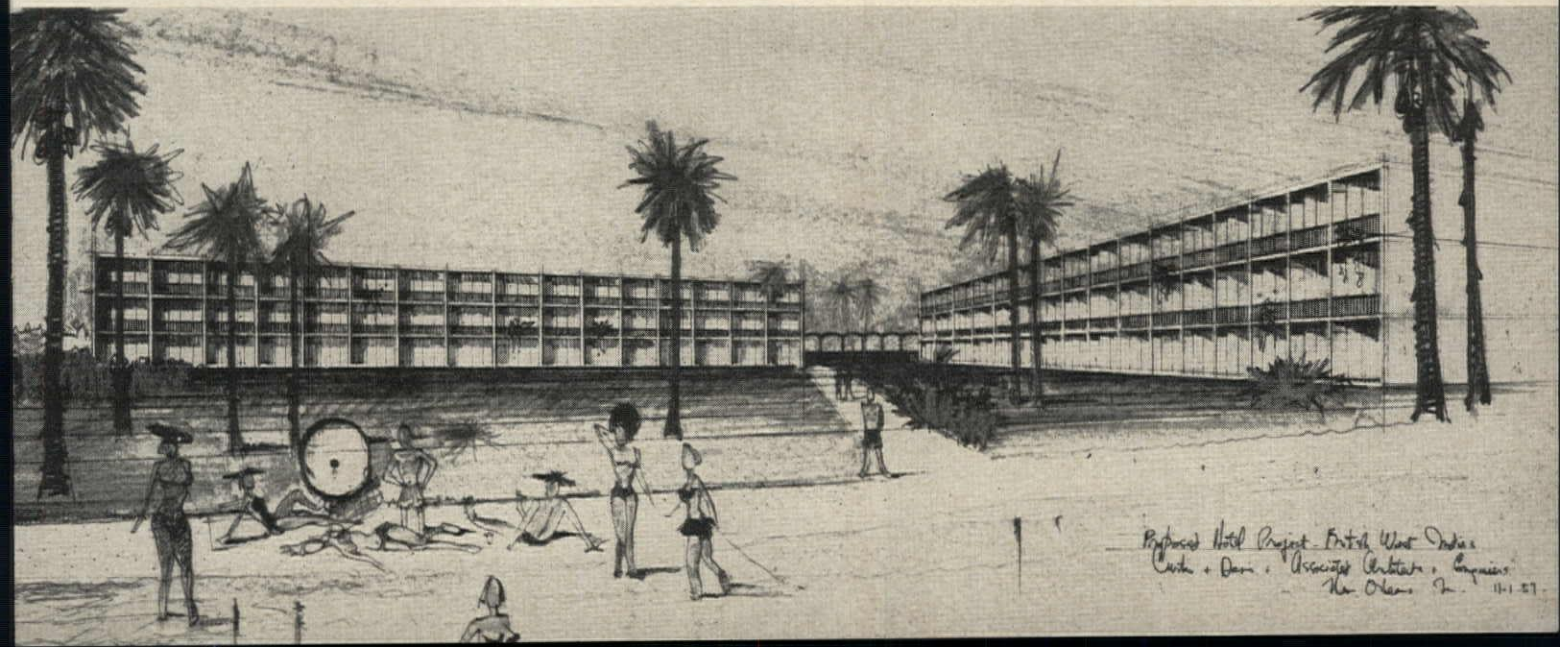
5.



4 2 story 120 rooms
3 story 192 rooms
frontage 610 feet



4. 5 2 story 102 rooms
3 story 204 rooms
frontage 750 feet



Proposed Hotel Project - East West India
Cuth + Dorn + Associates Architects + Engineers
New Orleans La. 11-1-57

Good Site Plan Makes Parking Convenient But Not Obtrusive

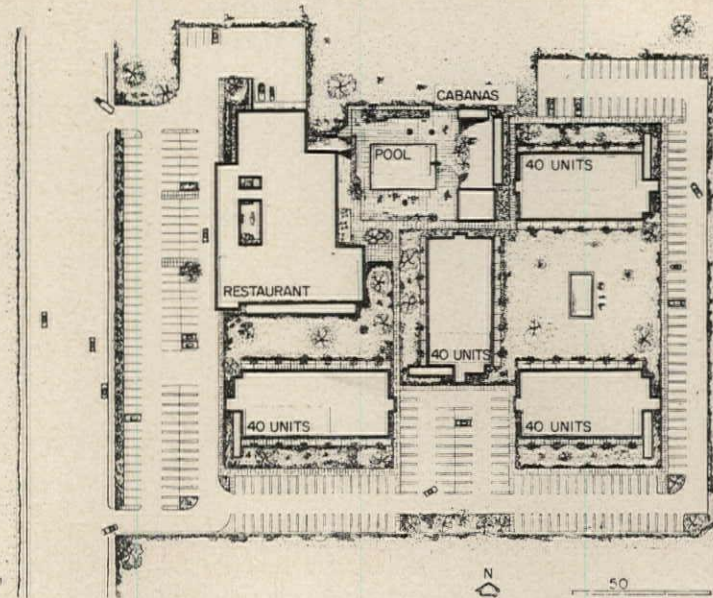
ARCHITECT: *Victor Gruen Associates*
NAME: *Charterhouse Motor Hotel*
LOCATION: *Anaheim, California*
OWNER: *Leo Freedman*
OPERATOR: *Hotel Corporation of America*

A first look at this ingenious plot plan reveals that parking is kept a minimum distance of approximately 50 ft from the bedrooms which face parking areas, and that the other half of the bedrooms in these double-loaded units face partially enclosed planted spaces. Only the blind ends of buildings are immediately adjacent to the parking. From these ends a baggage ramp designed for electric-powered baggage carts connects the second story guest room corridor to the parking lot. The first story corridor has direct access to parking in each unit. See photograph at bottom of opposite page.

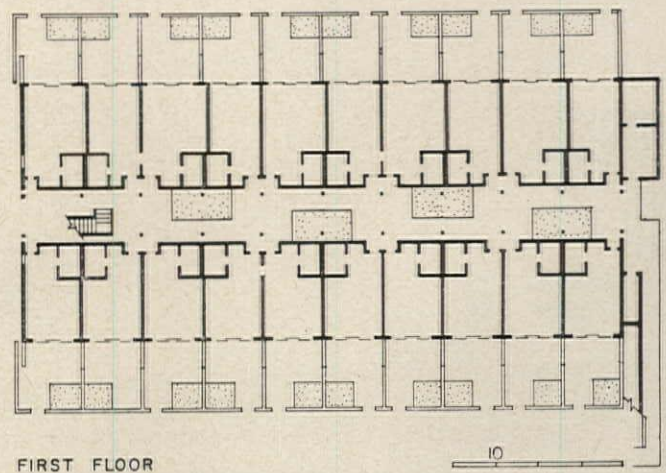
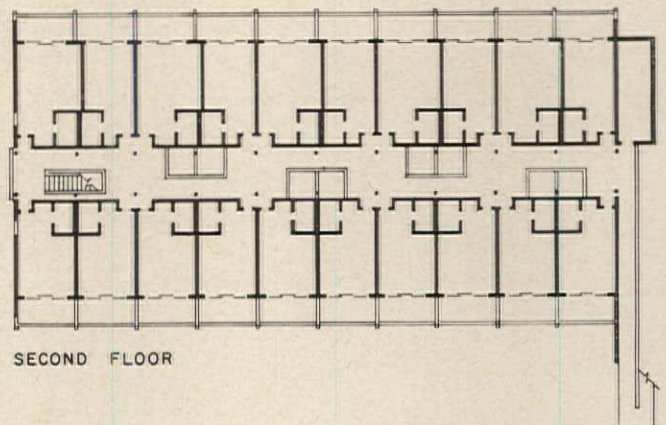
In the planning of this motor hotel, located in a citrus grove directly across the highway from Disneyland, a principle of strict separation of automobile traffic and pedestrian traffic was observed. Guests may drive to individual parking areas immediately adjacent to the two-story unit they are staying in, yet they may reach the main building on foot along pathways leading through partially enclosed spaces planted with orange trees. For the guest who prefers to ride, and for general utility uses also, electrically powered carts are provided.

Guest suites in each of the four dispersed two-story buildings are joined by a unique corridor down the center. Above the roof level, a curved, plastic-covered canopy extends the length of the building, slightly wider than the corridor itself. It is transparent at the top and open at the sides, in clerestory fashion. Natural light and air floods the upper corridor almost as if there were no roof at all. To permit the same light and air to penetrate the lower corridor a series of railed rectangular openings in the floor of the upper corridor were introduced, alternating on both sides of the extra wide hallway. The openings admit light to the lower corridor, and directly below each opening is a planting area of similar size where trees will reach toward the light above. See photograph on opposite page, center left. Thus each guest room entrance, both lower and upper is afforded the necessary protection from wet weather while retaining an outdoor atmosphere.

Buildings are wood frame with exterior surfaces of wood, plaster, tile and masonry.



Cars screened from view by skillful arrangement of buildings



Plans for 40-unit guest room wings. Baggage ramp appears at right. Rectangles in second floor corridor admit light from skylight to the rectangular planting areas in the first floor corridor. Each guest room on the first floor has its own enclosed court, and on the second floor its own balcony



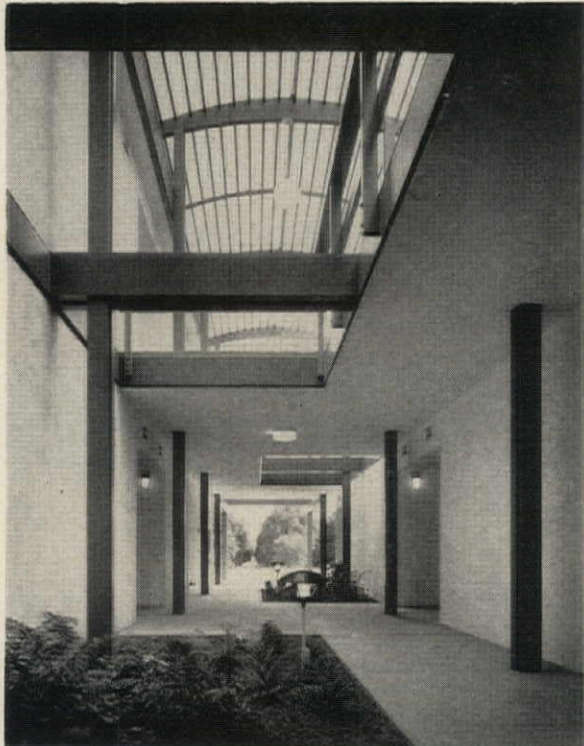
No traffic interrupts interconnecting paths



Guest rooms were designed by the HCA planning staff

Photographs by Gordon Sommers

Patios and balconies



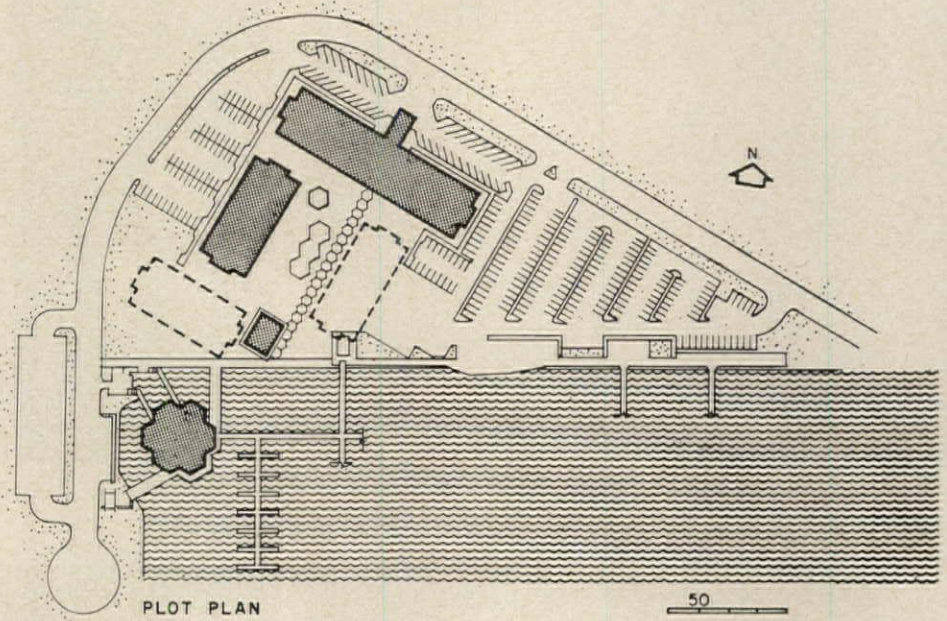
Plastic sky light illuminates and shelters corridors



Pool establishes resort character

Blind walls abut parking. Ramps link guest room corridors to parking and are used by electric baggage carts



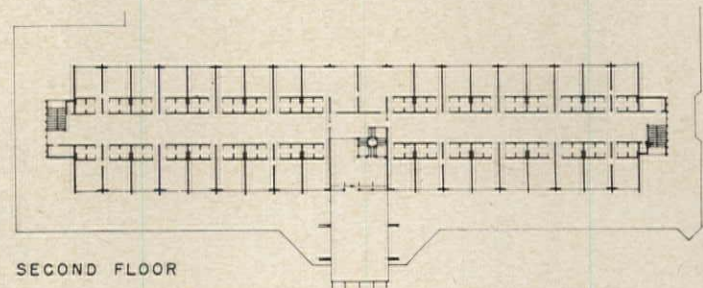


Plan includes two major hotel units and a restaurant surrounded by water. Dotted lines show future guest room units.

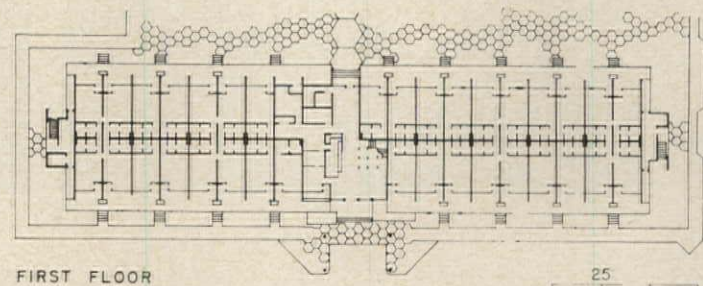
Well-Designed Hotel Conforms to a New Set of Restrictions in San Diego's Mission Bay Area

ARCHITECT: *Eugene Weston Jr.*
 DESIGNERS: *Frederick Liebhardt, Eugene Weston III*
 SUPERVISING ARCHITECT: *Vincent Bonini*
 OWNER: *Quivira Basin Enterprises Inc.*
 STRUCTURAL ENGINEERS: *John Kariotis & Associates*
 MECHANICAL & ELECTRICAL ENGINEERS: *C. D. Walz & Associates*
 LANDSCAPE ARCHITECTS: *Wimmer & Yamada*
 CONTRACTOR: *Trepte Construction Co.*

Islandia is the first hotel planned and built to conform with the official master plan for the development of the 6,400-acre Mission Bay recreation area which in ten years is expected to be the country's largest aquatic park. The city of San Diego commissioned the Community Facilities Planners (Smith, Williams and Eckbo) to prepare the plan. It recommends shake shingles for roofs instead of gravel, redwood siding, and four trim colors . . . white, charcoal, turquoise and persimmon. Signs can be no higher than 20 ft, building identification must be small. Buildings must be set back 40 ft from the nearest road and a 15-ft promenade must skirt the waterfront throughout the park area. The architects of Islandia have interpreted the spirit of these rules so well that this motor hotel may become the pace setter for the entire recreation area.

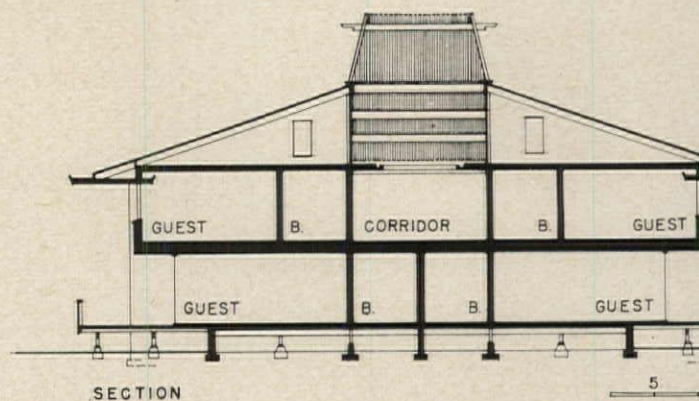


SECOND FLOOR



FIRST FLOOR

Guest rooms on first floor enter from front porches only. The second floor corridor is as wide as the two bathrooms below and has been treated as a court open to the sky through a series of slatted cupolas. With a narrower corridor each second floor guest room could have a balcony.



SECTION



Slatted cupolas open second floor corridors to the sky and have great style

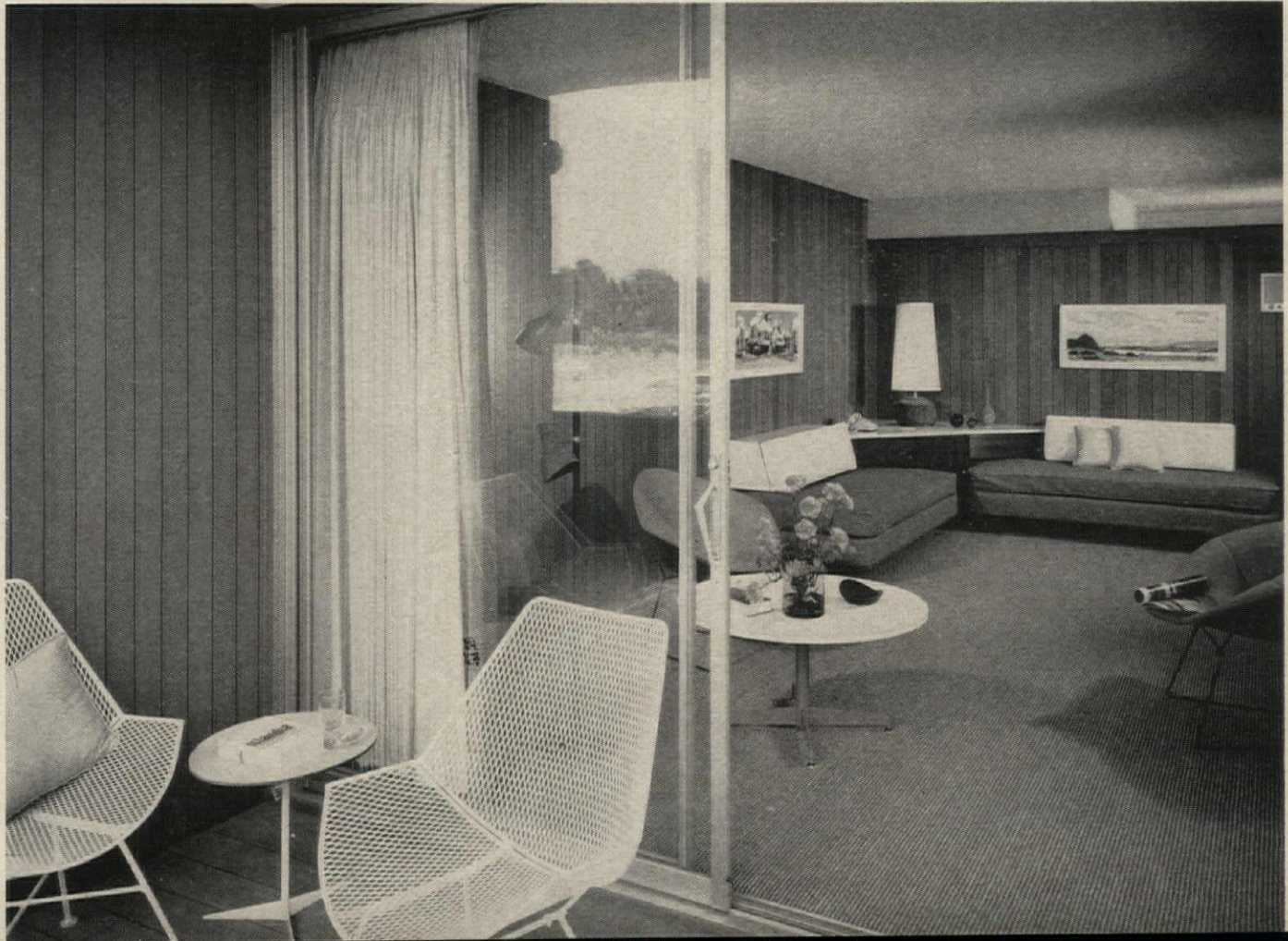


Restaurant is raised 15 ft above water on concrete piers

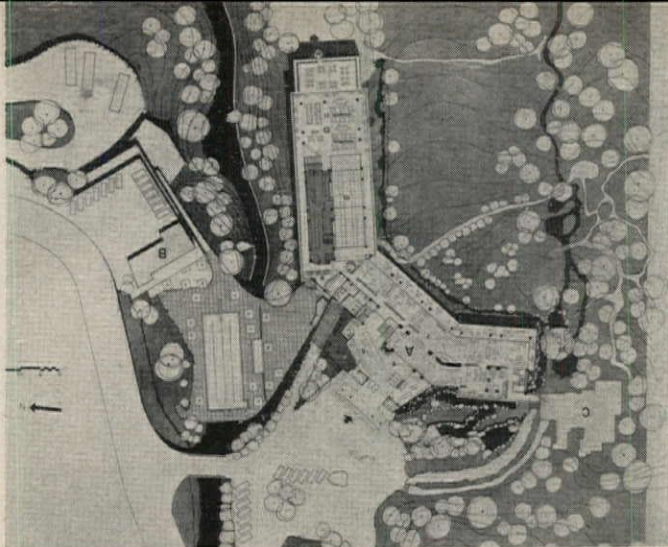


Units are raised 3 ft above the ground for view

First floor guest room as seen from porch



Photographs by Julius Schulman



Plot plan showing entrance drive over gorge, large and small swimming pool, amusement center to the northeast, and the hotel hugging the contours of the mountain

A Japanese Mountain Resort

ARCHITECT: *Junzo Yoshimura*
NAME: *Hotel Kowaki-en*
LOCATION: *Hakone, Japan*

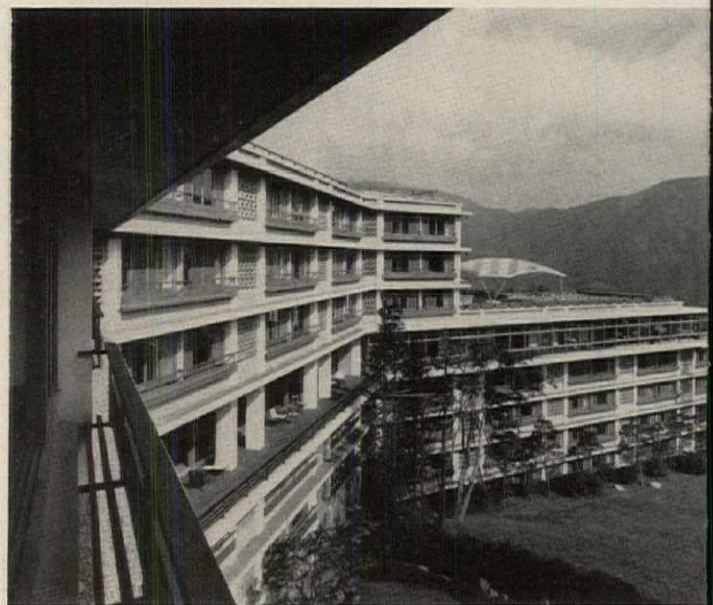
Yoshimura has described his hotel as follows: "Built on the edge of a deep gorge descending to a river, the plan and form of the hotel were developed so that the building would harmonize with the undulations of the site, and would permit the occupants to enjoy unobstructed views of the beautiful surroundings.

"The hotel is located in the heart of the beautiful National Park of Fuji-Hakone and contains 162 rooms. The structural frame is of lightweight concrete. Hot water is supplied to the bathrooms and pools from hot springs on the site. Heating is by natural steam. The climate does not require air conditioning.

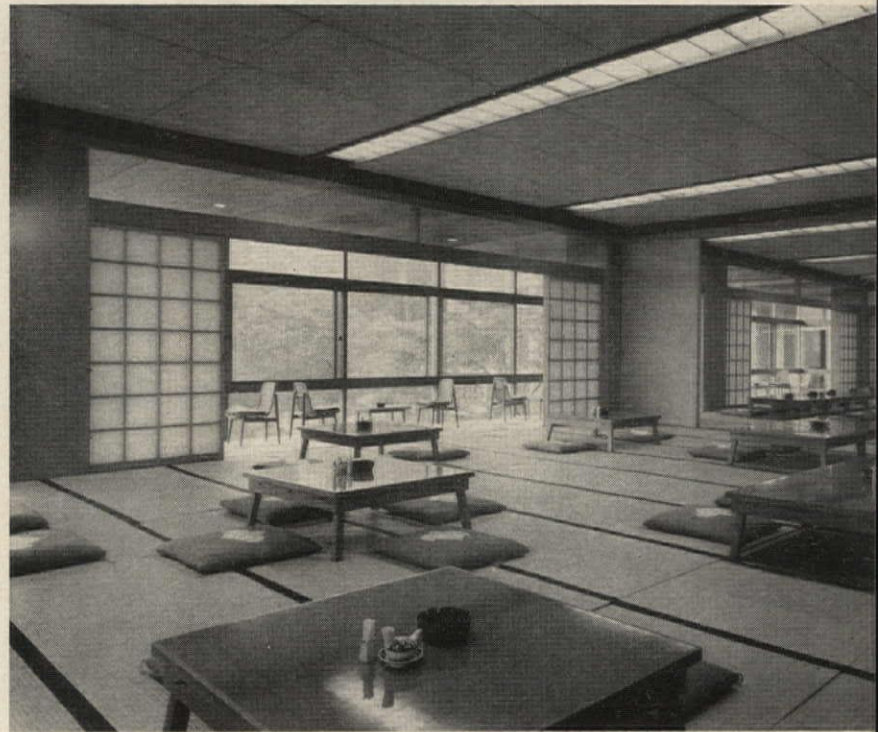
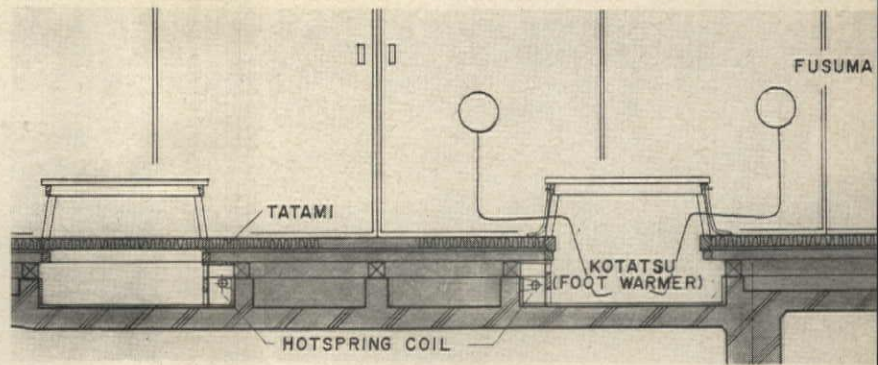
"The amusement center was placed apart from the quiet hotel rooms. The pools visible from the access road as it approaches the entrance bridge across the gorge were placed there as an inviting feature to passing motorists. The design objective was to create a spacious and serene atmosphere to which people might retreat from the clamor and hustle of city life."



View from mountain



Wide terrace is at lounge and dining room level



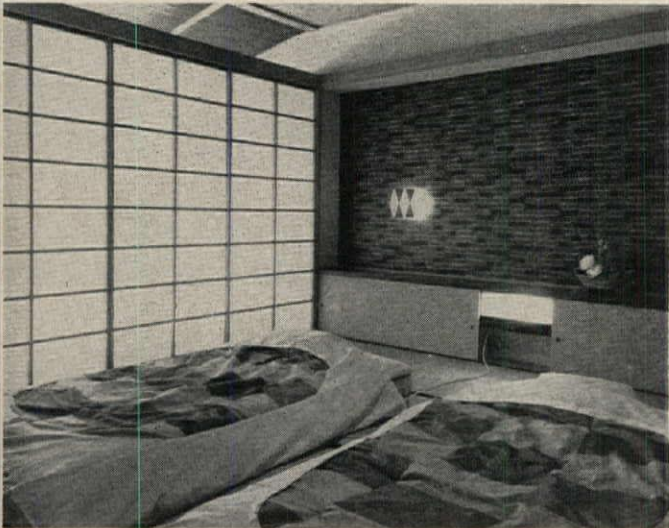
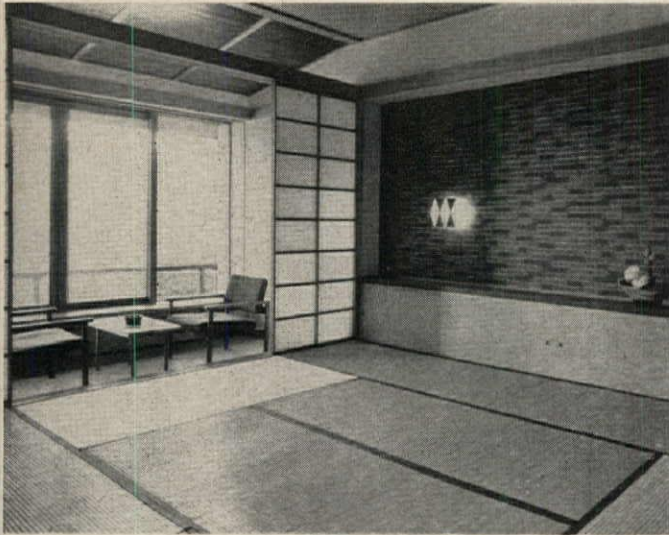
Japanese dining room. Note footwarming pits with removable tatami cover



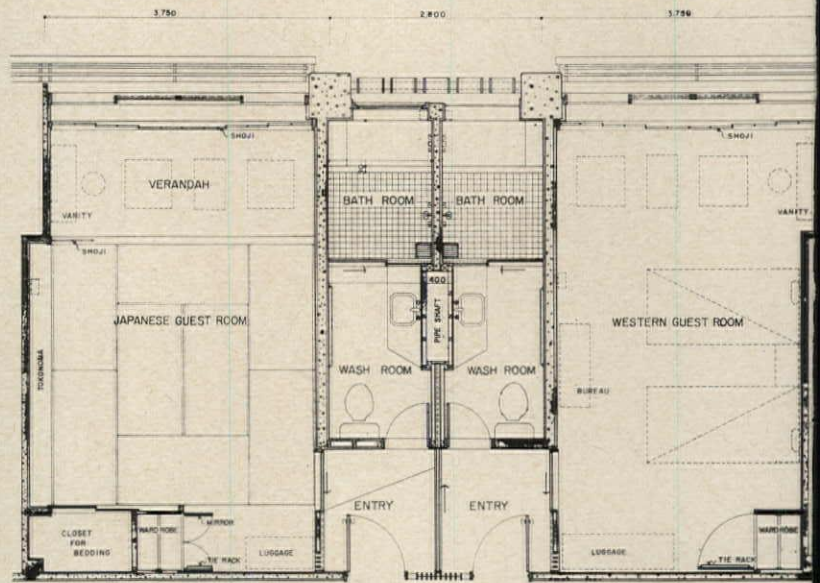
Western dining room. Japanese room beyond platform



Western guest room



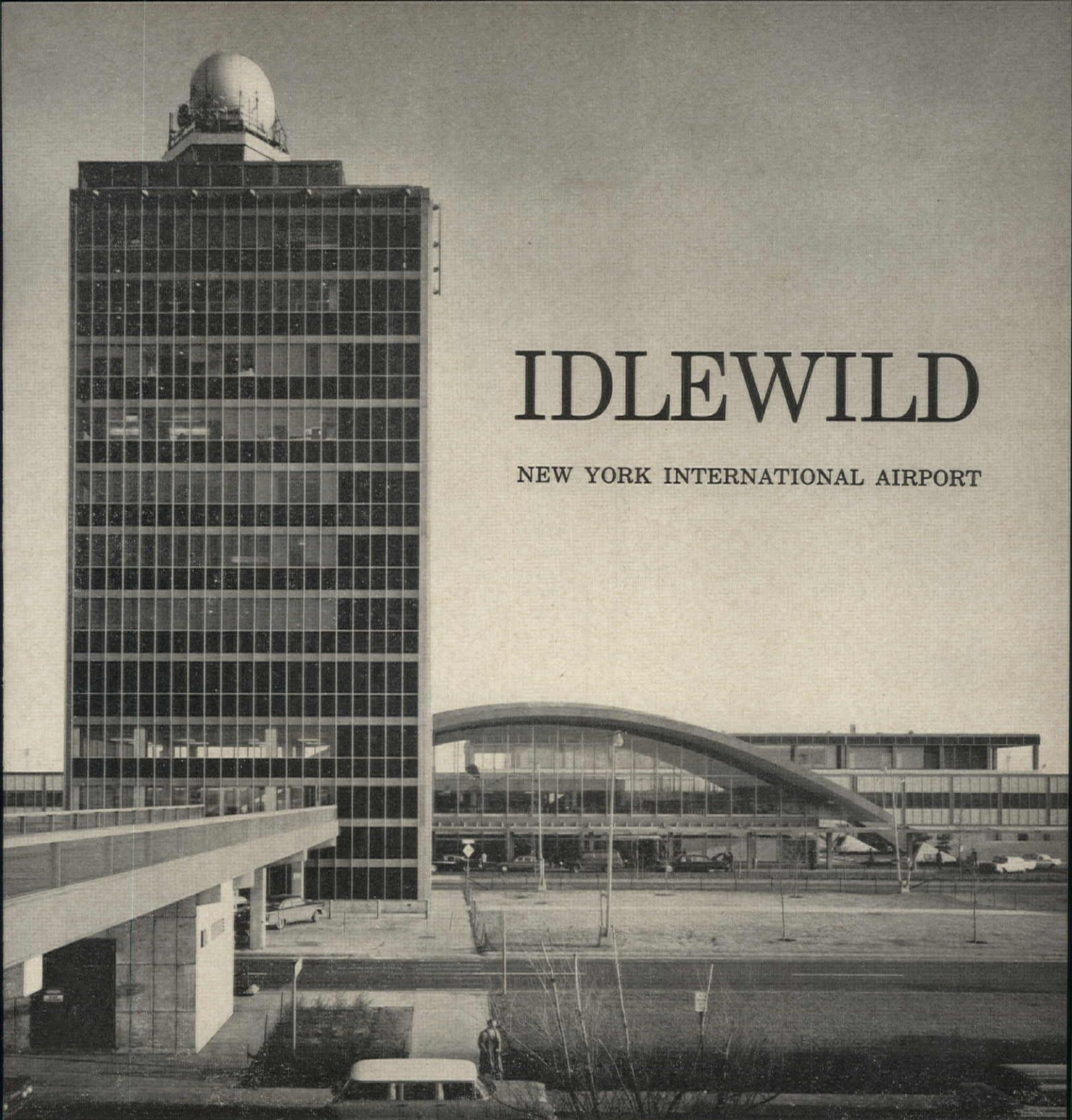
Japanese guest room. *Top*: bedding in closet, shoji open to balcony. *Above*: arranged for sleeping



Japanese and Western rooms alternate along corridors

Bathroom





IDLEWILD

NEW YORK INTERNATIONAL AIRPORT

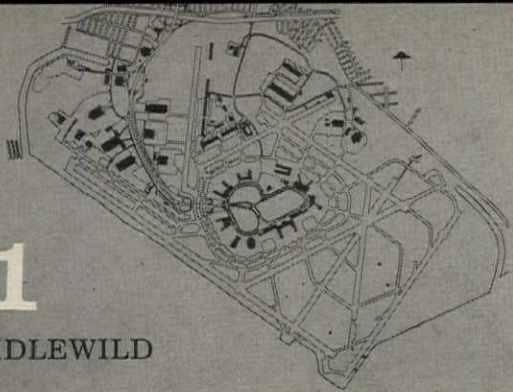
1. HOW IDLEWILD WAS PLANNED FOR THE JET AGE *page 152*
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HOW IDLEWILD WAS PLANNED FOR THE JET AGE

by Dudley Hunt Jr.

1

IDLEWILD



The story of Idlewild is essentially the story of how literally hundreds of architects, engineers, planners, and owners go about solving a planning problem that never holds still. Just when it would seem a solution is at hand, the problem changes. To make matters worse the problem of planning an Idlewild is composed of a fantastic number of elements, a great scale, involved functions, and complex relationships between the various parts.

What is Idlewild? It is, of course, the major metropolitan New York airport for overseas and long-haul domestic travel. It is master planning on a grand scale. It is an encyclopedia of engineering technology. It is a lexicon of contemporary architecture. Idlewild has a robust vitality. One can easily be caught up in the feel of it; the activity, the big jets, the flags, the fountains, the exotic public address announcements; all are part of it. People are part of it: school children and sightseers; ordinary travelers and world figures; cab drivers and customs inspectors. To these, Idlewild is a vigorous city, a carnival, a world fair, as well as a world airport. Most importantly perhaps, Idlewild is a vast storehouse of information on the philosophy and practice of architecture in our time.

HOW IDLEWILD CAME INTO BEING

Idlewild is one of four existing airports in the New York region. Provisions for a fifth are now under study. All of these are part of the regional air travel plan. While the others provide facilities for domestic medium- and short-haul passengers and cargo, private and non-scheduled flying, Idlewild has as its basic function, or mission, the provision of facilities for overseas and long-haul domestic flights.

Construction of Idlewild was begun, by the City of New York, in 1942. After basic fill, major utilities, six runways, and a small administration building had been completed at a cost of \$60 million, the Port of New York Authority leased the airport from the city in 1947. The basic plan at this time (Fig. 1), called for a tangential runway system with all passenger facilities located at the center. Hangars were to be placed alongside the runways. Outlying areas not needed for aeronautical purposes were to be developed as leased office buildings or industrial properties. In this way, the economic feasibility of the airport would be improved. The state of development, in 1947, of this scheme is shown in figure 2. The airport began operations in 1949. Over the next few years, while master planning went ahead, additional hangars and the control tower frame were constructed.

In 1949, based on the planning studies, the tangential runway system was discarded in favor of dual runways at approximately right angles to each other and an instrument runway at about a 45 degree angle to the others. This scheme, shown in figure 3, was ultimately developed into the master plan shown across-page. Other than the runway changes, the original scheme has been adhered to except cargo was moved outside the central area leaving it for passenger use.

THE SCOPE OF IDLEWILD

The realities of the size, complexity, and great scale of Idlewild are not easy to grasp. Just how big it is can be indicated, to a degree, by some of its statistics. Fifteen miles from midtown Manhattan, it occupies a site of some 4900 acres, over five miles long. Almost 30,000 people work here and the annual payroll is over \$191 million. Fifty-six buildings are now in existence or under construction. The investment at Idlewild to date is around \$350 million. Last year, nearly

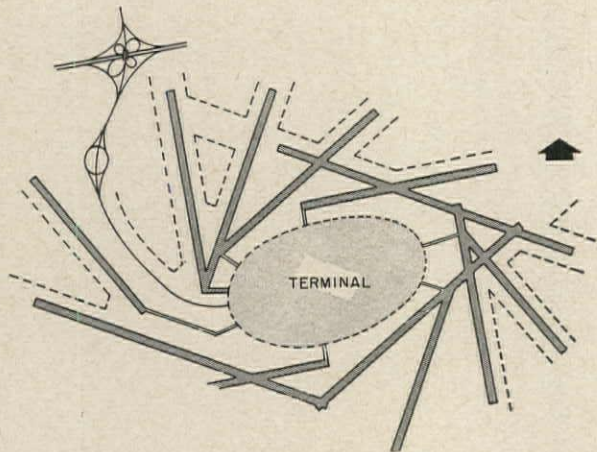


Fig. 1. Master plan of 1947, based on a system of tangential runways around central passenger area

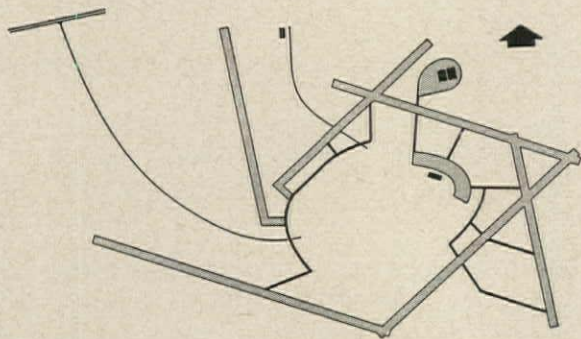


Fig. 2. State of development of tangential runway master plan taken over by Port Authority in 1947

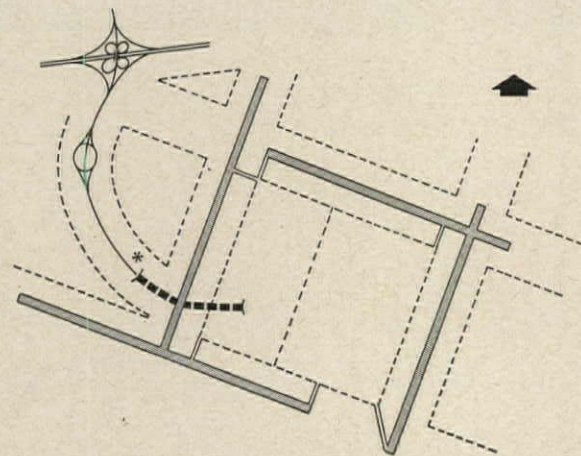
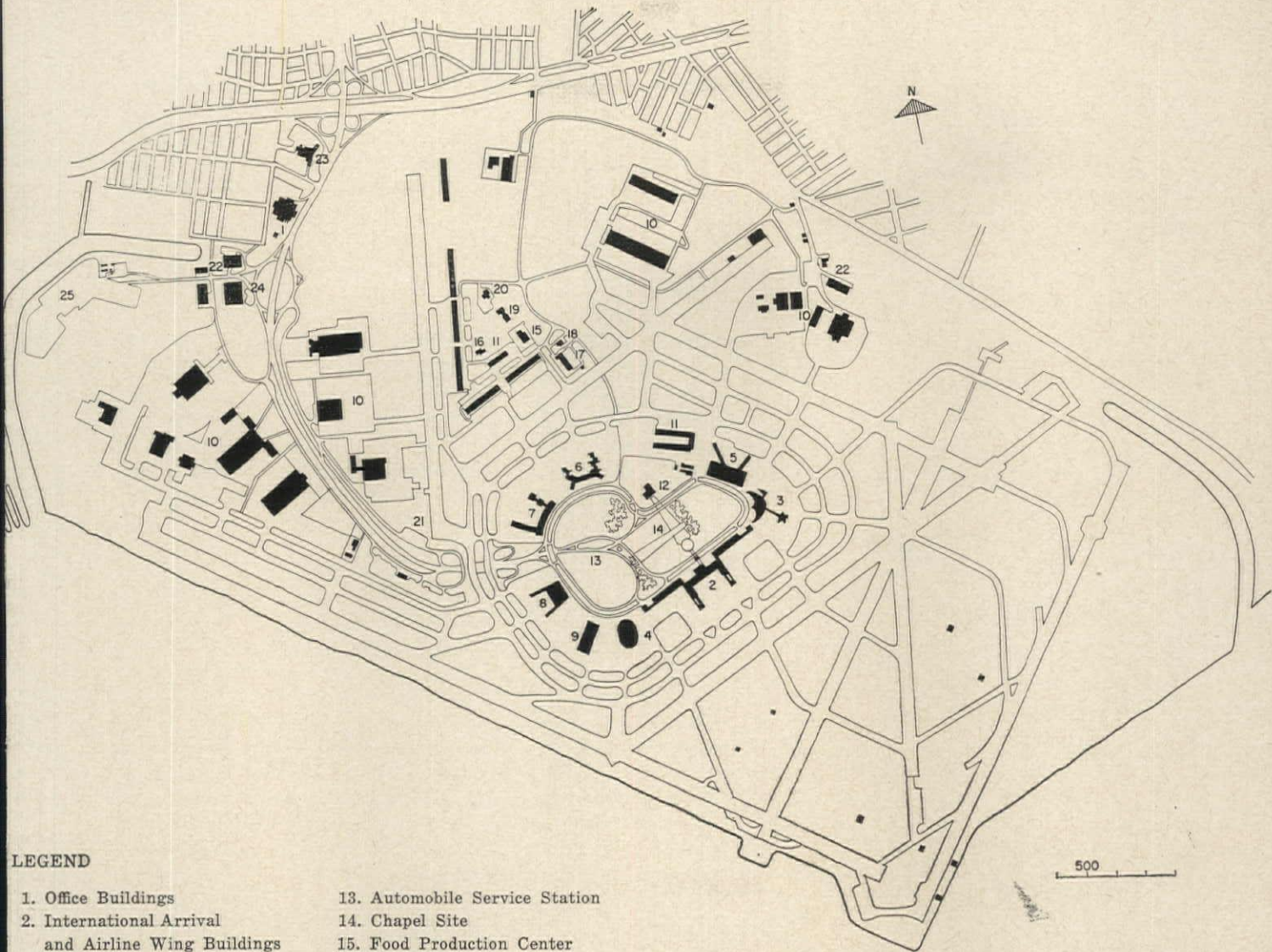


Fig. 3. New master plan based on dual parallel runways, adopted by Port Authority early in 1949



LEGEND

- | | |
|---|--------------------------------|
| 1. Office Buildings | 13. Automobile Service Station |
| 2. International Arrival and Airline Wing Buildings | 14. Chapel Site |
| 3. Trans World Airlines | 15. Food Production Center |
| 4. Pan American World Airways | 16. Animalport |
| 5. Multi-Airline Terminal | 17. Airmail Facility |
| 6. American Airlines | 18. Medical Building |
| 7. United Air Lines | 19. Telephone Building |
| 8. Eastern Air Lines | 20. Bus Garage |
| 9. Northwest, Northeast, Braniff | 21. Bank |
| 10. Hangars and Maintenance | 22. Industrial Buildings |
| 11. Air Cargo | 23. International Hotel |
| 12. Heating and Refrigerating | 24. Admin. and Maint. Building |
| | 25. Fuel Storage Tanks |

Idlewild has been planned, financed, constructed, and operated by the Port of New York Authority, John R. Wiley, Director of Aviation and John M. Kyle, Chief Engineer, since July 1, 1947 when the airport was leased from the City of New York. Terminal City was planned by the Port Authority Aviation Planning Division then under the direction of Thomas M. Sullivan, with the consultation of Wallace K. Harrison, Architect. Mr. Sullivan is now First Deputy Director of Aviation, Port of New York Authority

Terminal City From the West. Rendering by R. Corbelletti



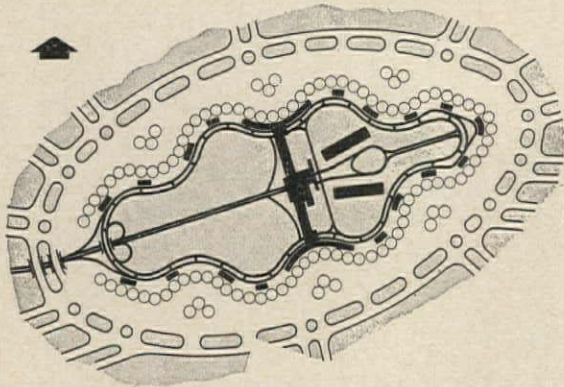


Fig. 1. Decentralized, or unit terminal, master plan as visualized by City of New York planners in 1947

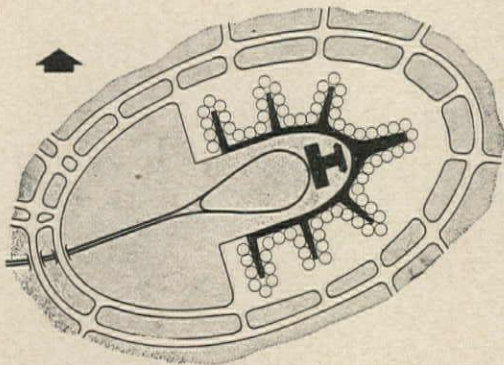


Fig. 2. Early 1948 version of centralized terminal building scheme developed by the Port Authority

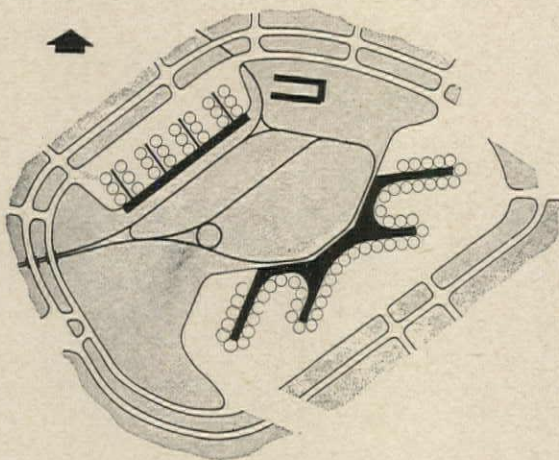


Fig. 3. Variation of the centralized scheme, with air cargo facilities added, developed by P. of N.Y.A. in 1949

million passengers with their luggage passed through, along with 275 million pounds of cargo and 88 million pounds of airmail. This traffic was handled by 23 domestic and 17 foreign airlines. Over 300 separate businesses, professional offices, or agencies are located here. They range from the airlines themselves to banks, veterinarians, and a dentist. In Terminal City, as the passenger area is called, there are 655 acres of space, with 220 acres of landscaped parks. In this area are five parking lots for 6000 cars, and the capacity is now being expanded.

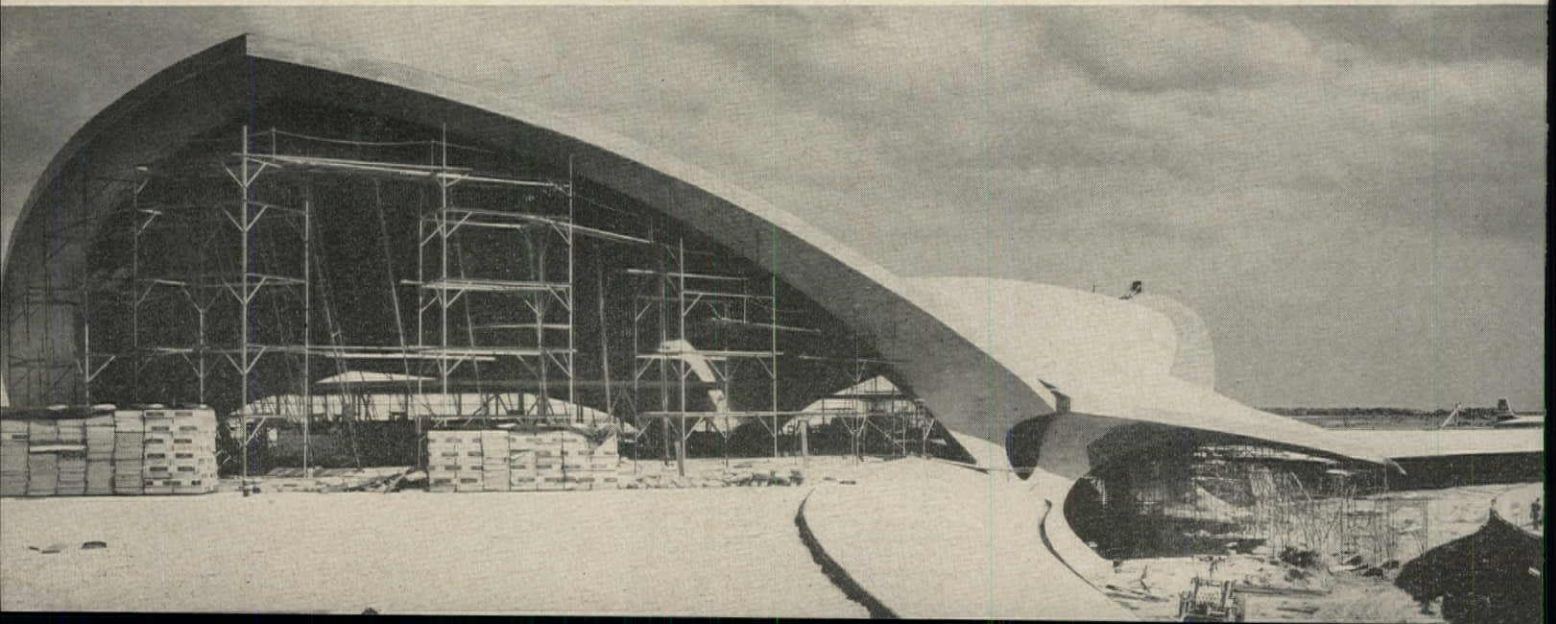
Some of the buildings in Terminal City reflect the great size of the airport. For example, the International Arrival and Airline Wing Buildings are 2375 ft long and enclose 578,000 sq ft of space. There are four other airline terminal buildings in this area, two are now under construction, and another is in the preliminary design stage. Also located within the passenger area are the Heating and Refrigeration Building and the automobile service station. Eventually, three chapels will be constructed near the lagoon. Outside the area are the cargo center, hangars, and some twenty other buildings.

CRITERIA FOR TERMINAL CITY PLAN

The basic decision behind the development of Idlewild was the definition of its mission as the handling of half of the long-haul domestic traffic of the area, one-fourth of the short- and medium-haul, and all of the overseas flights. From this, it was determined that the airport must provide for 100 movements (take-offs or landings) an hour. Early in the planning, certain criteria were established. Among these were: 1. passenger convenience—direct, unimpeded circulation, 2. efficiency—a sound operational plan for airlines and airport operators, 3. economic feasibility—maximum concession development, and 4. flexible planning—versatility required for future adaptability.

The criteria led to assumptions that: 1. existing airline passenger handling and flight clearance procedures would be followed, 2. facilities should be adaptable to single airline or consolidated operations, 3. aircraft, regardless of future types, would continue to be brought close to the building to facilitate passenger loading.

In arriving at data on which to base projected needs for space and facilities, airport planners rely most heavily on: 1. Definition of mission, 2. Traffic forecasts, 3. Space uses, and 4. Potential revenue. Accurate projections are difficult in any type of building project, but the difficulties are magnified in airport planning by the great rate of change in air travel habits and in the aircraft themselves. Thus, the mission of the airport may be revised, as it has been here over the years. Traffic forecasts are hazy indicators at best. At Idlewild, for example, the early 1953 forecast predicted 5.4 million passengers annually by 1965. This was revised, late in 1953, to indicate the same number by 1960. In actuality, traffic at Idlewild exceeded this figure by a half million by 1958, and had grown to 9 million by 1960. Space



uses change with the changing years and revenue potentials are extremely difficult to tie down.

EVOLUTION OF TERMINAL CITY PLAN

From the first, important principles of the planning of Terminal City were that the facilities should be scaled to the capacity of the runways and that they should be planned for expansion as travel volume expanded. Each succeeding stage should be complete in itself and self-supporting. From the beginning, the major problem was the question of a centralized versus a decentralized scheme. Was it better to combine facilities for all airlines in one building or to build unit terminals, each self-sufficient for the needs of one or, at most, a few airlines? The earliest thinking veered toward an extremely decentralized scheme, as shown in figure 1. Soon after the Port Authority took over, this plan was discarded, since a centralized plan seemed to have advantages in space economy, versatility, potential concession income, and improved operations. Some of the centralized schemes considered are shown in figures 2 through 4.

By 1953, it became apparent that the centralized terminal scheme had serious defects related to the fast growth of the airport. A much larger building than that originally visualized would be required and regardless of its size, it would need some sort of remote or satellite buildings to provide the necessary number of gate positions. This involved special transportation for passengers and other problems. Walking distances would be prohibitive, even within the building; operations would be inefficient. About this time, a few airlines began to consider individual terminals. They felt they would like to set up their operations in their own way and develop their own concessions. In 1954, the decision to go to unit terminals resulted in the plan shown in figure 5. As it turned out, the present plan, shown in figure 6, provides a combination of unit and centralized terminals. In some terminals such as the Wing Building Arrival and Multi-Airline Buildings, a number of airlines are housed. In others, only one or two.

PLANNING THE TERMINALS

The basic attitude of the planners toward the individual buildings has been one of tolerance of the aims and desires of the airlines and architects, as long as they are compatible with the more important objectives of the master plan. Terminal locations, site relationships to other buildings, the roadways, the runways, and the like are controlled. Such details as signs, which have an effect on the over-all appearance of the airport were restricted. In many respects, individual expression was allowed both airlines and architects. The result of this attitude has been a building group which adheres generally to the master plan, but which is composed of single buildings without much relationship to each other in massing or appearance. The buildings represent an extreme diversity of opinion on what con-

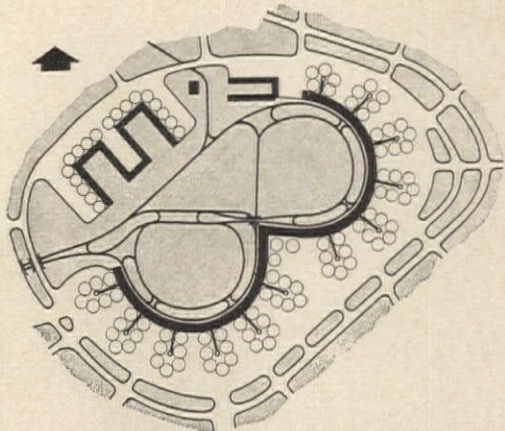


Fig. 4. Revised version of the 1953 scheme, made in an attempt to add more gate positions in the plan

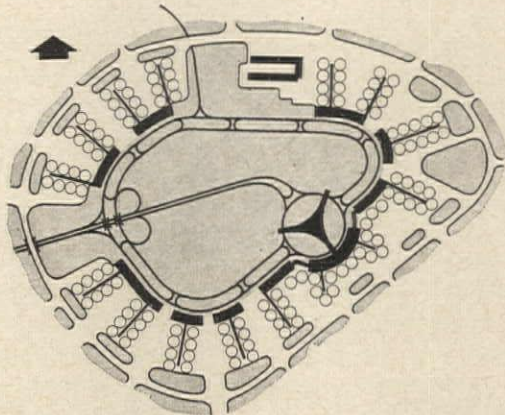


Fig. 5. Unit terminal scheme of 1954, with cargo removed to a position outside of the central area

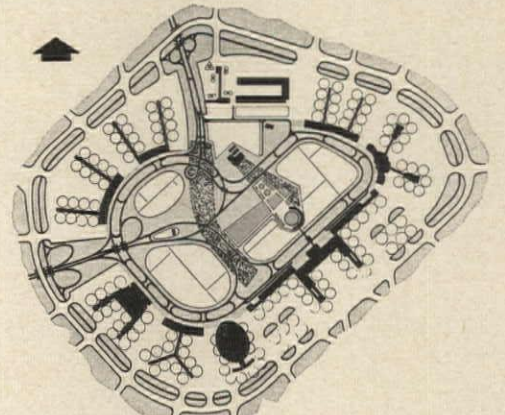
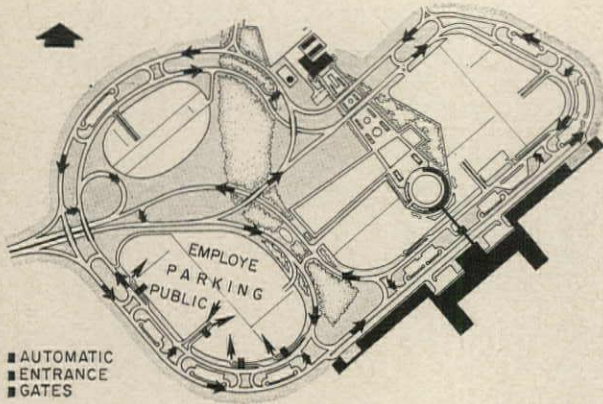


Fig. 6. Master plan of Terminal City, in all major respects, as finally conceived of and constructed



Idlewild



The problems of automobile traffic were solved in Terminal City by a one-way, dual lane, recirculating roadway system, with grade-separated crossings. Metered short-term parking is located across from each terminal and parking for longer periods provided for in large lots with automatic ticketing at entrances



stitutes a functional air terminal. This results in one of the most interesting aspects of Idlewild, since the solutions of the problems of passenger circulation, baggage handling, noise, jet blast, concessions, and the like vary greatly.

IDLEWILD—A JUDGMENT

Perhaps the most difficult part of judging what has been accomplished at Idlewild is the choice of a reasonable position for judgment. Surely, if the position should be that of the all-knowing, all-reasonable, all-talented, sitting on cloud nine, Idlewild would come off pretty badly. It is equally certain that judged from the position of the proponents of the "I have the creative training and ability—I know what is right—I'll design it and you can fit yourselves into it as best you can"—school of thought, Idlewild would be a failure. It does not, on the other hand, improve the state of architecture to take the position of the realists, saying with Dr. Pangloss, "this is the best of all possible worlds . . .", therefore we do what we must.

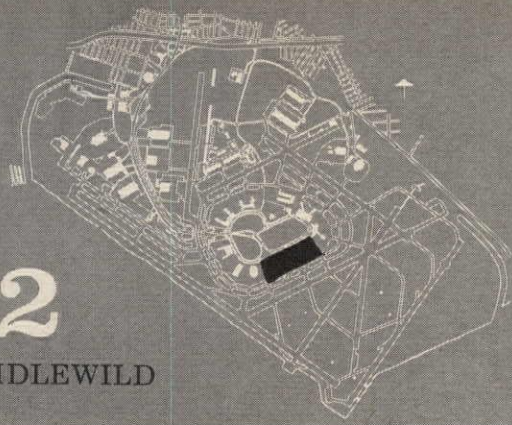
Perhaps a more helpful position to assume in order to judge Idlewild would be a sort of reasonable idealism, meaning the kind of idealism of good architects and engineers who strive to do the best work they are capable of, but who realize that there are certain realities involved in getting the job done. They realize, for example, that architecture tends to reflect its times. They realize that no matter how you work it, people have a way of getting into the act. They realize that these people—clients, airline presidents, public—never in actuality, act as some sort of average behavior statistic might lead you to believe. Uncontrollable factors, such as the effect of weather on flying operations and the unpredictable rate of growth of air travel, would be outside the area of judgment. Only factors that can be controlled would be judged. And then only on the basis of creative planning, design, and engineering within the framework of the needs of the client and users of the buildings, and within the limitations of economics, technology, and art.

Judged by such standards, Idlewild comes off pretty well. It works efficiently, if one doesn't get too far out of step with the systems of the place. It all hangs together somehow in spite of the extreme variations in the individual buildings. All in all, Idlewild is exciting. It functions well as an airport for the most part. It is of its time. In architecture, are these not signs of success?



2

IDLEWILD



INTERNATIONAL ARRIVAL AND AIRLINE WING BUILDINGS

The complex problems solved in this building involved providing common facilities for incoming passengers, with the necessary health, immigration, and customs facilities and separate offices for some 20 foreign airlines, together with the facilities required for departing passengers



ARCHITECTS:
Skidmore, Owings & Merrill

STRUCTURAL, MECHANICAL, LANDSCAPING:
Port of New York Authority

LIGHTING CONSULTANT (PARABOLA):
Richard Kelly

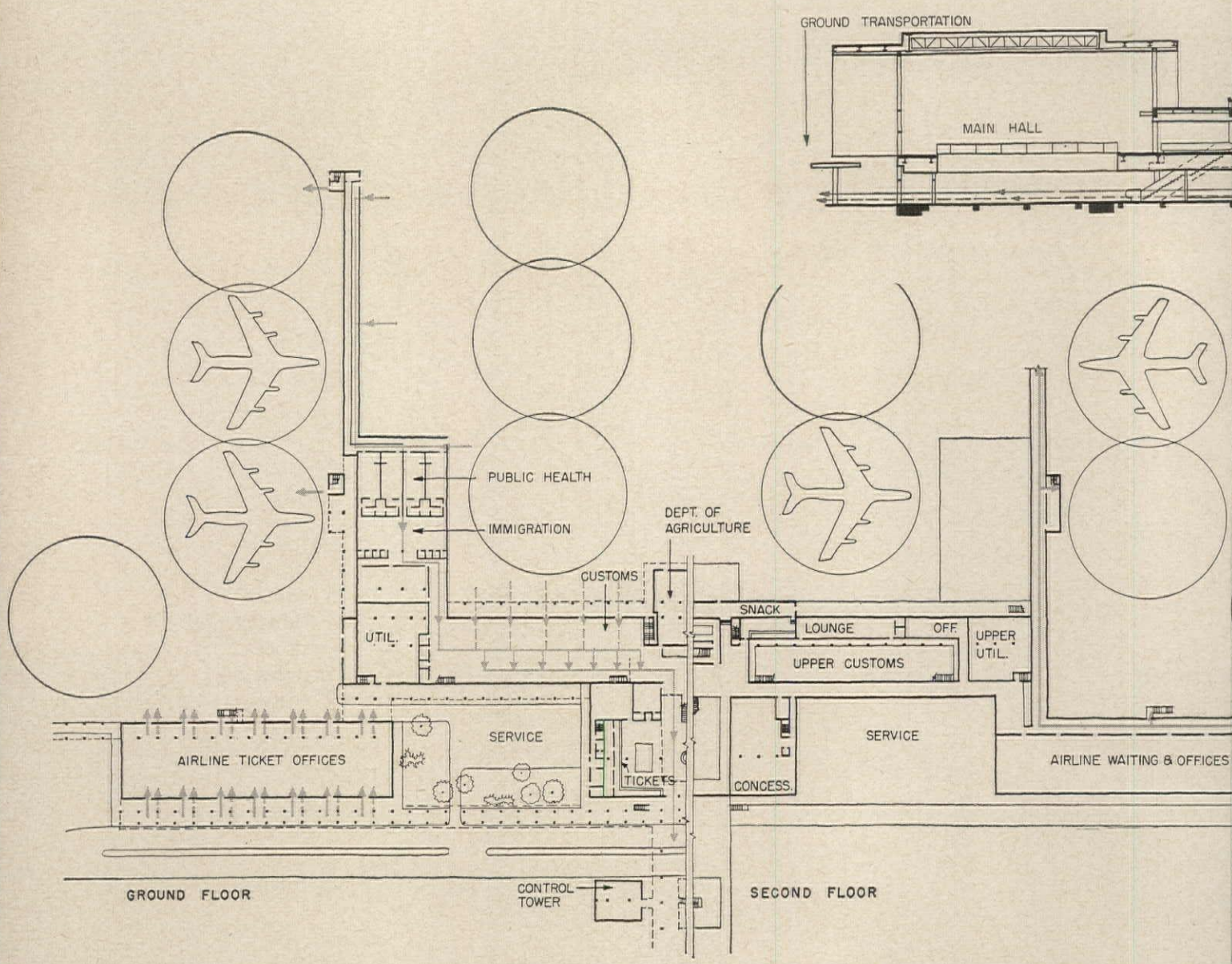
ACOUSTICAL CONSULTANT (PARABOLA):
Bolt, Beranek and Newman

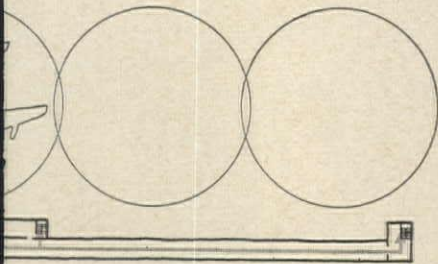
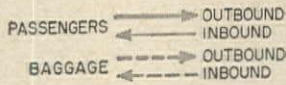
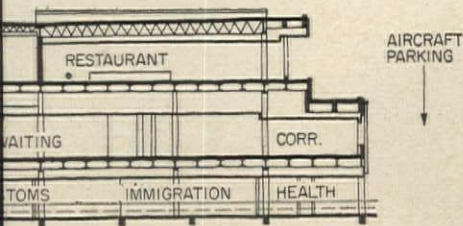
KITCHEN CONSULTANT:
Louis Abramson

CONTRACTOR:
Cauldwell-Wingate Co.

The largest and most complex building—actually a group of buildings—at Idlewild consists of the International Arrival Building, its two connected Airline Wing Buildings, and the airport control tower. This is the heart of Idlewild. From the control tower, the actions of the aircraft in the pattern above the airport and on the runways, taxiways, and aprons are controlled. In the arrival building, almost all incoming overseas flights, of domestic as well as foreign airlines, are handled. Customs, health, and immigration are located here. The Airline Wing Buildings house most of the foreign airlines at Idlewild and serve them as ticket offices, lounges, and general areas for handling their outbound passengers.

In such a large and extremely complex building as this, the problems of circulation, function, and architectural treatment are magnified. The building must serve many masters. It must serve as a focal point for the entire Idlewild composition. It must be capable of providing for large numbers of passengers and visitors, most of them unfamiliar with the building, many of them foreigners ignorant of ways in the U. S. and the language. In spite of the complexity of the requirements, the building performs its function elegantly and with a minimum of confusion.





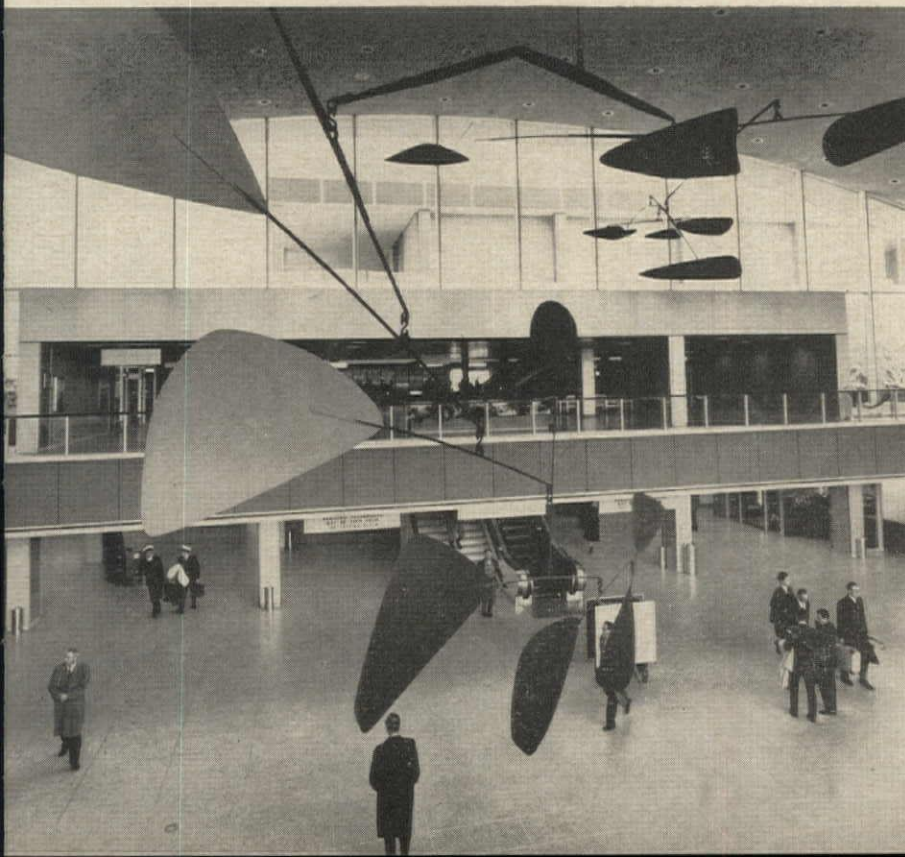
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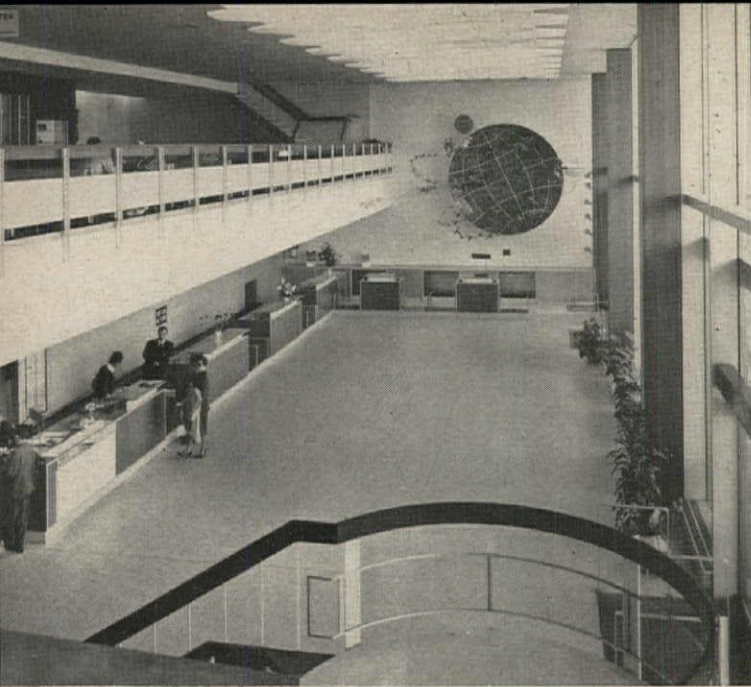


2. International Arrival and Airline Wing Buildings

The major problem in the design of the International Arrival and Airline Wing complex was providing for the large number of airlines serving a great number of people. Passenger and guest circulation had to be comfortable and efficient and allow operating personnel to go about their jobs in an orderly fashion. As actually planned, the circulation works in this way: incoming and outbound passengers are separated into circulation patterns in the Arrival Building and Airline Wing Buildings respectively. Incoming passengers enter the building within the center U-shaped area on the apron. They may then proceed directly to health, immigration, and customs offices. In the customs area passengers pick up their bags, have them inspected, and pass directly out of the area into the main hall and then may go to ground transportation. Outbound passengers are handled in the Wing Building offices. Schematic diagrams of the process are shown on the following page.

Shown here is an aerial view of the entire complex and below, from the left, two views of the great passenger hall and a view of customs showing super-market type inspection system.

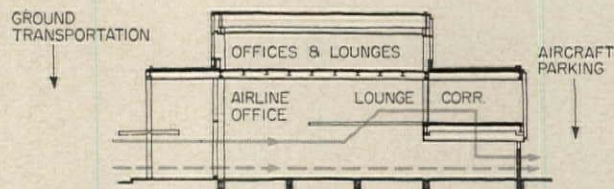
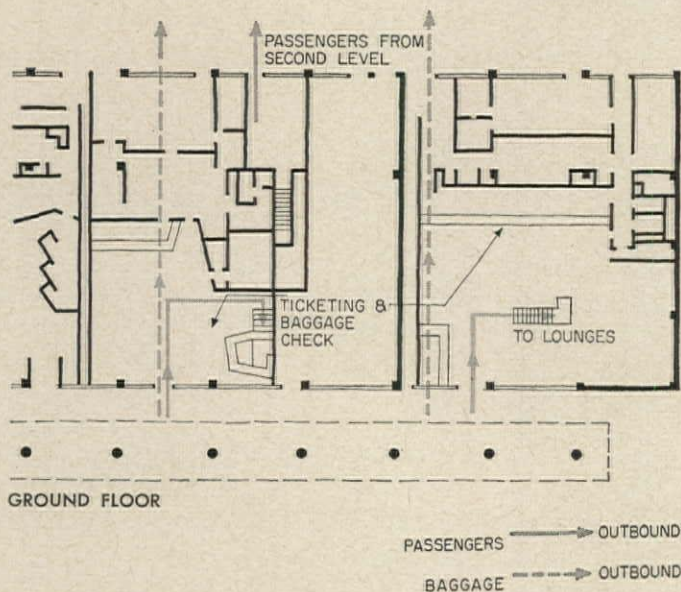




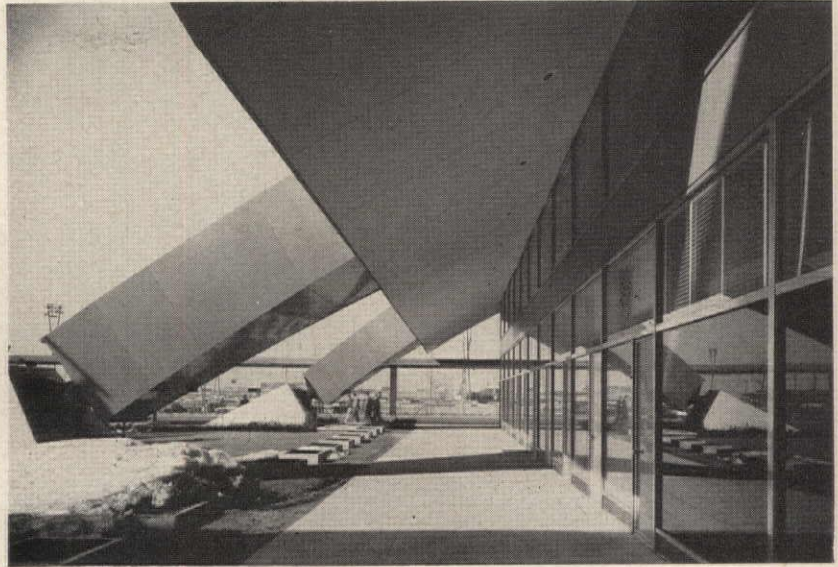
KLM-Royal Dutch Airline Office, Architects: Raymond & Rado. *Left, Lobby Area, right, Third Floor Passenger Lounge*



Sabena-Belgian World Airlines, Interior Designer: Michael Saphier Assoc. *Left, Lobby Area, right, Ticketing and Baggage Check*



Most of the foreign airlines occupying space in Airline Wing Buildings have ticket areas on ground floor, lounges on the second floor. Some also occupy third floor space. Circulation in all offices is similar to that shown in plan and section. Outbound passengers enter on ground level, are ticketed and check bags. If they have time, they may then go to upper lounges. When flight is called, passengers proceed along upper level corridors and descend to first level for boarding outbound aircraft through gate positions



2. International Arrival and Airline Wing Buildings

The exterior treatment of the arrival and wing buildings consists of simple rectangular masses with contrasting elements in the parabolic arch of the arrival portion and the vertical element of the tower. Inside the arrival section, the feeling of the exterior is repeated, but in the wing sections, the interiors are individual expressions of the airlines' own preferences. These offices are the work of many individual architects or interior designers. Each airline office stands on its own as a design; none has much in common with the others. In style, they vary from extreme simplicity to the ornate. Some indication of the treatment of interiors may be gained from illustrations on preceding page.

GENERAL

- airport control tower connected to building by covered second-level walkway
- arrival area serves all incoming passengers required to pass through government health, immigration, or customs inspections; incoming passengers and guests may enter building under cover at main entrance or through tower from parking lot
- wing buildings contain complete airline offices of foreign airlines and serve as departure areas for foreign flights of these airlines; passengers may enter individual airline offices from ground transportation directly in front of each office
- ticketing and baggage checking for outbound passengers handled individually by airlines; incoming baggage transported directly to apron side of two large customs areas, and delivered to passengers who then proceed through super market type customs check
- guests of outbound passengers may accompany them to gate positions, those of incoming passengers may observe their progress from glassed-in area of second floor overlooking the customs areas

STRUCTURE

- structural steel frame

MATERIALS

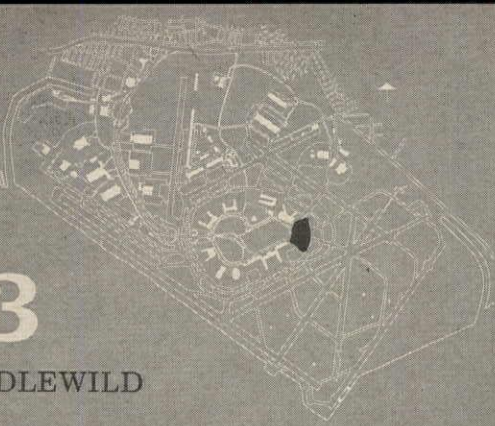
- exterior walls aluminum, plate and spandrel glass
- interior walls hollow metal partitions or ceramic tile
- flooring terrazzo, ceramic or rubber tile, carpeting
- windows aluminum; entrance doors glass; interior doors hollow metal
- ceilings acoustical plaster
- roofing stainless steel on parabola, built-up elsewhere

SYSTEMS

- building completely air conditioned and heated
- main hall lighted with luminous ceiling, fluorescent fixtures; other areas fluorescent, incandescent
- entrance doors automatic, doormat-operated
- public address system for announcements in all areas

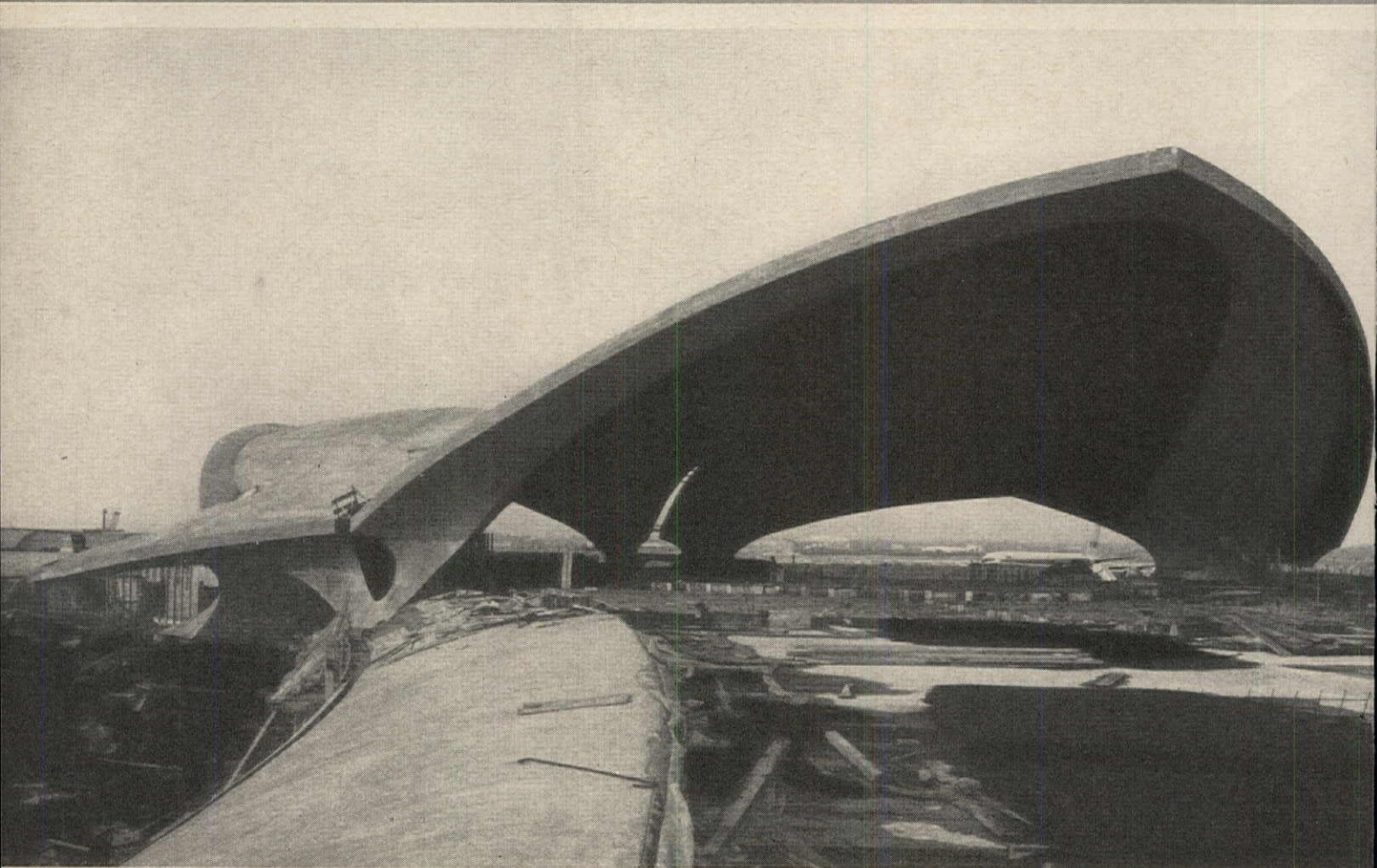
3

IDLEWILD



TRANS WORLD AIRLINES

Eero Saarinen says his intention was to "... relate the building to its surroundings, but still have it assert itself as a dramatic accent. The architecture would express the excitement of travel and reveal the terminal not as a static enclosed space, but a place of movement."



ARCHITECTS:
Eero Saarinen and Associates

STRUCTURAL ENGINEERS:
Ammann & Whitney

MECHANICAL ENGINEERS:
Jaros, Baum and Bolles

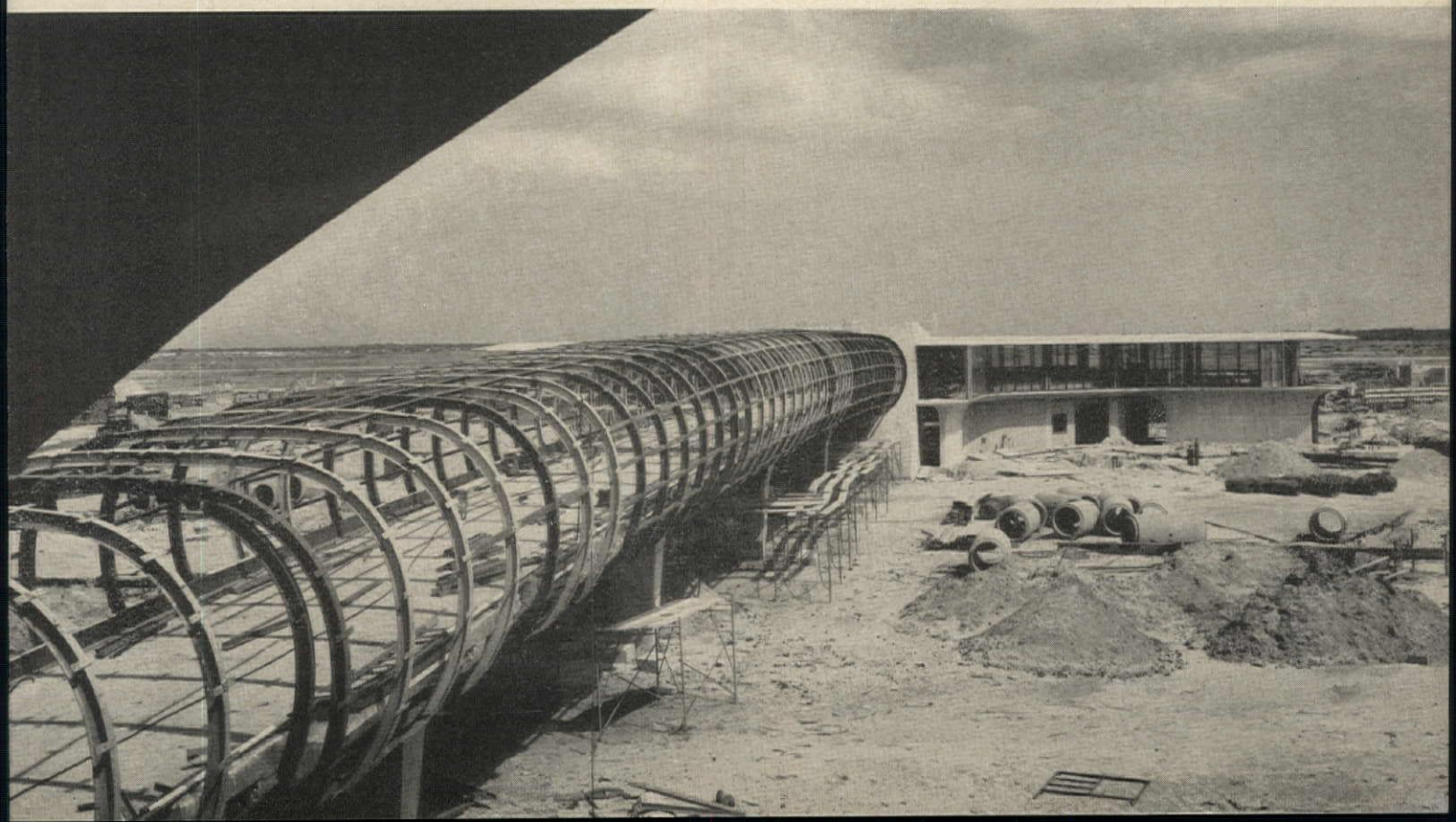
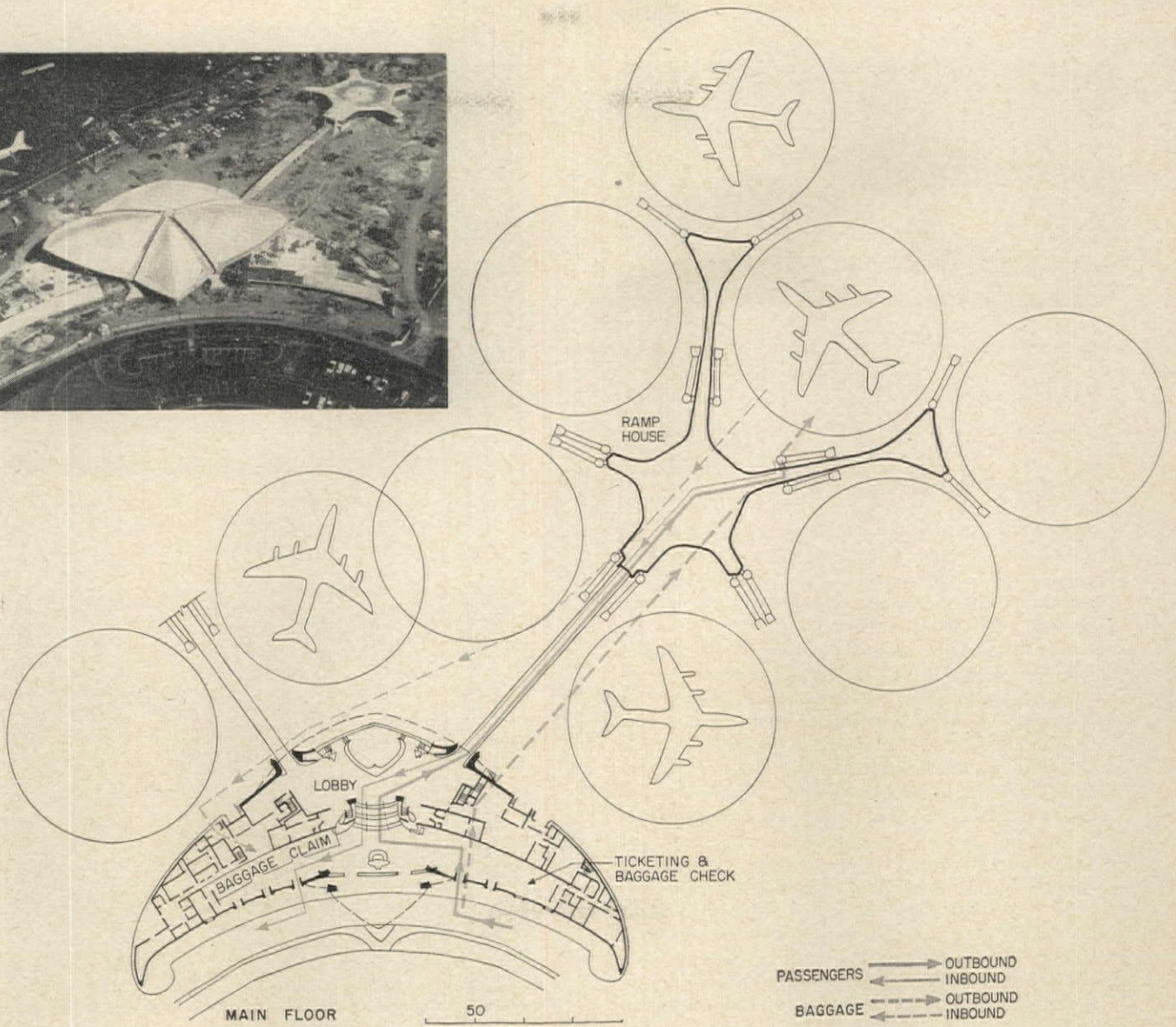
LIGHTING CONSULTANT:
Stanley McCandless

ACOUSTICAL CONSULTANTS:
Bolt, Beranek and Newman

CONTRACTOR:
Grove, Shepherd, Wilson & Kruge, Inc.

This terminal, at first glance, would seem to conform not at all to the master plan of Idlewild. It would appear to have little in common with the other unit terminals. The building is frankly experimental in form and structure. The others at Idlewild, except for Pan American, are mostly straightforward expressions of accepted structural systems and the more usual forms of architecture. This building soars; the others at Idlewild seem, for the most part, earthbound. This building expresses something of the flight experience itself. Most of the other terminals, judging from what meets the eye, might house any of a number of functions other than that of preparation for flight.

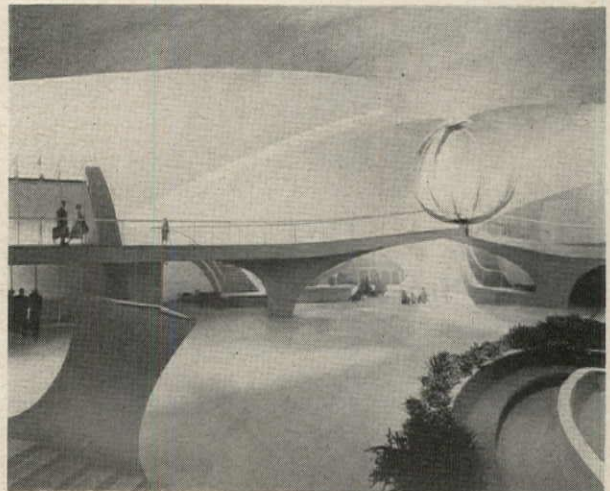
Oddly enough, this terminal actually fits quite well into the master scheme of Idlewild. Its curves are related to the curves of the master plan. It fits its site well. As symbolic and abstract as the form is, it houses an efficient and workable airline operation. In the main, the plan differs from the others on the airport in shape, not in function. A major difference is the provision of satellite buildings serving as departure lounges and operations buildings for aircraft servicing. These are connected to the main building by covered walkways, but would perform as well or better if moving sidewalks or mobile lounges were used.





3. Trans World Airlines

Some of the qualities of the form of this terminal can be gathered from the exterior and interior illustrations shown here. As may be seen, the structure consists of four intersecting barrel vaults, separated from each other by narrow strip skylights. The vaults are varied in shape and are supported on columns which carry the loads—and shapes—down to the ground. In the exterior illustration may be seen how the wings at either side of the building curve to conform to the plan of the roadway in front. As one moves through the interior, the form of the building presents a series of subtly changing shapes and patterns. To further heighten the soaring qualities of the building, the entire interior—walls, roof, and floor—will be finished in white. Accent colors will be carmine—derived from the airline's own colors—and will be used in carpets, signs, and other smaller details. At the left in the lower interior view may be seen one of the air fountains designed to direct flow of heated or conditioned air against the ceiling for the best distribution in the irregular interior spaces



GENERAL

- single level passenger circulation beginning at front entrance, continuing through terminal, covered walkway to ramp house, and telescoping loading bridges to aircraft
- continuous marquee over sidewalk at front of building
- slight changes in level in main circulation system by low-pitched ramps
- outbound passengers are checked in or ticketed on one side of great hall, incoming passengers reclaim baggage on other
- main waiting area depressed and furnished with theatre-like seating arranged in tiers
- ground level of terminal and ramp houses devoted to operational functions
- concessions located on main passenger level and on mezzanine (third) level

STRUCTURE

- essentially four reinforced concrete intersecting barrel vaults of varying shapes, supported on four Y-shaped columns
- vaults separated at intersections by skylights

MATERIALS

- exterior enclosed with glass
- main hall floors and walls white marble terrazzo
- some floors carpeted

SYSTEMS

- passenger loading by covered telescoping bridges connecting the ramp buildings with the aircraft; two bridges per aircraft, one at front, one at rear
- baggage handling with conveyors and containers which can be packed with bags and loaded directly into baggage compartments of aircraft
- building completely air conditioned and heated; unique parts of system are air fountains which will direct flow of air against ceilings

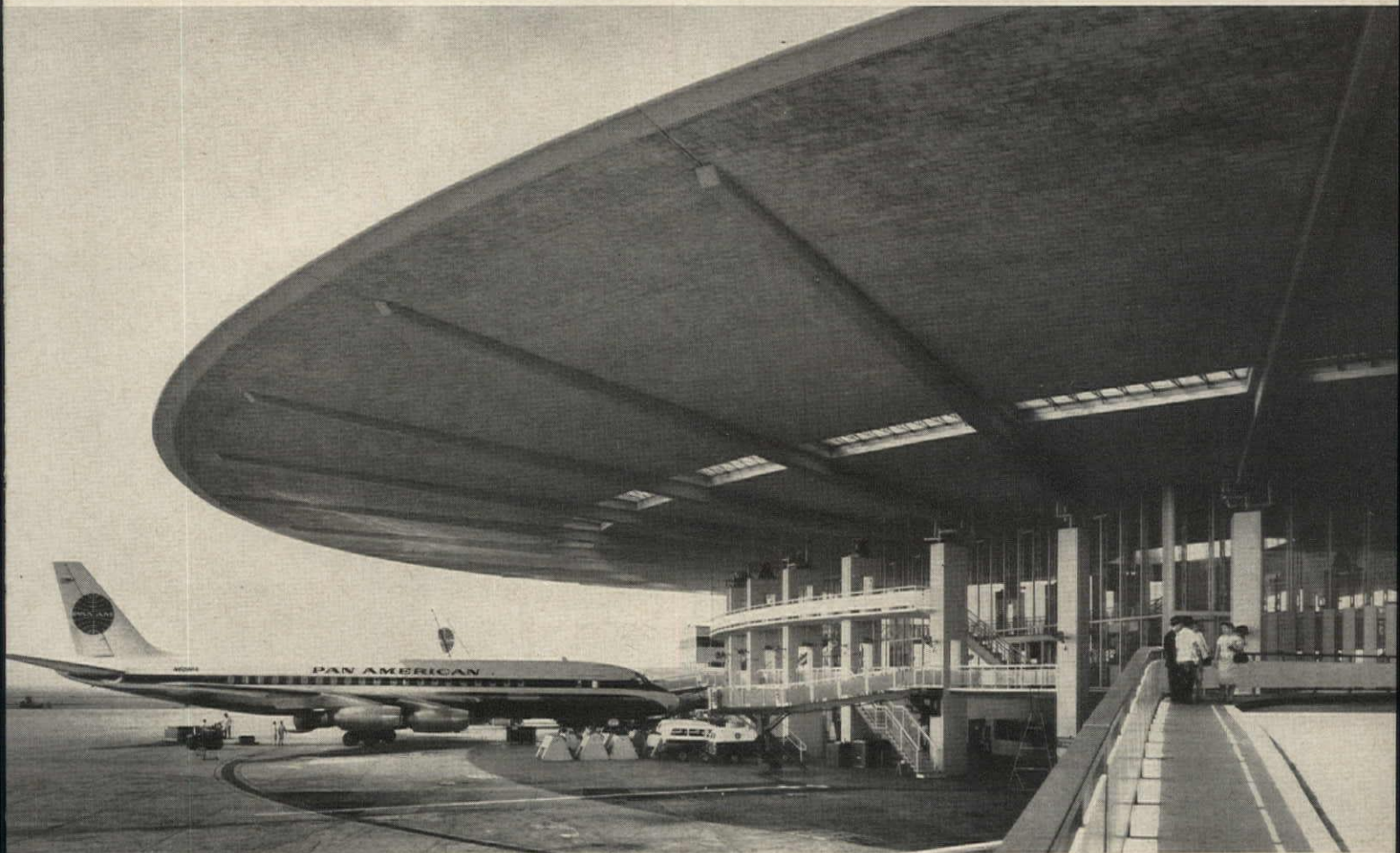
4

IDLEWILD



PAN AMERICAN WORLD AIRWAYS

Reduction of walking distances for passengers and protection from weather for passengers, crew, baggage, and aircraft were achieved in this open, oval-shaped structure with a steel framed cantilever roof extending out over the aircraft which nose directly into the building



ARCHITECTS:
Tippetts-Abbett-McCarthy-Stratton

ASSOCIATED ARCHITECTS:
Ives, Turano and Gardner

LIGHTING CONSULTANT:
Jean Rosenthal

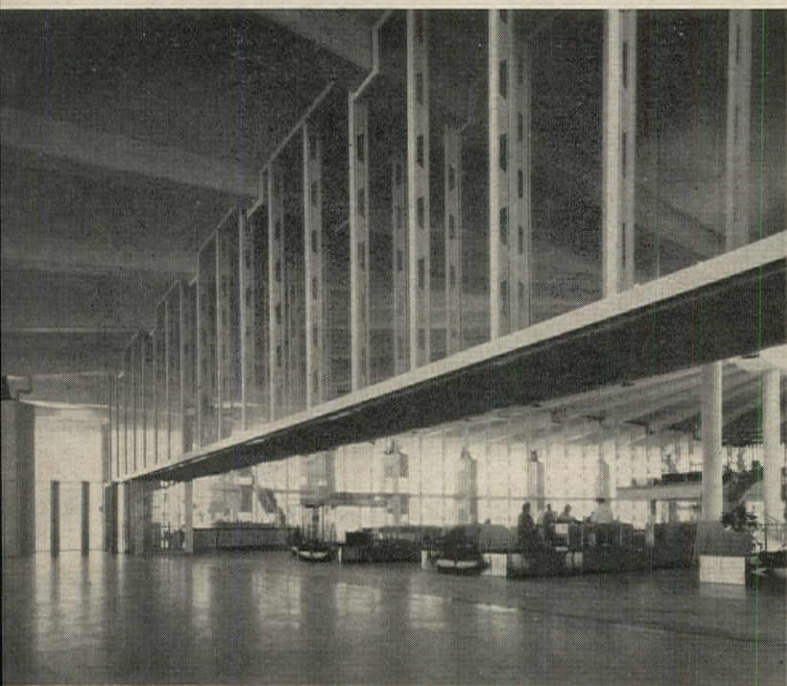
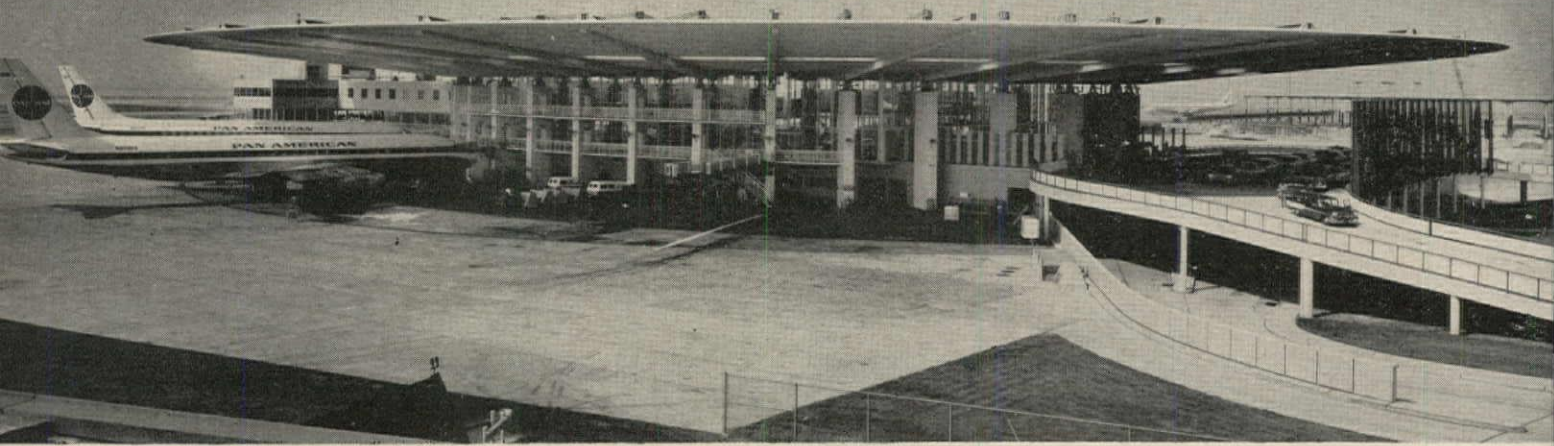
ACOUSTICAL CONSULTANT:
Lewis Goodfriend

AERO DYNAMICS CONSULTANT:
General Applied Science Laboratories

CONTRACTOR:
Turner Construction Co.

While most terminals at Idlewild and other airports rely on some system of fingers or satellite buildings for getting the aircraft into position for passenger loading, the PAA terminal breaks all of the rules. Instead of moving the passengers to the airplanes, here the airplanes are brought to the passengers. Here, the aircraft are literally nosed into the building—or at least—nosed under the building overhang. Thus, from the passenger areas inside the terminal, it is only a few steps, at most, to the aircraft.

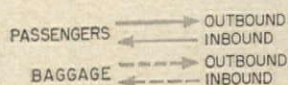
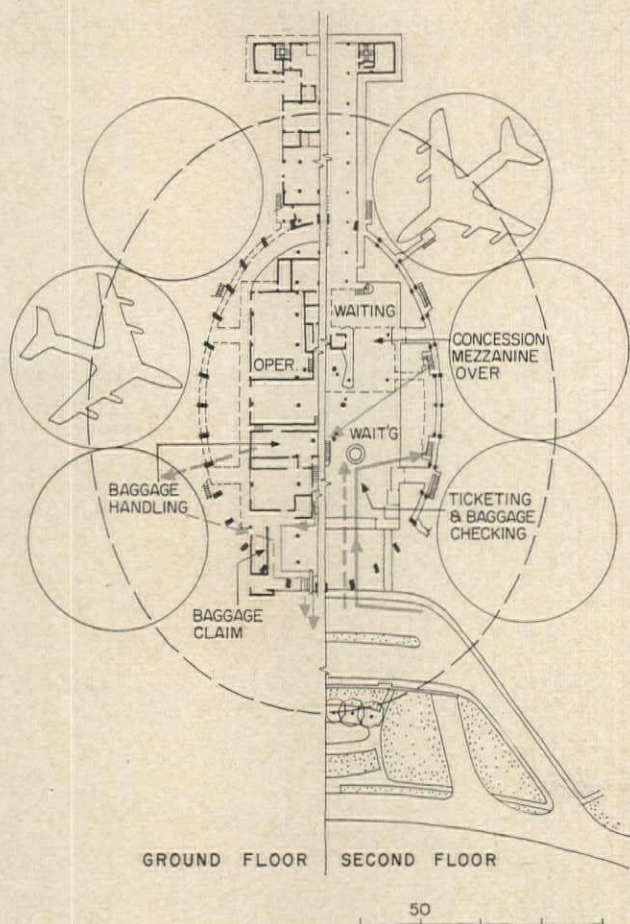
The result of this concept is a building with a striking oval shape and a great umbrella-like canopy all around, the airplanes nestling into it. For passengers and operations personnel alike, the concept leads to less steps, protection from the weather, and savings in time and energy. It is not, however, an unmixed blessing. By placing the aircraft around the terminal and nosed into it, the maximum number of aircraft that can be handled at a given time has been exactly fixed. There is no apparent way to expand the facilities within the present design concept. And while the aircraft come into the terminal under their own power, they must be towed away from the terminal upon departure, before they can start their own engines.



4. Pan American World Airways



In the exterior views on this page and the aerial view across-page may be seen the general configuration of this terminal, an oval umbrella of steel and concrete cable suspended over a glass-enclosed interior space. Roadways approach the building on two levels under the cover of the cantilevered roof. The upper level is used by outbound passengers, the lower by incoming. Outside the roadway may be seen a glass windscreen, placed here to protect the front entrance and roadways from wind and blowing rain. Attached to the windscreen are the Pan American sign and 12 bronze sculptures representing the signs of the zodiac, all executed by Milton Hebard. The interior views show, on the left, the main hall of the terminal from the roadway at the front, and on the right, the main hall looking toward the concessions. In the interior illustration on the left is the large air door entrance



GENERAL

- terminal design based on grouping aircraft around the building to reduce walking distances, solve exposure problems
- outbound passengers reach terminal, under cover of overhang, from ground transportation
- lounge areas located near gate positions; aircraft in full view of passengers
- ticketing, baggage checking located on main level
- major concessions located on mezzanine, others such as newsstands on the main level
- most PAA incoming passengers arrive at International Arrival Building; those arriving here may reclaim baggage near front exit and board ground transportation under cover

STRUCTURE

- oval, cable hung, cantilevered roof consisting of 32 prestressed steel girders, radiating outward from a hub of 32 reinforced concrete piers

- inner hub of six tension columns to resist upward thrust; set in elongated hexagonal plan with skylight in center
- roof sloped toward center; downspouts located in the support columns

MATERIALS

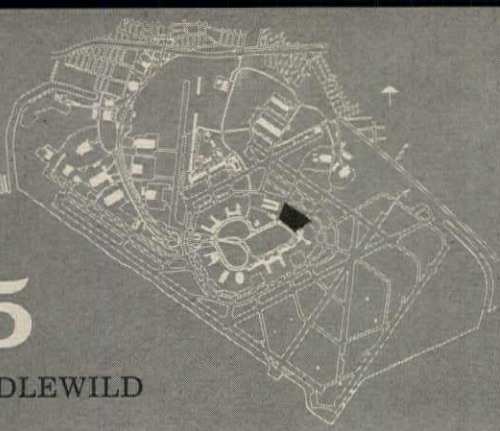
- exterior walls glazed brick, mosaic tile, glass
- interior walls concrete block, painted plaster, ceramic veneer, ceramic tile, movable partitions
- flooring vinyl asbestos, terrazzo
- ceiling acoustical cellular glass
- windows stainless steel with double glazing or spandrel glass

SYSTEMS

- passenger loading bridges from terminal to aircraft
- conveyors for outgoing and incoming baggage
- air door at entrance, 10 ft high by 89 ft long
- building completely air conditioned and heated
- built-in ground air conditioning system for aircraft

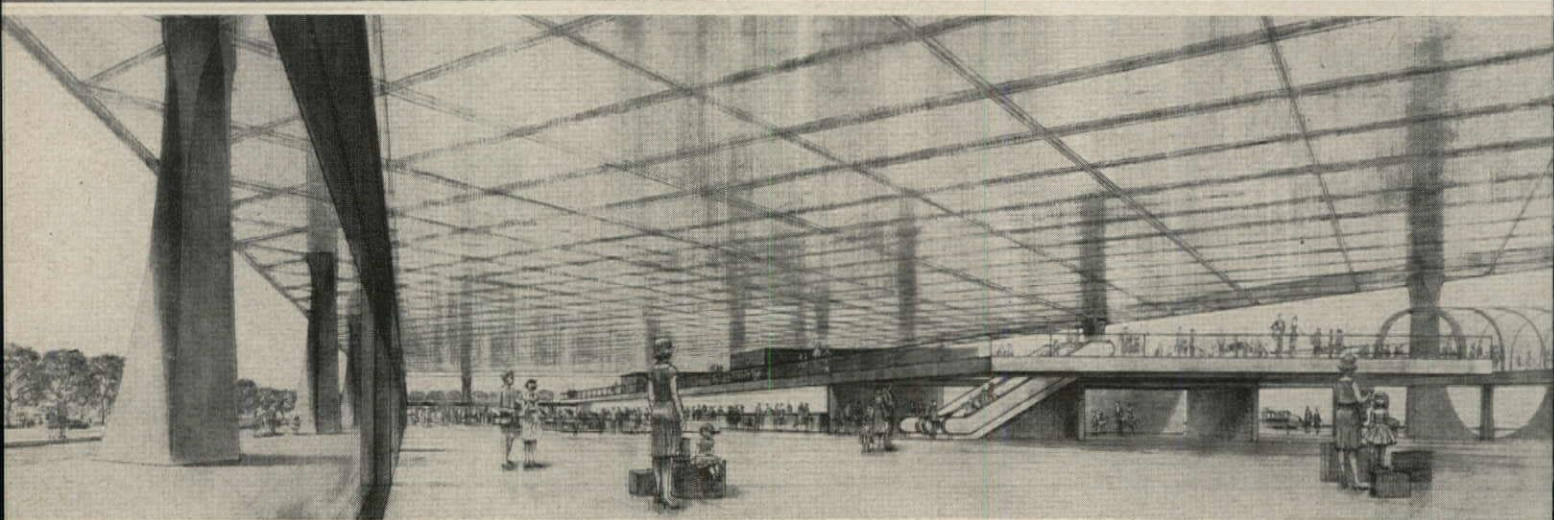
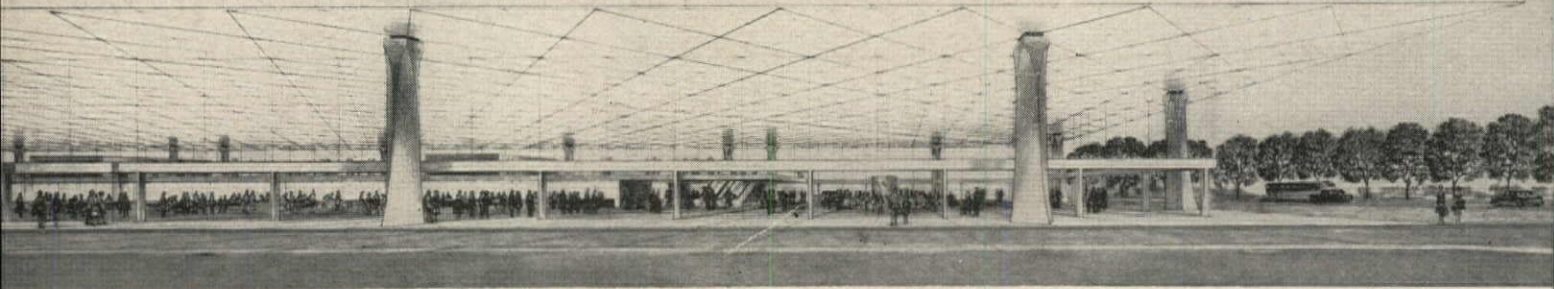
5

IDLEWILD



MULTI-AIRLINE TERMINAL

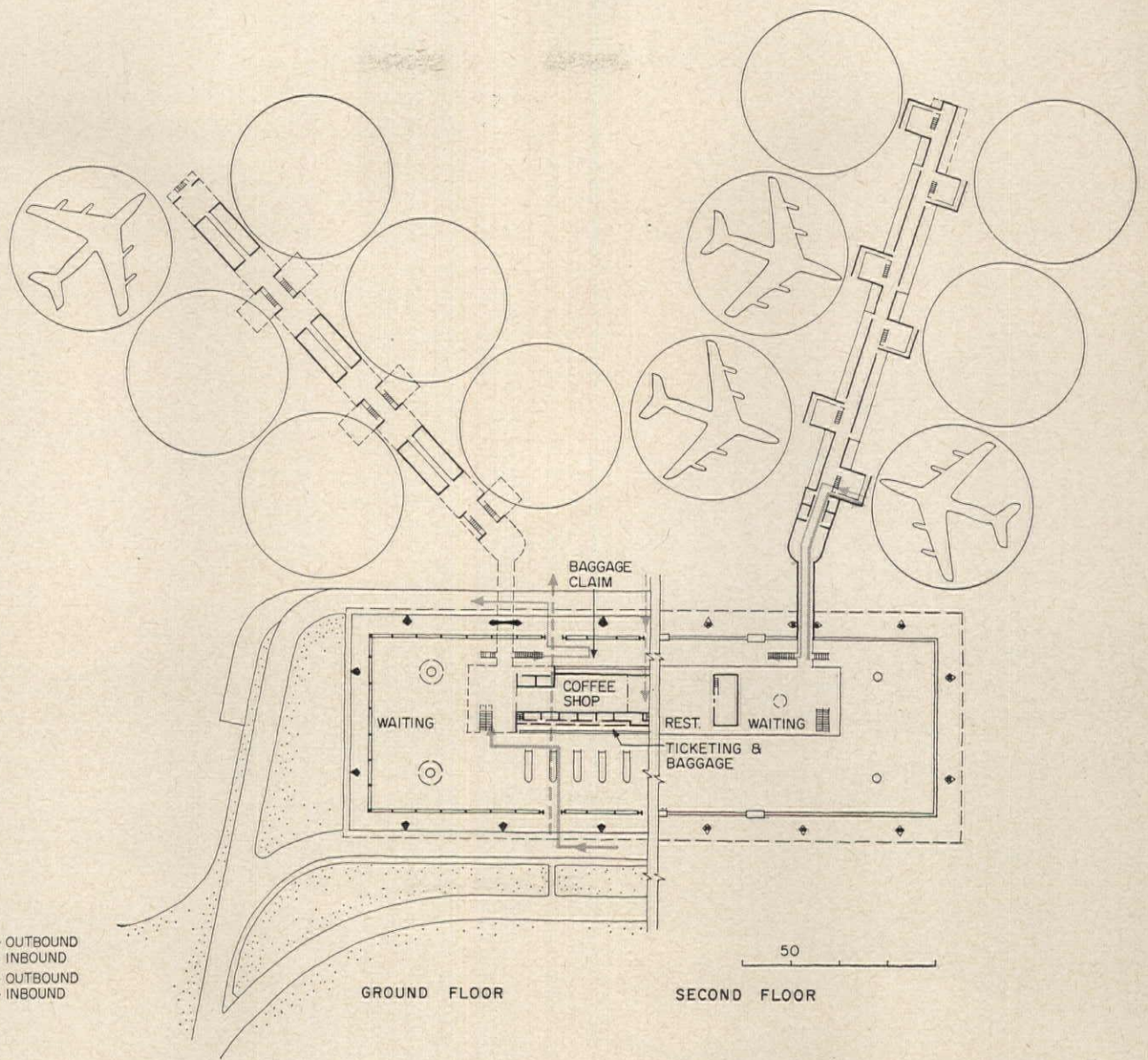
Winner of a competition for a terminal to house the ten domestic airlines which do not have their own buildings, the scheme shown is being developed into a glass enclosed, rectangular two-story building with a flat space frame roof structure supported on massive free-standing columns



ARCHITECTS:
I. M. Pei & Associates

This building will be occupied by ten or so domestic airlines. In architectural concept, it is quite unlike any of the other terminals at Idlewild. A great, spacious, open glass box, the building itself appears almost to disappear, the form is so light and airy. Its plan is quite different from those of the other terminals. In this building, outbound passengers approach from ground transportation on the street side of the building, while those arriving on flights will enter autos or buses on the apron side. By dividing the circulation in this manner, some of the problems of passenger cross-traffic have been minimized. The problems of automobile traffic have been almost eliminated.

Inside the building, the outgoing passengers will proceed directly to ticket counters on the ground floor, check their baggage, then go to the second floor via escalators and out the fingers to the aircraft. Incoming passengers will enter the terminal from the fingers, go down escalators to the first level, claim their baggage, and depart on the apron side. Major concessions will be located on the second level. The building will be constructed in two phases, each phase replacing approximately half of the present temporary terminal. Construction is scheduled for completion in 1964.



GENERAL

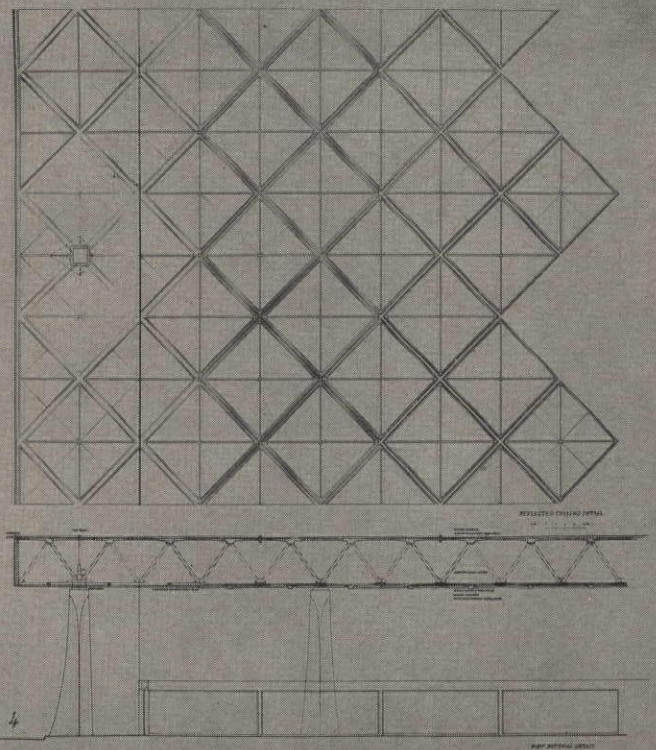
- passenger vehicle access to building on front and field side; passenger loading arcades bridged over roadways on field side
- ticketing and baggage check on main floor, waiting and concessions on island mezzanine

STRUCTURE

- free-standing concrete columns supporting space-frame roof, composed of pre-assembled steel pipe tetrahedrons
- concrete slab deck with tension cables, steel pipe compression members on underside

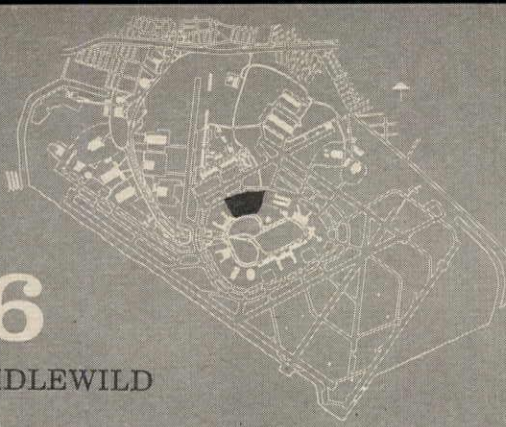
MATERIALS

- two-story high glass walls on all four sides, placed on interior side of exterior columns
- ceiling of prefabricated stamped aluminum panels with reflective finish



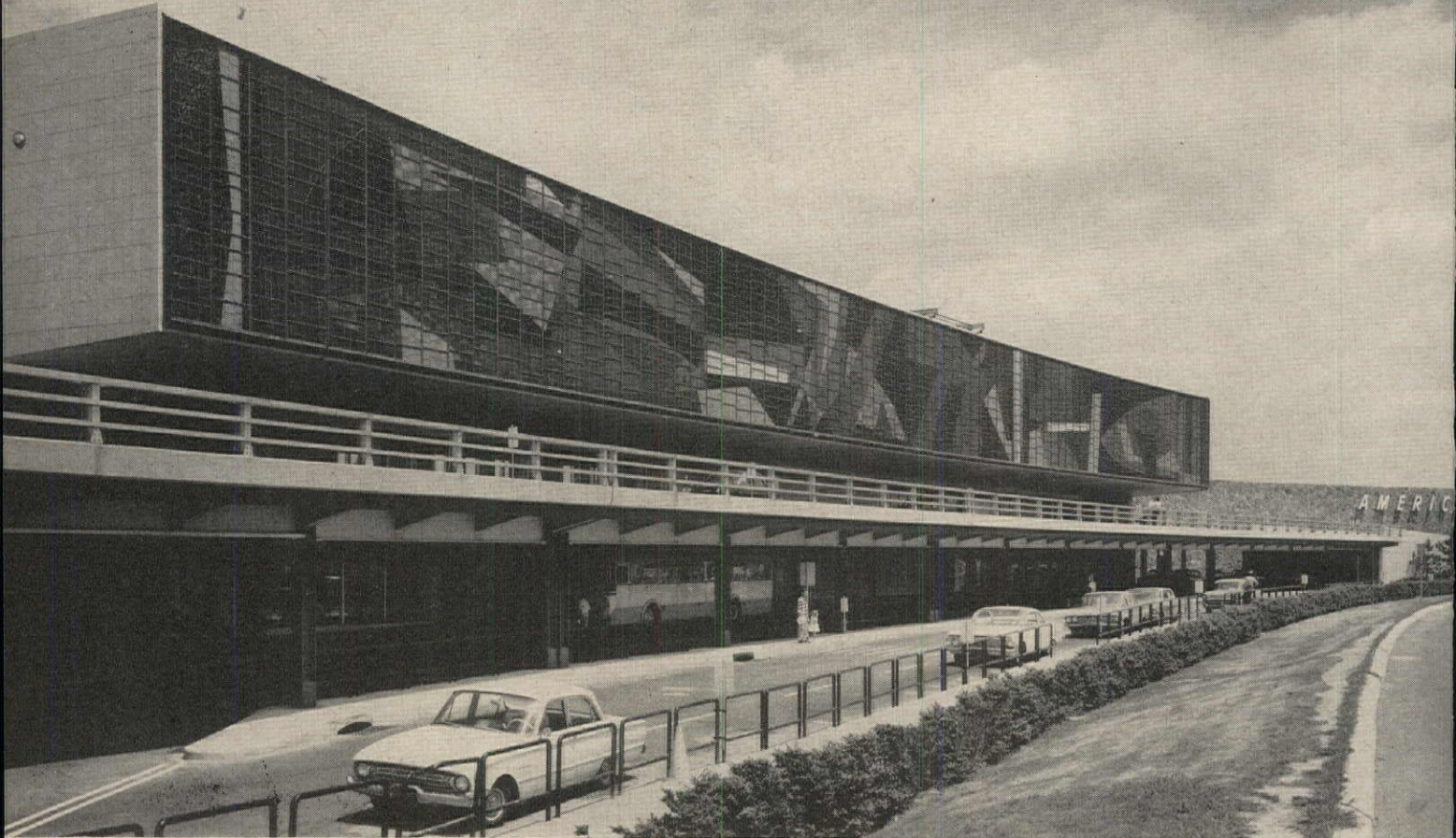
6

IDLEWILD



AMERICAN AIRLINES

For passenger comfort and convenience, contacts with the activities of aircraft servicing have been minimized, incoming and outgoing passengers are separated, and passengers are protected from the weather from the time ground transportation arrives until they enter the aircraft



ARCHITECTS:
Kahn and Jacobs

STRUCTURAL ENGINEERS:
Severud-Elstad-Krueger Associates

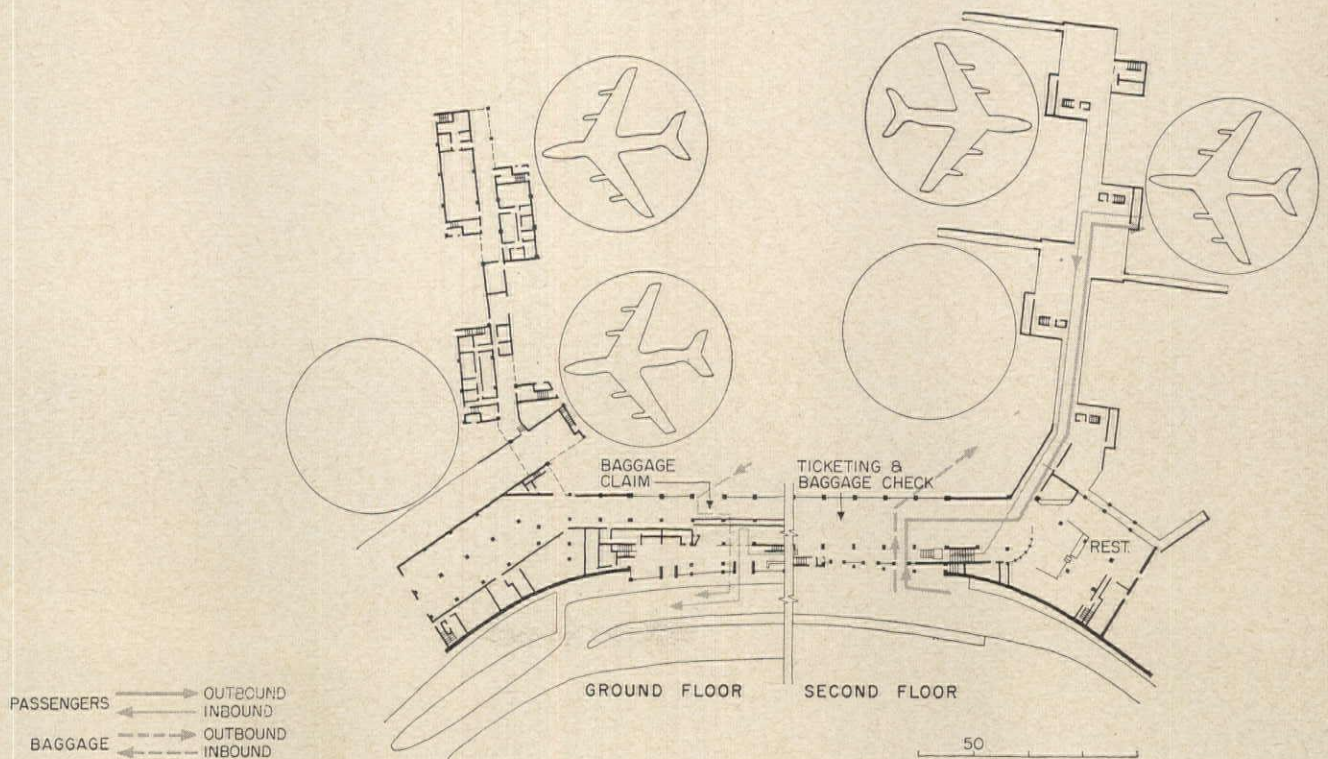
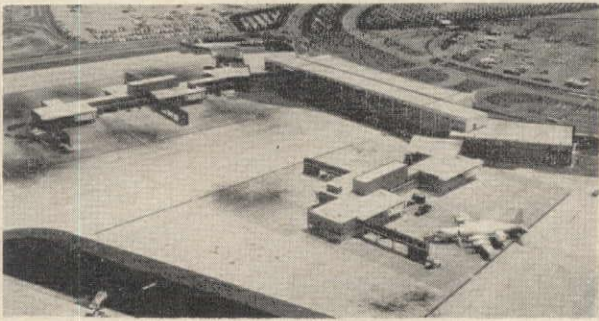
MECHANICAL ENGINEERS:
Jaros, Baum & Bolles

RESTAURANT CONSULTANTS:
Schofield & Weed

CONTRACTOR:
Turner Construction Co.

Whether one is favorably impressed by the big stained glass mural on the facade of this building, or impressed with the terminal in spite of the mural is a subject for conjecture. It is certain that the mural stands out as the big feature of the building as it is approached from the Idlewild roadway. Once inside the building, the functional aspects of the plan assert themselves.

This is a building that is easy on the passenger. Ticket counters are just inside the entrance in a perfectly obvious location, yet out of the path of general traffic. From here, it is a shorter than average walk—all on the same level—to the departure lounges and through the covered loading bridges to the aircraft. Inbound passengers gain access to their luggage after a short walk and an escalator ride to the ground floor and may depart the building under cover on this level. Baggage is handled by conveyors; flight announcements are pre-recorded and made at frequent intervals; showers and dressing rooms are available for passengers; concessions are conveniently placed. Operations offices and all of the service and housekeeping functions are removed from the passenger areas. All of this adds up to a terminal which functions well from the standpoint of both passengers and operating personnel.



GENERAL

—outbound passengers gain access to building via covered roadway on the upper level and proceed through ticketing, baggage checking, waiting lounges on this level

—incoming passengers reclaim baggage on lower level and proceed under cover to roadway at this level

—restaurant and other concessions at second level

—thirty foot high glass behind ticket counters allows unrestricted view of aircraft movements on ramp

STRUCTURE

—steel frame with steel decking and concrete floor and roof structures

MATERIALS

—exterior walls combination of granite, terra cotta, concrete block, brick, metal siding, glass, and large stained glass mural by Robert Sowers

—interior walls finished with travertine, ceramic tile, rosewood, plastic wall covering, and paint

—windows aluminum framed, pivoted, double glazed with heat reducing glass; doors glass-aluminum entrance type or hollow metal

—flooring terrazzo, vinyl-asbestos, quarry tile, marble tile, carpeting

—ceilings acoustical or plaster

SYSTEMS

—departure lounges with movable, covered, passenger-loading runways connecting with aircraft

—baggage handling by a system of conveyors

—general lighting luminous ceiling and individual fluorescent fixtures

—complete air conditioning and heating throughout the terminal building

—automatic doormat operated entrance doors

—pre-recorded flight message system broadcasts automatic announcements throughout terminal when three-digit code is dialed by an agent

7

IDLEWILD

UNITED AIR LINES

Ease of entry from ground transportation, efficient and comfortable passenger circulation, simplified baggage handling, and provisions for modification if necessitated by changing tastes or procedures are expressed in clarity of plan and architectural treatment of this air terminal



ARCHITECTS:

Skidmore, Owings & Merrill

STRUCTURAL ENGINEERS:

Severud-Elstad-Krueger Associates

MECHANICAL ENGINEERS:

Syska & Hennessey, Inc.

AIRFIELD PAVING CONSULTANTS:

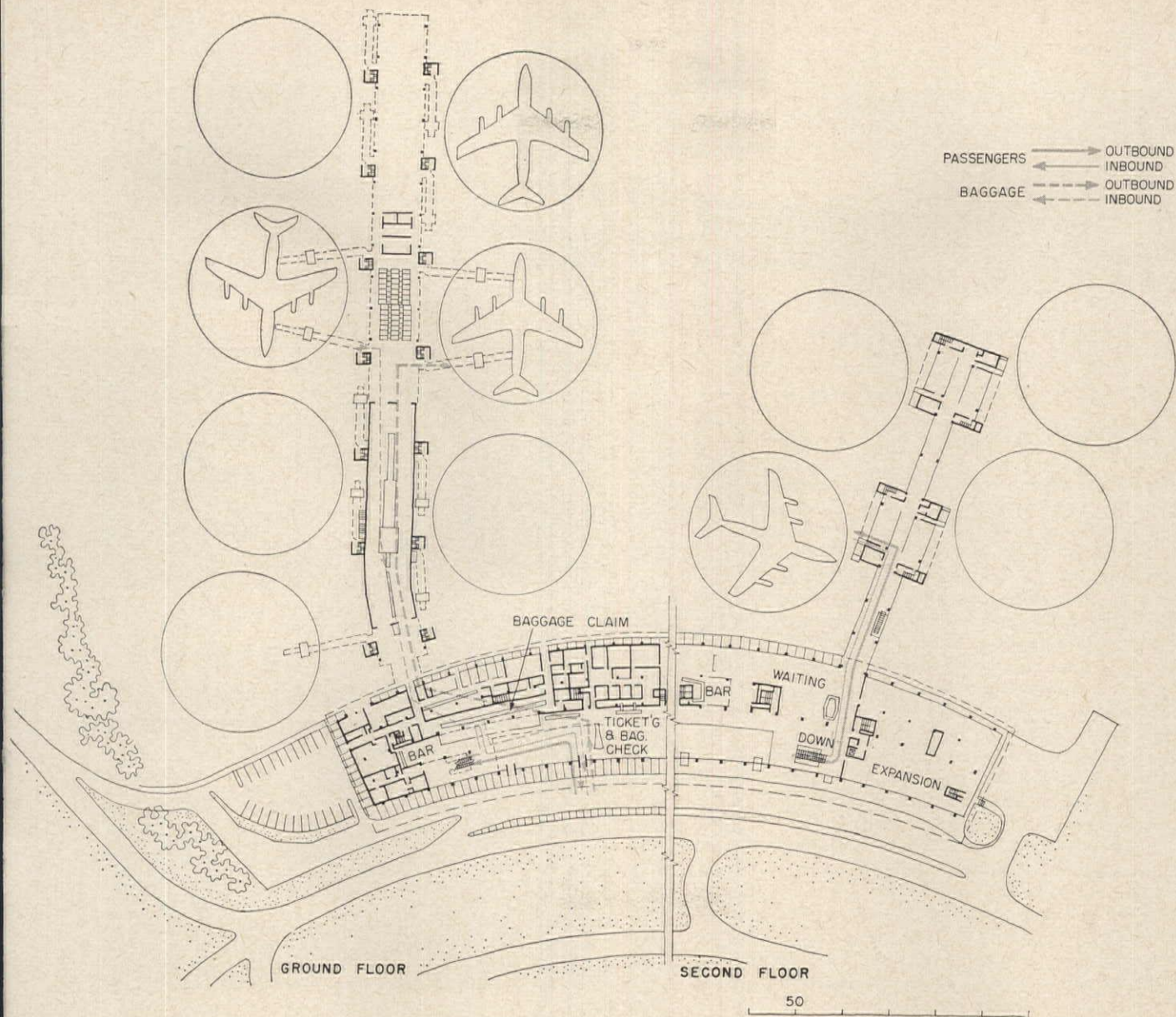
Moran, Proctor, Mueser & Rutledge

CONTRACTOR:

Humphreys & Harding, Inc.

Better than any other, this terminal seems to fit the over-all concept at Idlewild. Having designed the International Arrival and Airline Wing Buildings and the Heating and Refrigeration building to conform with each other in style, SOM continued the development here and ultimately in the bank. Perhaps, if the other Idlewild architects had been more inclined to let these early buildings determine more of the design concepts of the other unit terminals, Idlewild might have come off better as a unified concept (though some of its excitement might have been lost).

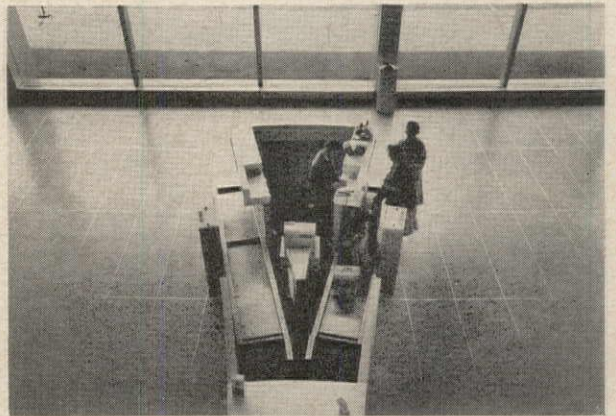
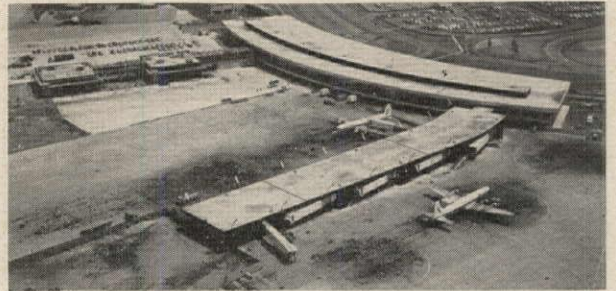
The simple, direct, logical form of this building reflects the same attributes in the design philosophy behind it and in the plan. Lines of circulation are clearly defined without gimmicks or experimentation. Functional centers of activity such as the ticket counters are placed in logical locations. The plan and treatment of the interior are straightforward. To the passenger, all of this adds up to a lack of confusion and an easy-to-use building. To complete the picture, every current mechanical device is available for making the passenger's procedures more orderly, comfortable, and fast—escalators for changing levels, movable covered bridges for aircraft loading, automatic entrance doors, automatic baggage weighing, check-in, and handling.





7. United Air Lines

The simple, logical treatment of the exterior of this building is indicated in the illustration above. The canopy extends over the sidewalk for the length of the building. Temporary parking for passengers is available along the entire length. This makes it possible for a passenger to depart ground transportation directly in front of one of the ticket counters located just inside the entrance doors. At the present time, Delta Airlines leases a portion of the building from United. The Delta space is located in the near end of the building as shown in the illustration. In the air view at the right, the United finger is in the foreground, the Delta in the background. Both views give some indication of the curved shape of the long building. In the air view may be seen some of United's telescopic covered passenger bridges. The interior view shows one of United's express ticketing and baggage check-in counters. Passengers place their bags on the scale-conveyor where they are automatically weighed and the overweight charges, if any, calculated. After tagging, the bags are moved by the conveyor through an opening in the counter down to the baggage room for sorting and removal to aircraft



GENERAL

- building shared with Delta by United Air Lines; each airline has its own operating facilities
- entry or exit from ground transportation on single level at front of 691 ft long building
- entire length of sidewalk covered by canopy
- ticketing and baggage checking immediately inside the entrance doors
- outbound passengers take escalators to one of two second floor waiting rooms, and proceed to aircraft through fingers and covered aircraft loading bridges; telescoping UAL bridges allow front and rear or plane loading, those of Delta single entry loading
- incoming passengers repeat process in reverse, reclaiming their bags on the main level

STRUCTURE

- structural steel frame with steel deck and concrete roof structure

MATERIALS

- glass and aluminum curtain walls, precast concrete panels
- interior walls precast concrete panels with plastic laminate, wood veneer or ceramic tile finishes, or movable partitions
- windows aluminum glazed with plate glass
- flooring terrazzo, ceramic, quarry or asphalt tile, or asphalt paving block
- ceilings acoustical plaster or tile

SYSTEMS

- passenger loading with covered bridges; UAL version fully maneuverable in three dimensions and telescopic
- baggage handling with conveyors and automatic scales; reclaim has automatic baggage diverter which distributes baggage along claim area table
- building completely air conditioned and heated
- outgoing baggage sorted and placed in containers which are loaded intact into aircraft cargo spaces

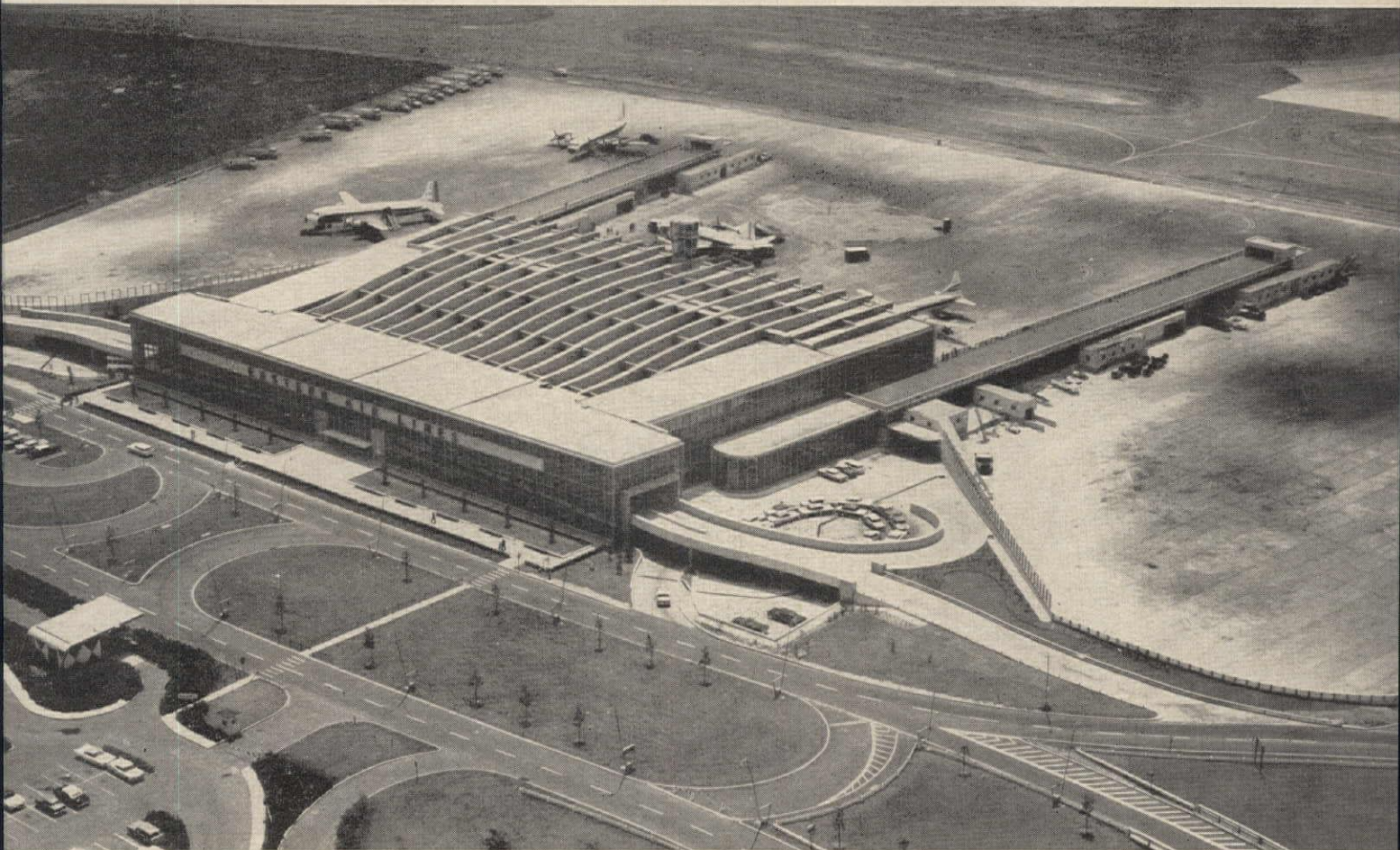
8

IDLEWILD



EASTERN AIR LINES

In this building, the largest of the unit terminals, important design considerations were adequate space for passengers, operations, concessions, and expansion and provision for unimpeded passenger circulation by ramps inclined downward in the general direction of traffic.



Perhaps the most striking effect of this terminal is its size. It is said to be the largest individual airline unit terminal in the world. It is certainly larger than any other at Idlewild. Just how big it is can be gathered by the size of the main hall—almost 30,000 sq ft. This is larger than the arena of Madison Square Garden or the concourse at Grand Central Station. Just why the terminal was planned so large is somewhat obscure, the architect having died and most of the Eastern officials concerned with its design having moved on.

The size of this building and its capacity—ultimately 6 million passengers a year—pose a question that currently seems unanswerable. Admittedly, it is almost impossible to accurately predict the growth of air travel. So far at Idlewild, the growth has surpassed the most optimistic of projections. In the long run, Eastern could prove to be the only airline at Idlewild with a building large enough to grow at a rate paralleling the growth rate of air travel itself. If this should come to be, the other airlines at Idlewild may eventually find themselves spilling out of their buildings, while Eastern continues to expand within its present structure. On the other hand, it would seem apparent that this building is oversized, at least for the present.

ARCHITECTS:

Chester L. Churchill

ENGINEERS:

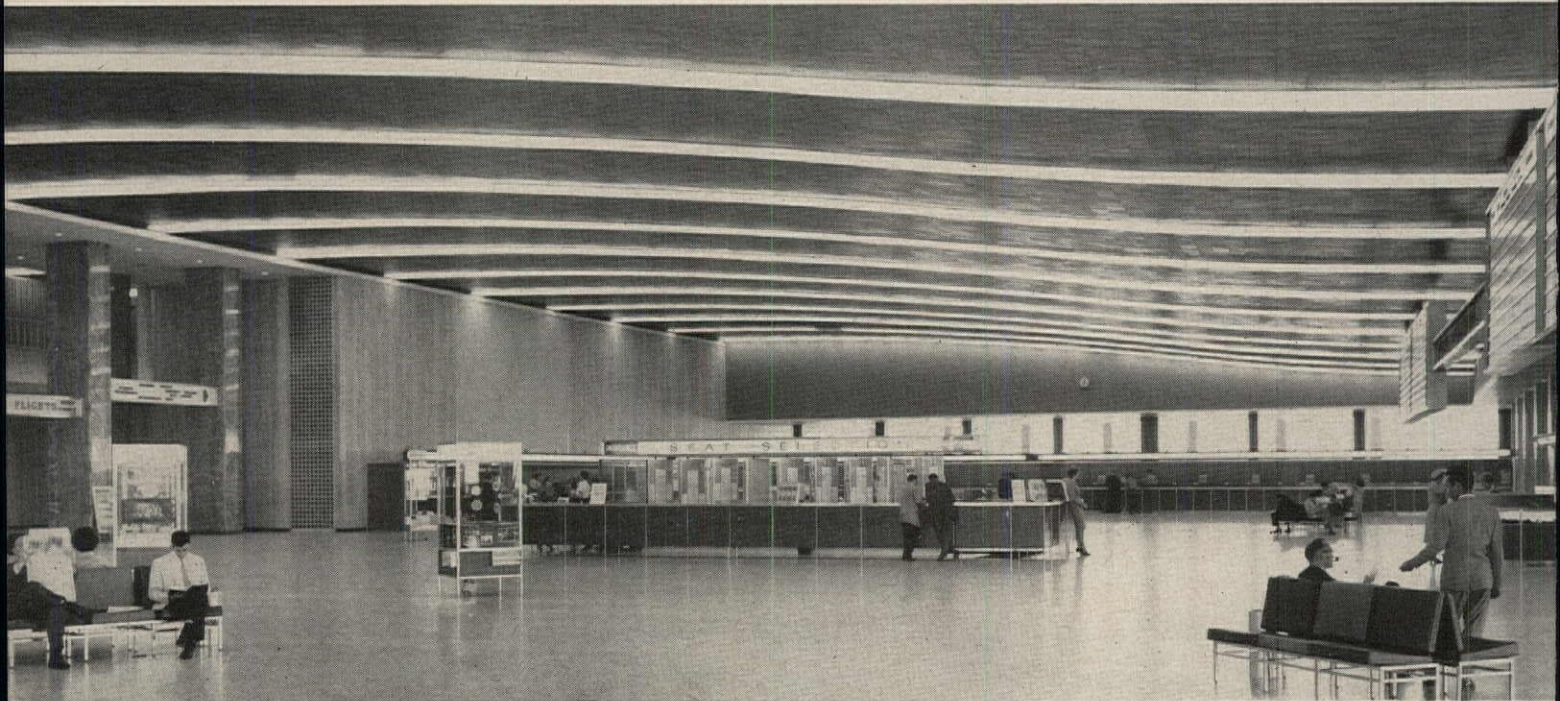
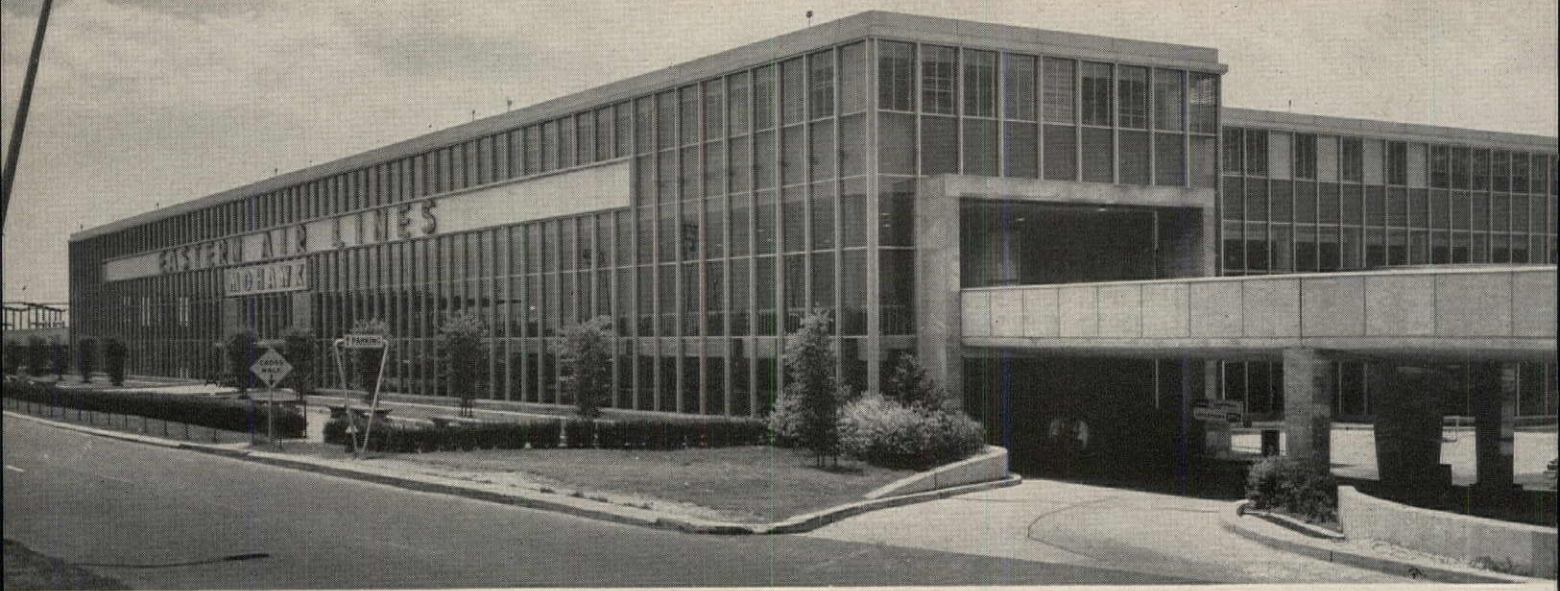
Seelye, Stevenson, Value & Knecht

LANDSCAPE ARCHITECT:

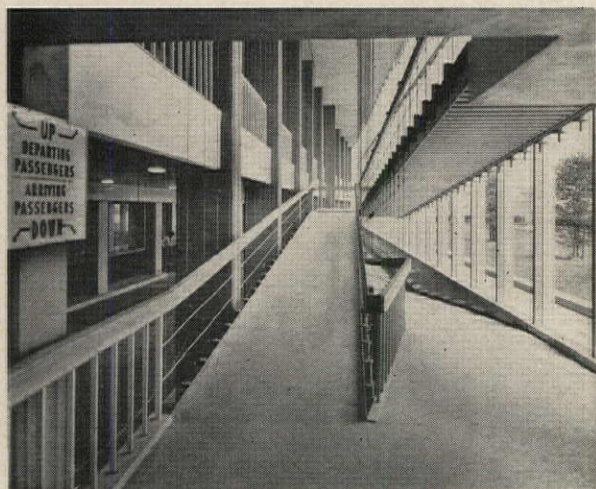
Leo A. Novick

CONTRACTOR:

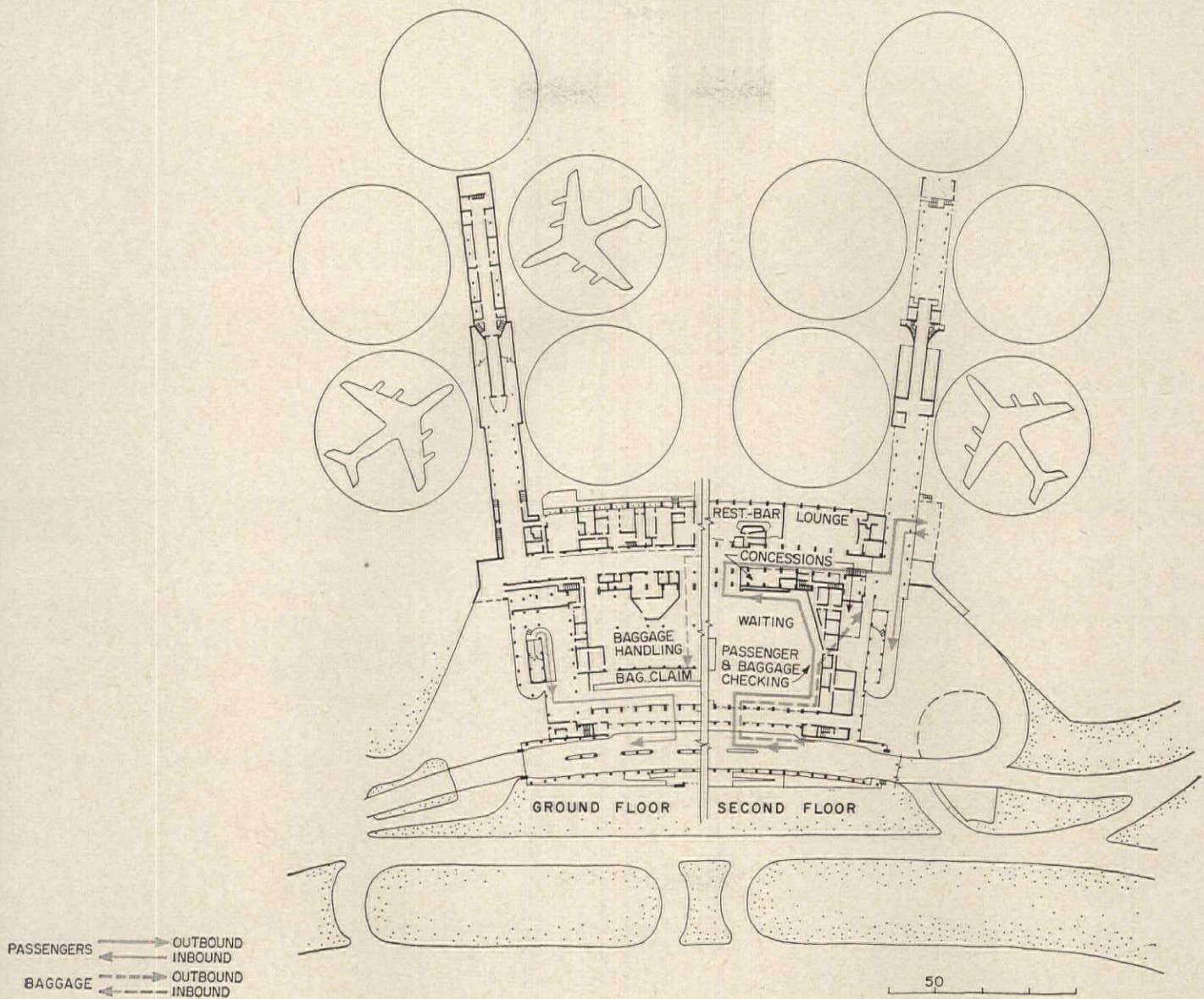
Gilbane Building Co.



8. Eastern Air Lines



The illustrations on this page and the plan give some indication of the great size of the Eastern Air Line Terminal. At the top of the page is a view of the exterior at the front, showing the two-level driveway entering the building. The façade shown here is 420 ft long and encloses three lane driveways on each level. The upper driveway is for outbound passengers, the lower for incoming. The view of the lobby shows, on the right, the main entrance doors. Above these may be seen the automatic flight announcement board. In the center is the seat selector counter, and in the background may be seen the ticket and check-in counters. To the left are the entrances to passenger arcades and concession areas. Overhead may be seen the form of the roof imparted by the 16 reinforced concrete girders which span this space. In the view on the left is a portion of the passenger circulation ramp system. As may be seen, the ramps are placed so that traffic moves along the ramps in the direction of the gate positions or the main building



GENERAL

- two level covered roadway at front of building; upper level for outbound, lower for incoming passengers
- ticketing and baggage checking in large upper level lobby; passengers reach aircraft through fingers in which passageways are ramped down to grade
- incoming passengers reclaim baggage on lower level and proceed directly to ground transportation
- numerous concessions on upper level; space for additional ones on lower level

STRUCTURE

- reinforced concrete frame

MATERIALS

- aluminum and glass curtain walls and granite and limestone solid areas
- interior walls of four different kinds of marble, ceramic tile, wood paneling, movable metal partitions

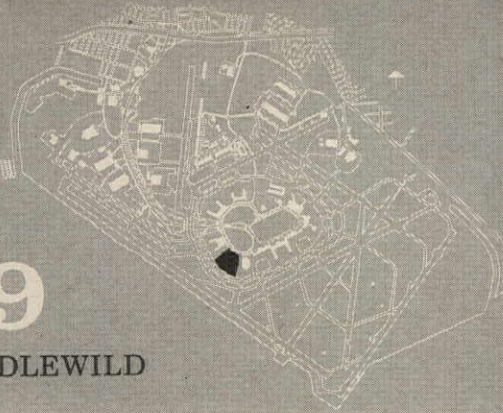
- windows aluminum with glare-reducing glass
- floors terrazzo in public areas; vinyl tile, vinyl asbestos, ceramic tile, or exposed concrete in other areas
- ceilings suspended acoustical metal pans, plaster, or exposed concrete

SYSTEMS

- no special devices for passenger loading
- baggage for outbound passengers placed on conveyors leading directly from ticket counters down to lower level baggage room and loaded on aircraft
- building completely air conditioned and heated
- general lighting of main hall with fluorescent strip fixtures; other areas lighted with various combinations of fluorescent and incandescent
- tower on roof of building for direction of the airline's traffic

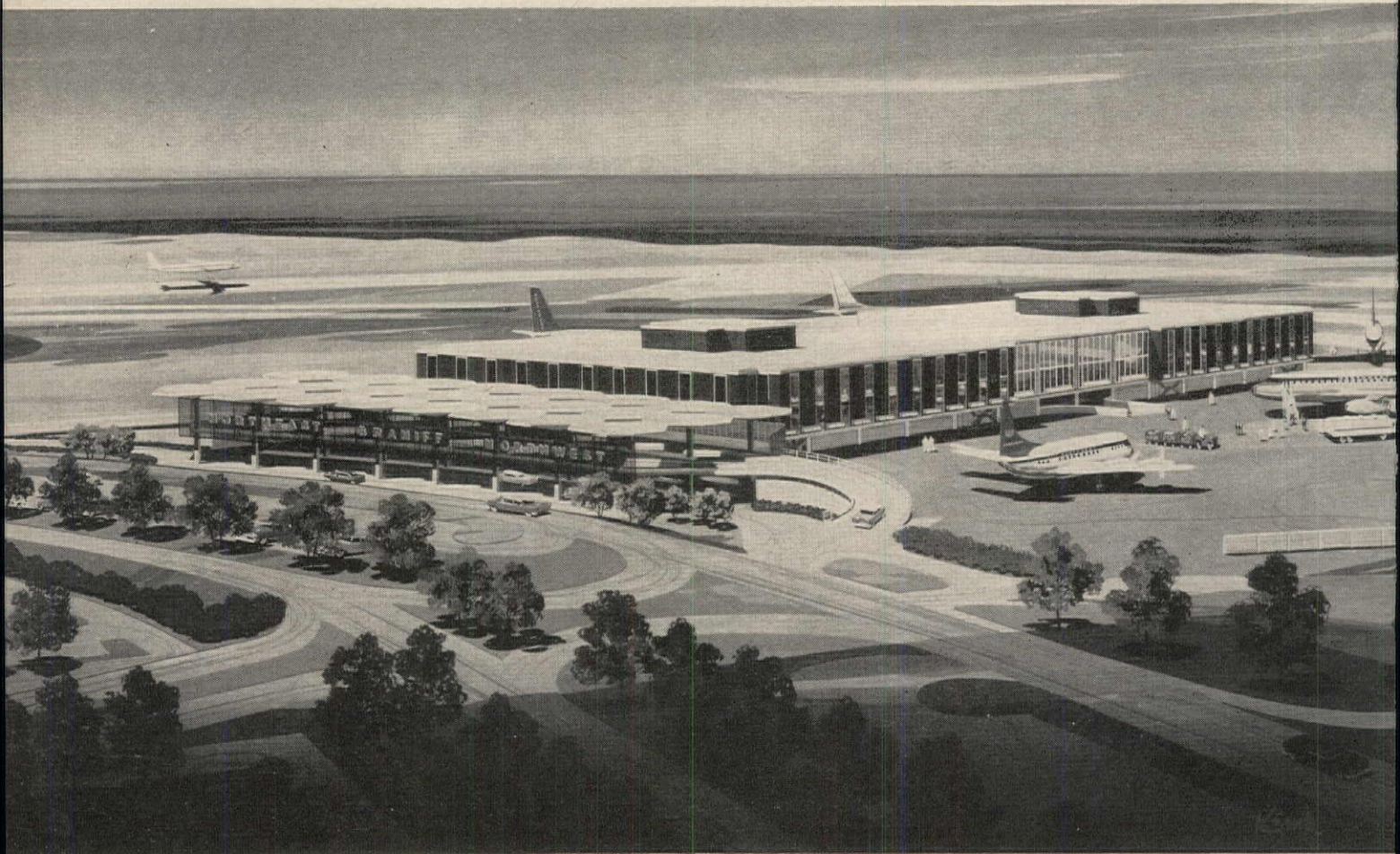
9

IDLEWILD



NORTHWEST, NORTHEAST, BRANIFF

The straightforward, functional design of this terminal permits three airlines to share public spaces, yet maintain separate ticketing and baggage facilities. Ground transportation brings passengers close to ticket counters, from which they may proceed directly to holding lounges



ARCHITECTS & ENGINEERS:
White and Mariani

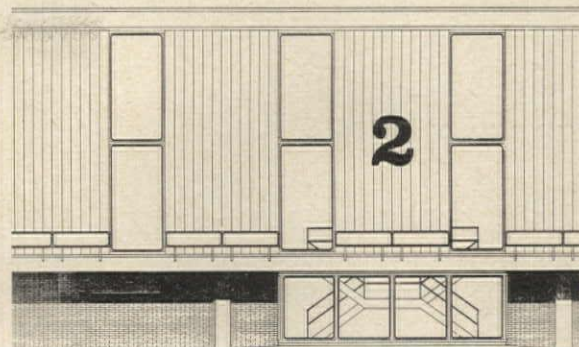
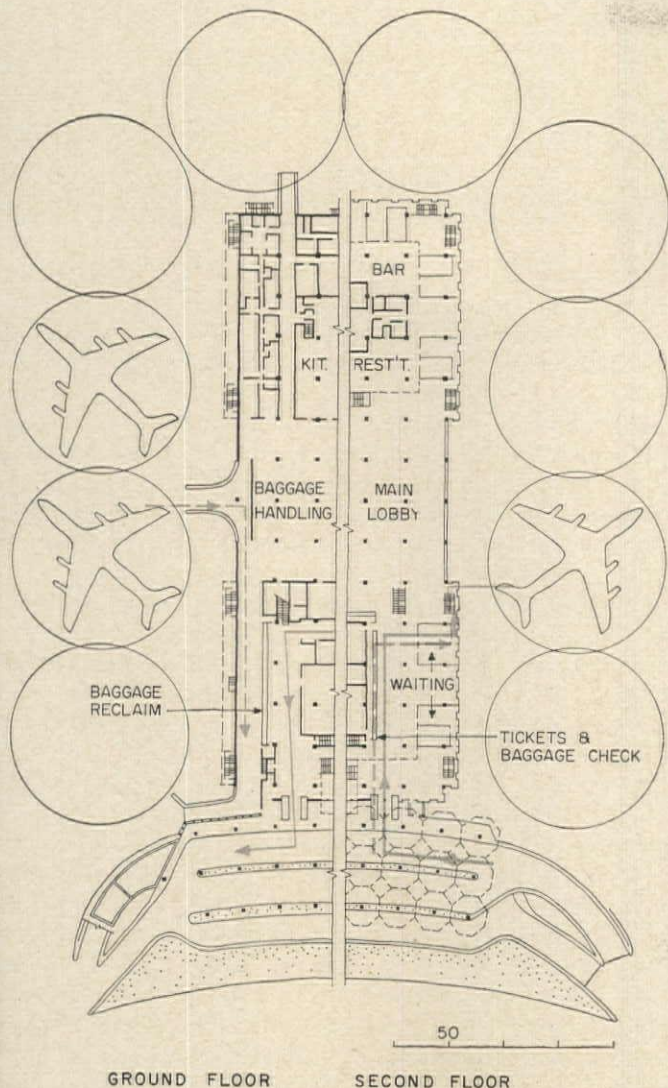
MECHANICAL ENGINEERS:
Office of Ernest F. W. Franck

SOILS CONSULTANTS:
Joseph S. Ward & Associates

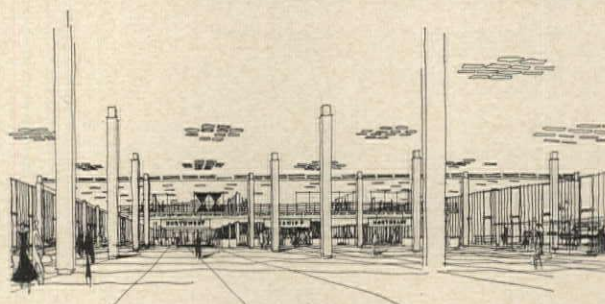
CONTRACTOR:
George A. Fuller Company

The design of this terminal, for three airlines, is based on getting the passenger and the airplane together in the shortest time and with the least number of steps. Yet, the airlines wished to keep construction costs to the minimum consistent with the functions of the terminal. To accomplish these objectives, the architects planned what is essentially a simple rectangular building with ticketing and baggage checking facilities near the front entrance, aircraft gate positions surrounding the passenger area, and the aircraft themselves parked close to the building. Because of these things, passenger circulation is simple, short, and direct.

The plan of the terminal reflects the simplicity of the over-all concepts of the program. Main passenger services are located on the main floor—each airline having its own ticketing and baggage facilities. Departure, lounges and such concessions as newsstands are also on this level for the convenience of the hurried passenger. On the mezzanine are the hold lounges, and the restaurant and other concessions. On the ground level are located most of the operations offices, employe lounge and cafeteria, and baggage handling facilities. Also on this level, but separated from the operations areas, is the passenger baggage reclaim area and the lower street level passenger exit.



Portion of Exterior at Passenger Gate Position



MAIN LOBBY: Ticket Counters From Main Lobby



GENERAL

- two level covered roadway at front of building; outbound passengers enter terminal from second level adjacent to ticket counters; incoming passengers depart from terminal at lower level near the baggage claim area
- aircraft gate positions placed around terminal itself rather than in fingers or satellites
- separate ticketing and baggage facilities, common public spaces for three airlines
- building design allows passengers to view aircraft operations on the ramp outside
- second level loading for outbound passengers, ground floor circulation for incoming
- concessions on main (second) floor

STRUCTURE

- steel columns in 36 ft square bays, with modified concrete flat plate waffle slab domes on three ft module; mezzanine floor slabs cantilevered

MATERIALS

- exterior side and rear walls alternating glass and light-weight block with porcelainized aluminum, inside and out, on second level; first level glazed masonry; front continuous glass wall
- windows fixed gray glass in aluminum frames
- main hall ceiling exposed waffle slab; suspended ceilings in other areas

SYSTEMS

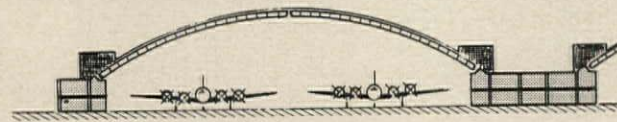
- interior departure lounges with movable, covered passenger walkways to aircraft at selected positions; types of loading devices at other positions to be determined later
- building completely air conditioned and heated
- main lighting fixtures recessed into concrete waffle slab ceiling
- jet fueling, electric power, and other services located in apron at aircraft positions

10

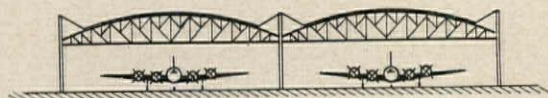
IDLEWILD Architectural Engineering

Engineering at Idlewild has all the diversity that goes into the building of any city, plus some extraordinary solutions peculiar to a gigantic, international airport: hangars that grow to service huge jets, transfer of goods, terminal construction, and environment control

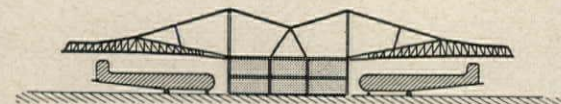
AIRCRAFT MAINTENANCE AND SERVICE FACILITIES



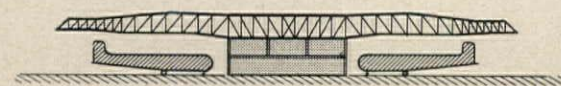
1. Three-hinge steel arch



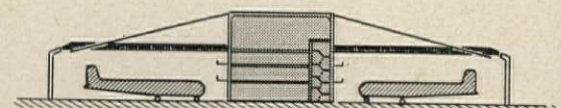
2. Bowstring trusses



3. Cantilevered trusses, steel ties above roof deck



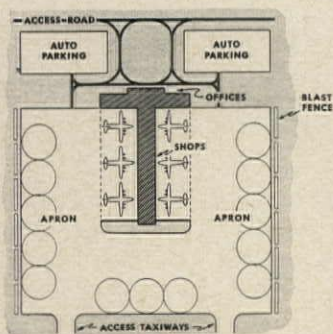
4. Cantilevered trusses, all steel roofed in



5. Cantilevered folded plate, cable supported



6. Cable-hung cantilevered truss or beam



Typical hangar plot plan

Under central coordination of the Port of New York Authority, an international diversity of engineering talent has been brought to bear on a whole new city comprising a single transportation facility of enormous complexity. "More than any other engineering project, New York International Airport typifies the wide activities of the civil engineer: technical and city planning, construction, highway development, hydraulics, irrigation and drainage, sanitation, and structural engineering." This was part of the accolade of Glen W. Holcomb, president of the American Society of Civil Engineers, in presenting that Society's 1961 award to Idlewild as the outstanding civil engineering achievement of the year.

Achievements in other branches of engineering at Idlewild have also been publicized: the Illuminating Engineering Society's award for terminal city lighting, the Haire Airport trophy, the award of the American Institute of Steel Construction, a world-famous heating and refrigeration system, plans for a central fueling system which will provide plane-side hydrant service to each terminal

EVOLUTION OF THE HANGAR

Less spectacular than the terminal buildings, but perhaps typical of the engineering progress notable at Idlewild are the hangars. The evolution of these utility buildings in size and structural ingenuity can be observed in the examples which have been built within the past decade at this single airport.

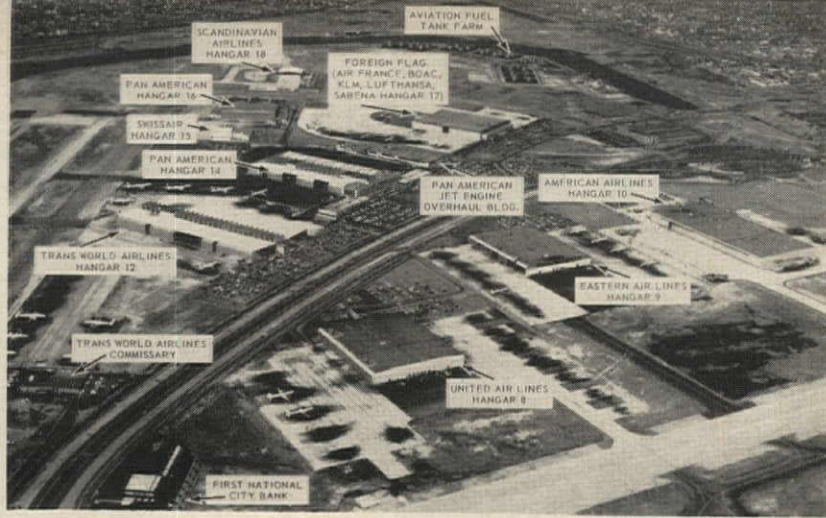
When the Port of New York Authority in 1947 entered into a 50 year lease with the city of New York to develop Idlewild, the city had already constructed two general purpose hangars in the then-conventional steel truss design. The Port of New York Authority immediately built hangars 3, 4, and 5, much larger in scale and designed to handle airplanes of a size which had scarcely been contemplated at that time. These hangars are 300-ft steel arch span structures open on both ends of their 200 ft depth. The large span of these hangars together with their 70-ft height proved realistic in design by subsequent developments. They can accommodate aircraft of any and every size; past, present and projected future.

Even as hangars 3, 4 and 5 were completed, specific requests for hangar space were made by National Air Lines and Lockheed Air Service. National Air Lines constructed a six bay steel bowstring arch structure with each bay having a 40 ft span on the basis of the DC-6 aircraft. Lockheed desiring more flexibility, selected a double-ended cantilever steel design.

The cantilevered hangar has important advantages: columns are eliminated; flat ceiling permits easier heating; lateral expansion of the building is feasible; costs are low.

John M. Kyle, chief engineer of the Port of New York Authority describes development of the cantilever hangar as a search for economy in the construction of larger unobstructed spaces. The firm of Ammann & Whitney collaborated with PNYA engineers in development of the exposed steel cantilever system used in hangar 7 for Lockheed and a roofed-in, cantilevered truss variant used in hangars 8, 9, and 10 for United, Eastern, and American. This system was selected on the basis of studies showing that it was possible to design a structure having a central core which can be used for shop and office space and that a successful cantilever could be developed in conventional steel, re-enforced concrete or prestressed concrete. Actual competitive bidding on these forms established that, in 1954, cantilevered steel construction

Evolution of the hangar, a nearly complete history told at Idlewild, reflects a continuing search for larger and higher, column-free space at lower cost



Interior of steel arch hangar, 300 by 218 ft, style 1 on page opposite, a PNYA design completed in 1950

was 8 per cent less expensive than concrete for the same span and load conditions and 30 to 40 per cent less over-all than a three-barrel steel arch hangar.

It was found that radiant heating, although a very fine operational feature as demonstrated in earlier hangars, raised the unit cost approximately 2.2 per cent. In the hangars built at Idlewild since 1955 most heating systems are hot water serving down-blow unit heaters at doorways with conventional radiation in interior areas.

Using cantilever construction, it is possible to use large individually motorized sliding doors deriving power from overhead rails. A system of horizontally hinged door sections with a hip offset has been developed to take care of any roof movement. For safe operation, doors must be protected by devices which immobilized the mechanism when a man-door is opened or when a moving door comes up against any object in its path. Electric heating cable is used at door channels to prevent accumulation of snow or ice.

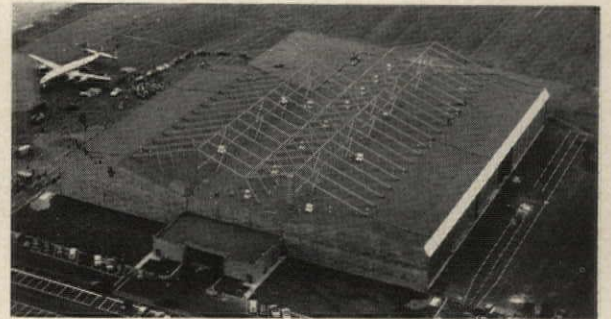
The next advance in hangar construction occurred in 1956 when Ammann & Whitney built a TWA hangar in Kansas City featuring a long-span, folded plate, concrete, suspended roof. This same construction was used for Pan American and TWA at Idlewild in 1958. The TWA roof extends 150 ft on each side of an 80-ft wide anchor structure, and the Pan American roof extends 130 ft each way from an anchor building 100 ft wide. Both allow 50-ft tail clearance at the perimeter. These are cable-supported cantilevers with attachment of cables to the reinforced upper member of anchor walls extending above and across the central core on 30-ft centers. Construction of these hangars has been described in detail in the ARCHITECTURAL RECORD for March 1958 and elsewhere.

Hangar floors are designed for aircraft weighing 300,000 lbs having approximately 90 per cent of the loading concentrated on the main wheels. Roofs are designed for 40 lbs per sq ft vertical downward live loads and 35 lbs per sq ft for uplift loads.

Facilities furnished in a typical hangar are varied. The quantity of space assigned to each function averaged by Ammann & Whitney from eleven hangars is listed in Table 1 with figures for Idlewild's Pan American and TWA hangars added.

TABLE 1. SPACE REQUIREMENTS IN HANGAR BUILDINGS

Space	Average Per Cent of Total Area				
	Under 100,000 SF	100,000-200,000 SF	Approx. 500,000 SF	Pan Am 550,000 SF	TWA 418,000 SF
Hangar area	54.0	60.0	46.5	33.0	64.0
Shops	12.5	8.5	12.0	13.0	4.0
Stores	7.5	7.0	9.0	15.0	6.0
Offices	11.5	11.0	16.0	18.0	14.0
Traffic	4.5	4.0	5.5	7.0	4.0
Rest rooms	2.5	3.0	3.0	3.0	3.0
Food Units	2.5	2.0	2.5	4.0	1.0
Medical	1.0	0.5	1.0	1.0	1.0
Mechanical	2.0	2.0	2.5	3.0	2.5
Electrical	1.0	1.0	1.0	2.0	.5
Laundry	0.5	0.5	0.5	1.0	—
Misc.	0.5	0.5	0.5	—	—



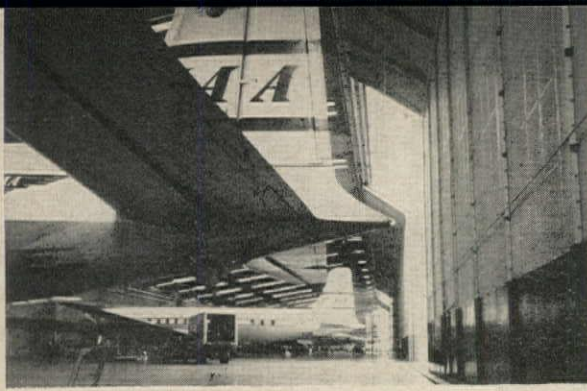
Idlewild's Hangar 7, completed in 1954 for Lockheed is world's first cantilevered hangar, style 3 opposite, a development of PNYA with Ammann & Whitney



Cantilevered trusses soar over 43-ft tail of Boeing 707 in American Airlines' Hangar 10, a Kahn and Jacobs design in style 4, opposite, completed in 1958



Amman & Whitney's prestressed folded plate, style 5, gives 50-ft clearance at TWA's Hangar 12, has less heated space overhead; note cable ties at beam ends



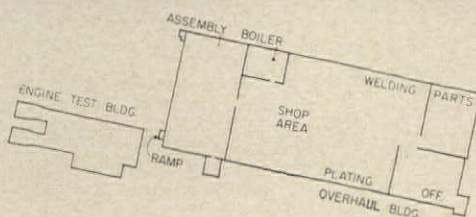
Pan American's Hangar 14 by Churchill, 1958, another cantilevered folded plate of A&W design, style 5, with motorized hipped doors on rails adding 10 ft



Air view of Hangar 14 shows how fin-like anchor walls for cables provide space for cooling towers and boiler



Hangar 17 has cable-supported cantilevered steel beams (above), a variant of style 6, a PNYA design



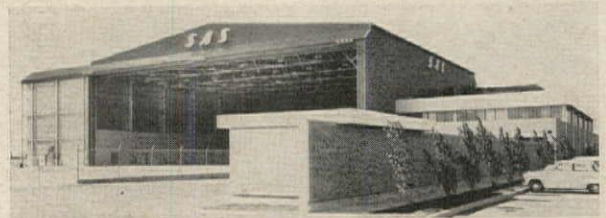
Air view and schematic plan of Pan American jet engine overhaul and testing facilities by Burns & Roe

Still another cantilever type construction is represented in the PNYA design for hangar 17 constructed for foreign flag airlines. This is a cantilever steel beam construction with cable suspension as illustrated in third photo from top at left.

The Boeing 707 requires a space 140 ft wide and 150 ft from front to rear with tail clearance of at least 43 ft in height. PNYA engineers designed hangar 17 with 45 ft tail clearance and aircraft stations 170 ft wide, 180 ft from front to rear including a nose pocket extending into the core area of the hangar. There are three aircraft stations on each side with provisions for additional bays to be built as needed in the future. Cable suspension enabled engineers to use cantilevered girders only 5 ft deep and 3 ft wide for the necessary span of 158 ft. The usual uncabled design of a cantilever truss would have meant a unit 23 ft deep at midpoint. Cable suspension eliminated the dead space inherent with deep trusses and was appreciably less costly. Roof framing for hangar 17 cost about \$4.50 per sq ft. A comparable through-truss cantilever roof would have cost about \$7.50 per sq ft.

Ammann & Whitney in general discussions of hangar construction have pointed out that folded plate concrete cantilevers without strand supports at the outer end are usually limited to bay depths of 130 ft with the over-all depths of the folded plate varying from 3 ft at the outer end to 12 ft at the center core. This span can be increased, but the average unit cost increases quite rapidly with the further increase in span.

The unit cost of cantilever hangar construction has been increasing considerably with the growing length of new aircraft. Accordingly, vault type hangars, variants of the original hinged steel arch, offer considerable promise for jet aircraft hangars. A multiple of vault bays, each accommodating a single large plane, would permit a more flexible and accessible arrangement of either lean-to buildings or central core for use as shop-storage-office areas. The upward sweep of the vaults needed for structural economy furnishes space capable of receiving any tail height likely to be used on new aircraft.



Not all new hangars are huge. SAS' blue aluminum shed and brick lean-to by Kahn and Jacobs is adequate

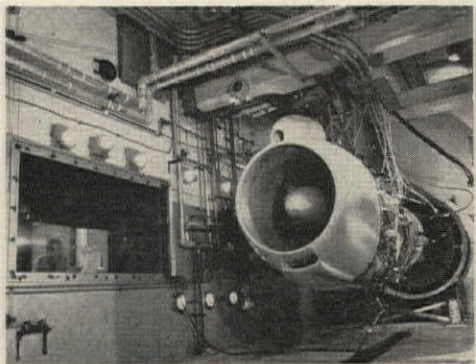
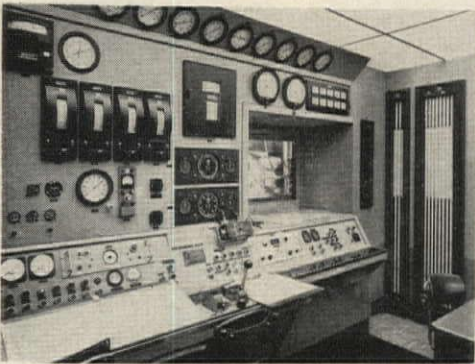
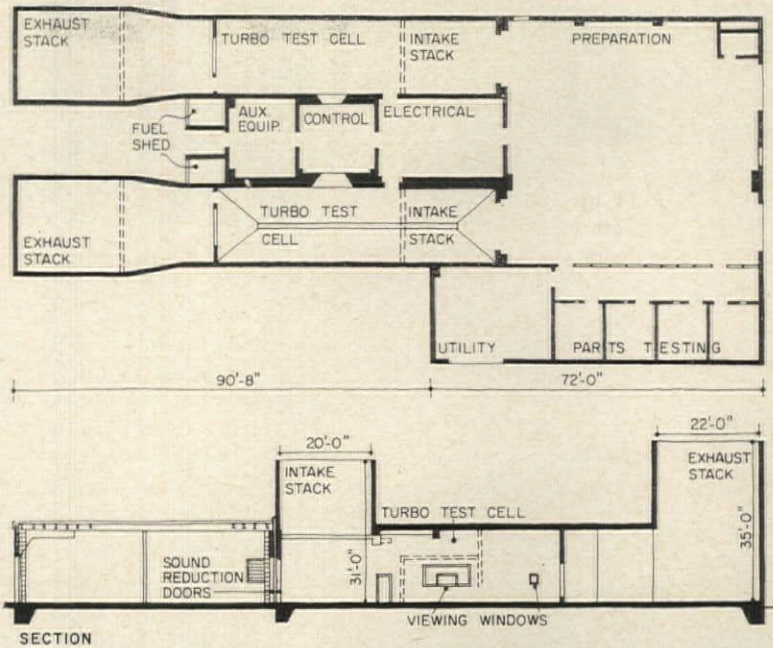
JET ENGINE OVERHAUL AND TESTING FACILITIES

A specialized complex within the hangar area is Pan American's engine overhaul building and test facility, designed by Burns & Roe. This group consists of two buildings, the larger of which is a fully equipped facility for dismantling jet engines, testing, cleaning and repairing components, and reassembling. The smaller building houses two cells for testing the completed engines.

The larger building is 332 by 162 ft arranged with disassembly shops near ramp entries on the East side. Other areas in a work flow pattern include cleaning, plating, machining, marshalling and reassembly arranged so that the final assembly area is near a ramp exit to the engine testing building. Personnel entry at the North end opens into a foyer adjacent to office space. Mechanics and shop employes by-pass offices through a corridor leading to locker areas. A second story over 62 ft of the North end of the building houses a lunch room, conference room, additional lockers and small parts storage. Boiler room on the first floor adjoins an accessory and drives test area acoustically isolated by concrete walls and acoustical surfacing.

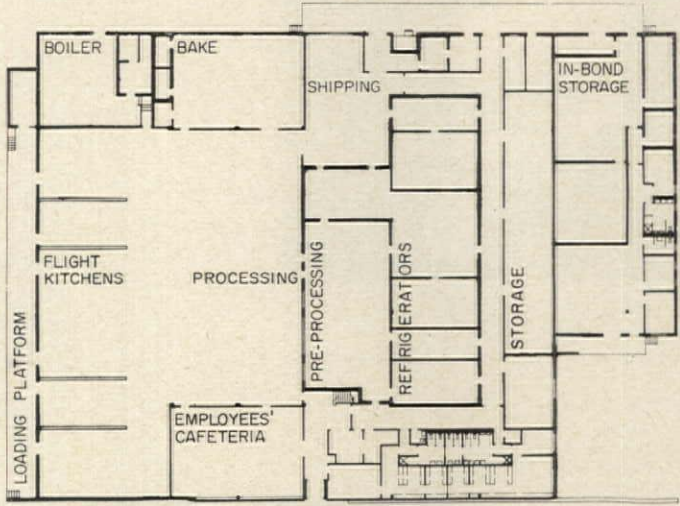
Burns and Roe faced a more demanding problem in the engine testing facility. Although jet engines are fully assembled with mufflers, the noise of a jet engine operating in an enclosure is unendurable. Test cells are therefore of heavy concrete construction with special viewing windows through which an operator in the control room between cells can observe not only the instruments recording sound, fuel consumption, turbine rotation, and combustion temperatures, but can also see the operation.

Combustion air supply and exhaust are accomplished through stacks 20 and 22 feet square respectively. Acoustical treatment in the stacks, consisting of porous slat grating illustrated at right below, keeps engine noise within tolerable limits outside the building. Horizontal rolling steel doors seal off stacks when not in use. Access doors to the test chamber are sound proof.



AIRCRAFT FOOD SUPPLY

An adjunct to the servicing and maintenance of aircraft is preparation of food for service to passengers aloft. TWA maintains a commissary building exclusively for this service. Another larger facility is the Brass Rail commissary located in the cargo area and providing kitchen, storage, packaging, and loading areas sufficient not only for plane services but also providing basic preparation of foods for delivery to kitchens at the many Brass Rail concessions at the airport. Kitchen facilities in the commissary building are located near truck loading platforms. Food is prepared in serving trays and placed in insulated containers for delivery by truck to aircraft. Bonded liquor storage space is isolated from the main building by separate entrances and loading platforms. Louis Abramson, A.I.A., designed the building.



11

IDLEWILD
Architectural Engineering

AIR CARGO FACILITIES

The nine-building air cargo center at Idlewild, soon to have two more buildings adding 126,000 sq ft of floor, handles the international transfer of millions of pounds of goods on passenger and cargo planes of about thirty tenant airlines, each having separate space and access



Two-story cargo service building has warehousing and customs inspection space on first floor and office space on second floor for various cargo forwarding agencies



Clearances in one-story cargo buildings with 12.5-ft ceilings, 8 by 10-ft doors are designed for lift trucks

Five buildings totaling 307,000 sq ft on the 80-acre site of International Cargo Terminal were placed under contract in July 1955 and completed in mid-1956 at a cost of 5½ million dollars. Two new one-story buildings will add 126,000 sq ft more general cargo space by mid-1962. These, with present auxiliaries, will total 11 buildings.

Prelude to actual architectural and engineering design, said John P. Veerling, chief of the Aviation Planning Division, PNYA, describing the cargo center to a terminal facilities planning group, was development of a basic functional diagram indicating the inter-relationships of cargo and passenger terminals, runways, taxiways, hangars and the urban area that the airport serves. From these broad relationships, the airport master plan located the air cargo terminal on the peripheral taxiway system with direct vehicular access from major highways and, via the peripheral service road, to the several unit terminals. This last condition is significant because the major portion of air cargo today is carried on passenger or combination-type aircraft, rather than specialized air freight carriers.

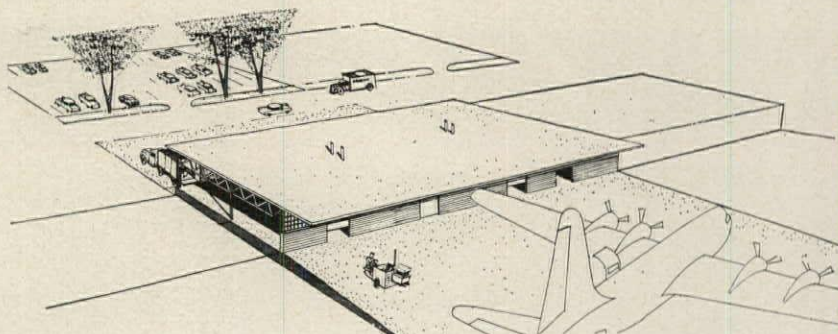
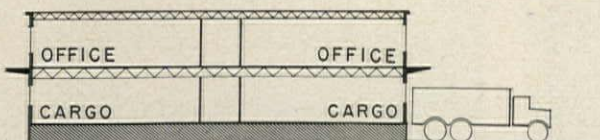
In the cargo buildings themselves, each of 27 tenants desires an area for exclusive use for parking aircraft, truck backup, and automobile parking for employes and visitors. In addition, operations at Idlewild demand federal inspection headquarters (Public Health, Immigration, Customs and the Department of Agriculture), offices for brokers and forwarders, and in-bond storage warehousing.

The basic site plan contains four airline cargo buildings and one cargo service building. The service building is a two-story structure with in-bond storage and warehousing on the ground floor and brokers' offices and federal inspection offices on the second floor. Each of the one-story cargo buildings is divisible in 150-ft modules, each with parking area for 30 cars and aircraft parking pavement sufficient for one aircraft of current configuration. Interior columns are limited to one row effecting a 40-ft span in 30-ft bays. The interior building clearance is 12.5 ft based on equipment clearance requirements and maximum truck heights.

A point of interest is the floor level, 3½ ft above grade with flat ramping down to the aircraft apron. With this cross-section, cargo can be rolled from truck to building to aircraft and vice-versa with no abrupt vertical change in grade.

Desirability of an unloading dock for the full length of the cargo building was considered, but analysis showed that lateral movement on such a dock would be negligible inasmuch as each of the tenants is operationally a separate entity.

(Below) Floor of cargo service building is 3.5 ft above grade for truck access on both sides, while (right) floor level on plane apron side of cargo buildings slopes gently to apron grade for lift trucks



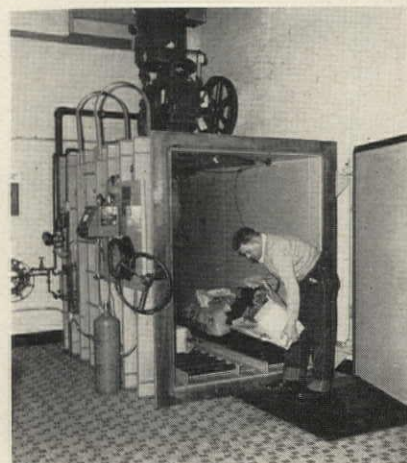


The buildings are steel frame structures with brick masonry walls and built-up roofing over insulation and metal decking on open web steel joists. Ground floors are designed to 250 lbs per sq ft. The cargo doors are manually operated, wooden, overhead types; the windows, metal security sash.

The Port of New York Authority, as landlord, provides a basic building shell with block walls between tenants, a basic toilet facility for each tenant, and general heating and lighting. All other interior work—partitions, ceiling, differential lighting and so on—is performed by the individual tenant.

The Port of New York Authority would have liked at the outset, said Mr. Veerling, to incorporate into this cargo terminal facility, mechanical devices which would permit direct loading between cargo building floor and airplane. However, neither predictability of size and floor levels of aircraft nor experience with available equipment seemed to warrant a mechanical device which would represent an annual rental of approximately \$15,000.

Pan American World Airways announced in June of this year that they plan to put into use a new palletized cargo loading system called AirPak at a cost of about \$500,000 per plane for ten all-cargo DC-7Fs.



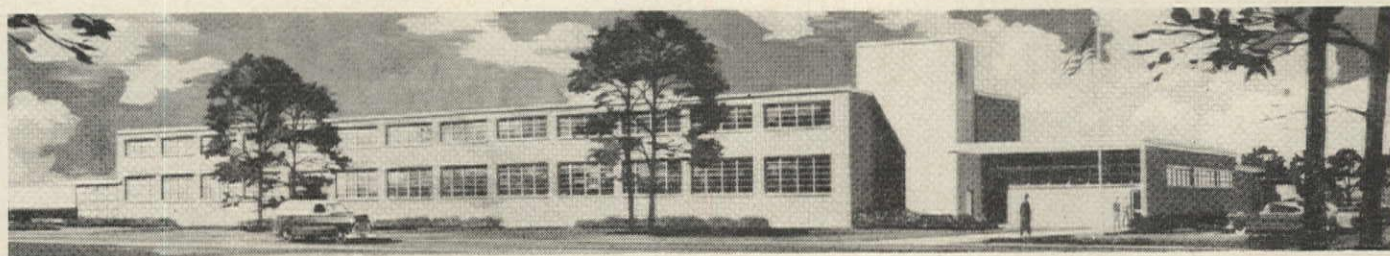
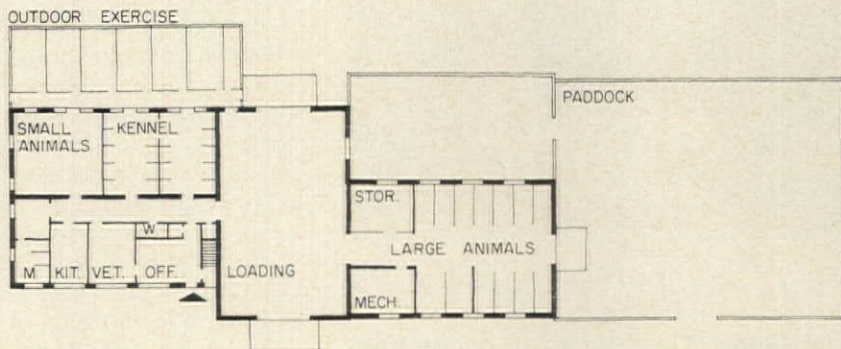
USDA insists on plant quarantine fumigation tank for imported plants



Second floor of cargo service building provides clerical space for customs and cargo forwarding routine

ANIMAL HAVEN

A.S.P.C.A. Animalport designed by the office of Alfred Easton Poor, provides a central, enclosed, unloading area, facilities for housing, caging, feeding, and exercising small animals on one side and large animals on the other. On the second floor is an apartment—the only residential space at Idlewild—where a veterinary doctor and his wife live



AIRPORT MAIL FACILITY

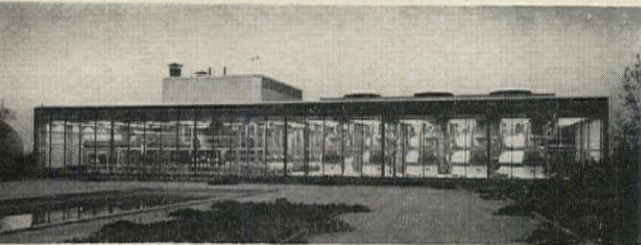
A 56,000 sq ft Airport Mail Facility (Cort, Glickman, Goldsmith, and Leinhardt) processes air mail in the cargo center and provides regular U.S. Post Office service for air travelers and employees

12

IDLEWILD *Architectural Engineering*

TECHNICAL HIGHLIGHTS

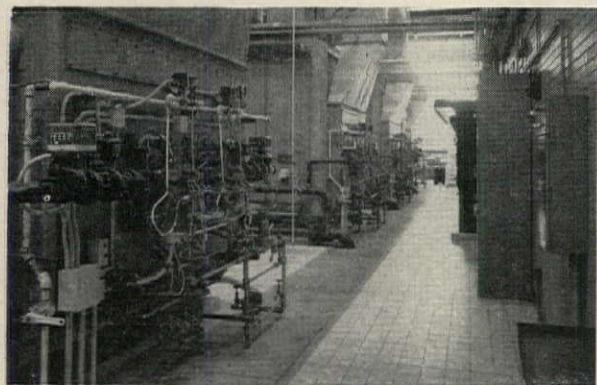
Engineering control of the Idlewild environment, thermal, acoustical, and visual, includes some large and handsome accomplishments: a 655-acre heating and cooling system, the world's largest air door, acoustical treatment vs. the jets, a 4-acre cartwheel, a 3000-yard concrete bird



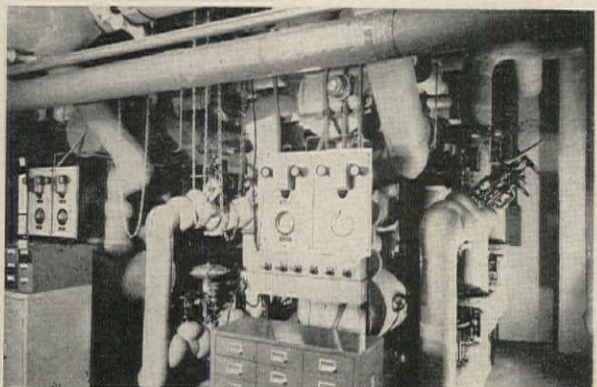
Central heating and refrigeration plant, showcase for a mechanical system



Rows of white absorption chillers with their color-coded piping taking their reactivating energy from high temperature water



LaMont-type high temperature water boilers which supply water at 400 F to all airline terminals where it is converted to normal heating temperatures



Heat exchangers and controls supplant boilers for low temperature heating systems in terminal buildings

Size, number, and complexity, rather than innovation, characterize most of the technical accomplishments at Idlewild. Hundreds of miles of pipe and duct, interlocking control systems, untold design hours devoted to systems for heating, cooling, fueling, lighting, communications and traffic control; these have helped to create at Idlewild a veritable city whose 30,000 regular inhabitants are transported in and out of the area each day to serve the goings and comings of an even larger traveling population.

CENTRAL HEATING AND COOLING SYSTEM

Centrally located with its glass façade overlooking the fountain-decked mall leading to the control tower is the central heating and refrigeration plant. This Skidmore, Owings and Merrill design is an exhibition hall for the rows of huge white absorption chillers and darkly colored high temperature water boilers with their pastel forest of color-coded piping and clean tile surroundings. The building serves the district heating and cooling system designed by Seelye, Stevenson, Value & Knecht. This is the world's largest application of high temperature water as an energy source for both heating and absorption cooling.

The distribution piping transports hot water at 400 F and 250 psi for heating and chilled water at 45 F for cooling to each terminal building. The original plant consisted of four La Mont type boilers with a total capacity of 160 million btu per hr and nine absorption refrigerating units of 750 tons capacity each for cooling. Two additional boilers and four new absorption units will add capacity to handle the new terminals for TWA, Northeast, and the proposed multi-airline terminal.

Central heating and cooling makes it possible for terminal buildings to eliminate boiler rooms, fuel storage, cooling towers and other space-consuming appurtenances of environment control. At each terminal a heat exchange arrangement, such as the Pan American unit shown at left below, generates low temperature hot water which is used in conventional systems for heating the individual buildings.

Chilled water at 45 F from the central system is piped directly to coils in fan rooms at convenient locations in each building and returned to the central system at 55 F.

The underground distribution system was installed in reclaimed land where the water table is about 4 to 6 ft below grade. Therefore, the six miles of hot water piping had to be installed in a pulverized natural asphalt insulation which was poured around the pipe in the open trenches and precured before back filling. Chilled water mains run adjacent to hot water mains separated by about 2 ft. These are insulated by expanded plastic.

Fuel for the boilers is stored in a 5000 barrel spherical tank above grade adjacent to the central building. Three cooling towers serve the refrigeration system. Automatic valves in the hot and chilled water lines maintain constant chilled water temperature and balance the load automatically among the absorption machines.

An interesting feature of the plant, says Charles Broder, PNYA mechanical engineer, is the valve pit directly in front of the building. Supply and return mains go into the pit through pipe trenches. Four distribution zones are fed from these mains. By installing zone controls outside the plant building, the cost of enlarging the building for this additional equipment was saved.

AIRPLANE COOLING

Most of the airlines cool parked planes by conventional refrigeration trucks which are run up to the plane. The Pan American terminal has a system of underground ducting from four 60-ton refrigeration machines, separate from the central cooling system, serving hydrant stations on the apron from which flexible duct connections are made to parked planes.

AIR DOOR AND ACOUSTICS

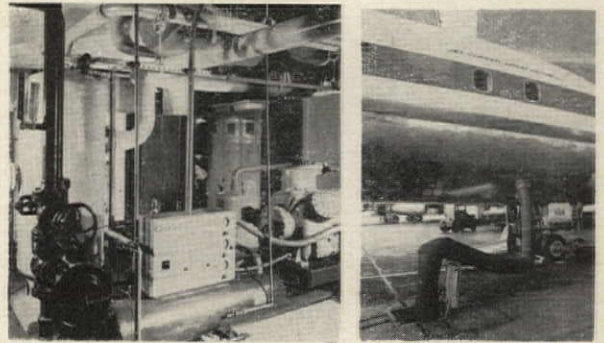
The Pan American terminal has the world's largest air curtain door at the inbound traffic entrance. The opening is 89 by 10 ft. Six 75-hp fans on the roof of the terminal move 600,000 cfm of recirculated air downward through a glass plenum which forms the front wall over the doorway. Bottom of the plenum is an 8-ft wide, full length adjustable louver capable of directing the air stream at a favorable outward angle according to wind pressure from the outside. The air stream velocity can be adjusted to three speeds. At its highest velocity and widest outward angle, the air stream can withstand the inward pressure of a 20 mile an hour breeze. The air curtain enters a wide floor grille which is ducted around the ends of the door for return to the fan room. The air door was designed by architects, Tippetts, Abbott-McCarthy, & Stratton and Ives, Turano and Gardner with Sulzer Bros., Inc.

The air door in combination with the 114-ft overhang of the elliptical roof of Pan American terminal under which jet planes approach loading positions created an acoustical problem. In addition to its esthetic qualities and practical utility as a shelter, it presents a large flat underside which could be a sounding board for the noise of jets.

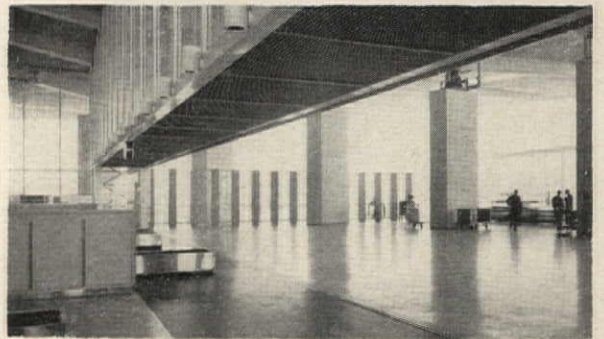
Lewis S. Goodfriend and Associates, consulting engineers in acoustics, recommended treatment for the building. Their analysis of scale models showed the following to be of importance: (1) Acoustical material on the underside of the canopy; (2) thickness and mounting of glass walls; (3) shielding for the air curtain door; (4) noise control at loading gates. (5) Noise control for the air curtain system and for air conditioning equipment.

The architects desired a monolithic appearance for the underside of the canopy and a transparent inner structure with as little opaque wall as possible. Treatment for the underside of the canopy required a material that was incombustible, resistant to moisture, could be cast in place at reasonable cost, and was acoustically similar to foamed glass. A manufacturer (Pittsburgh Corning) had been experimenting with acoustical cellular glass. They supplied about four acres of their new product in 3-in. thick, 18 by 24-in. blocks on which a non-bridging paint presents a monolithic appearance.

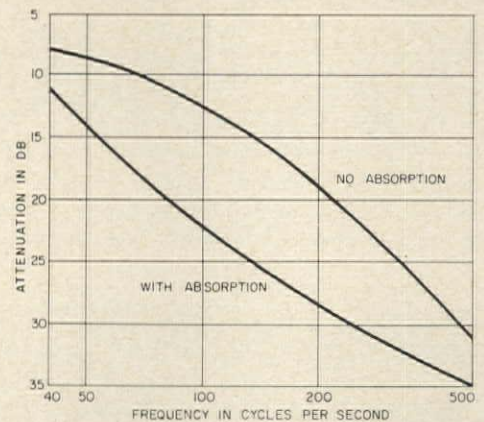
The consultant's studies showed that sound control screens should be placed at each end of the air door, full height to the roof, and ex-



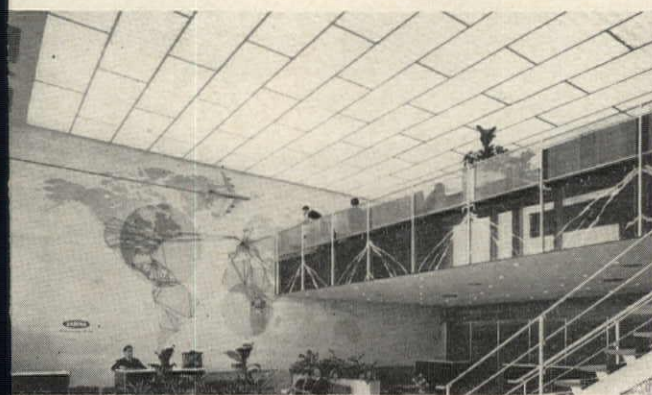
Four 60-ton coolers (left) at Pan Am terminal supply chilled air through underground ducts to apron hydrants where flexible ducts (right) connect to planes



World's largest air door at Pan American terminal



Effect of canopy absorption on air door attenuation



Lighting and air outlet arrangements of airline offices and lounges in International Arrival building are conventional but vary with tenant tastes. Three examples shown are, left to right, Sabena, of Belgium, El Al of Israel, and Swissair





Framing for cantilevered canopy over PAA car ramp



Laying steel on forms for a poured shell at TWA



Leap-frogging counterforms creep up steep TWA sides as pourers lead and finishers follow, a timing tour de force to make a monolithic shell in one pour



Transparent tunnel for passengers is also pressurized fresh air supply for satellite to keep jet fumes out



A thing of beauty is an underground pumping system

tending 54 ft toward the ramp. The architects, however, demurred, so a 10-ft screen, minimum to shield the door against cross winds, was used. This, says Lewis Goodfriend, is a serious acoustical compromise which permits sound levels to exceed design (NC-55 at the information desks vs. 65 outside) but only at brief peaks during taxi-out conditions. Personnel have no difficulty with speech interference at the two information desks or at baggage check-in counters.

All other Goodfriend acoustical recommendations were accepted by architects and owners. These include selection of 1/2-in. plate glass resiliently mounted for wall sections; vestibules with considerable acoustic treatment at gate positions; treatment of fan systems with glass fiber duct lining, careful entry and turning arrangements, etc.

TWO CONCRETE SHELLS

The variety of structural techniques at Idlewild comprises an encyclopedia of method from the conventional to the most unusual. Contrasting examples of the unusual are the cantilevered carousel roof of the Pan American building and the poured concrete shell of TWA.

Over four acres in area, framing of the Pan American roof is like a huge elliptical wheel with 32 spokes. Spokes are prestressed steel beams centrally anchored to tension columns and supported at about mid-point by a series of piers. A stanchion mounted over each pier provides bridging for six 2 1/2-in. cables attached at the hub and at the outer end of each beam, 114 ft beyond the piers. Welded wire fabric reinforces a 4 in. thick lightweight concrete slab between the radial girders to achieve a concrete canopy designed for a snow load of 40 psf. Acoustical glass block was laid on formwork hung from girders before pouring began and formed the surface of the ceiling.

The roof of the TWA terminal consists of four arched shells arranged symmetrically about a North-South axis. Each shell tapers downward on either side to buttresses at grade level. Shells meet along the axis in a junction which tapers downward tying all four together.

Resident architect for Eero Saarinen is Ralph W. Yeakel, who shepherded this complex structure through raising of concrete forms and around-the-clock pouring. He describes how the initial concept of the building shape was translated through a series of models modified by structural analysis. Architectural plans were drawn concurrently with Ammann & Whitney's structural design—an unusual trial and error approach which proved practical because of the many unknowns.

The next task confronting the architect was to interpret the design for execution by the construction contractor, Grove, Shepherd, Wilson & Kruge. The problem of forming 3200 cu yds of concrete, through continuous and simultaneous pourings, into four perfectly balanced monolithic roof sections 60 ft above ground, free of cracks, shrinkage stresses, and construction joints was monumental. A complete manual was prepared covering every detail from forming to finishing. Time, the all important factor, was pinpointed with unforgiving tolerances.

A jungle of scaffolding was built, with 1800 columns of tubular steel to support the face roof form. Work stations were numbered and, when pouring began, 1-yd buckets of concrete were coded to assure delivery to their proper area. Inspection crews at ground level observed a system of hanging plumbs under the roof. The slightest movement in formwork was radioed to a central control station so that the next bucket load of concrete could be directed to a compensating point.

Concrete mixes for shell and buttresses were varied in density and setting time according to a precise schedule, but all were required to produce an over-all uniform appearance. Haller Testing Laboratory and Master Builders Company assisted in the design of mixes.

Five reflecting pools and four fountain pools enhance the terminal plaza at Idlewild. Largest of these, Liberty Fountain, is 200 ft in diameter. It has a 600-gpm center jet 70 ft high and eight satellite jets 30 ft high, all surrounded by a 10-ft curtain of water 75 ft in diameter from 860 jets discharging 1700 gpm. Recirculating pumps vary the discharge of each unit by a cam-controlled program. Lighting in three colors is synchronized with pump operation.

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IDLEWILD
Architectural Engineering

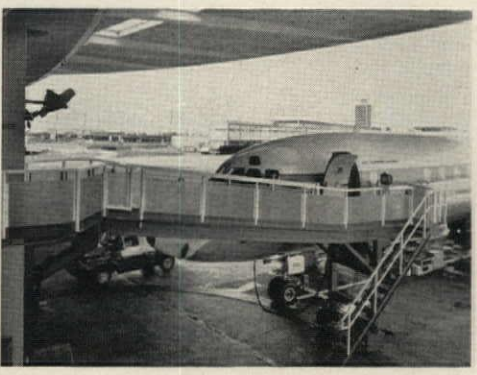
PASSENGERS AND BAGGAGE

To get six million passengers a year and all their baggage on and off planes and through customs without loss or damage or exposure to weather requires some large spaces and ingenious devices: telescopic corridors from lounge to plane, conveyor belts that think, acres of customs counters



PASSENGER LOADING

(Left) Truck-motorized stairways for fair-weather passengers on BOAC
(Right) Self-propelled, telescoping corridors to and from lounge nuzzle up to UAL jets



(Left) PAA's canopy-protected ramps swing on radius to plane position
(Right) AAL has short, enclosed, telescoping ramp with weather seal at plane door



BAGGAGE HANDLING

(Left) Check-in counter at PAA where baggage is weighed, then belt-conveyed to lower level for loading
(Right) Supermarket counters and carts for customs inspection area



(Left) Hand delivery from trucks to sloped metal pick-up counter
(Right) Belt delivery to pick-up area with automatic kicker that spaces bags on sloped counter. Visible at far end, kicker mechanism proceeds along belted track as bags are delivered

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IDLEWILD

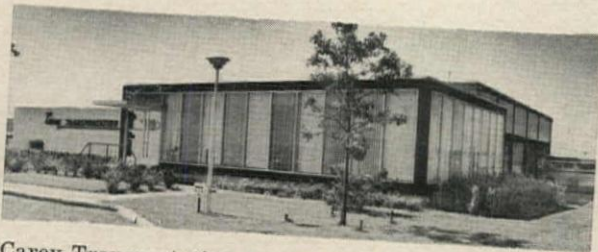


AUXILIARY BUILDINGS

The major buildings at Idlewild are, of course, the ones which cater to the passengers, the cargo, and the aircraft. However, no picture of Idlewild can be complete if it does not include the service and other buildings that are integral parts of the over-all planning concept.



First National City Bank Building (Architects: Skidmore, Owings & Merrill)—a complete, drive-in bank with all of the facilities needed by Idlewild personnel



Carey Transportation Bus Garage (Architects: Brody, Hopf & Adler)—space for garaging and maintenance of Idlewild buses and for transportation office areas



Gulf Service Station (Architect: Edward D. Stone)—complete automobile service in a building designed to complement Idlewild terminals and master plan



Seaboard & Western Office Building (Architects: Kahn and Jacobs)—headquarters for an airline company, leased from the Port of New York Authority

There is a great variety of auxiliary buildings at Idlewild. Some are vital to the functioning of the complex as an airport. Others are here simply because space was available that was not needed for aeronautical purposes, but was perfectly adaptable for income-producing properties. Buildings of the first type contribute directly to the feasibility of Idlewild as an airport, the second type to its economic feasibility.

Among the buildings which are part of the master functional plan are the following: Central Telephone Building (Architects: Voorhees, Walker, Smith, Haines)—under construction at present time, the building will house complete equipment for handling the 7500 telephones and 2 million calls a week at Idlewild. The First National City Bank Building (Architects: Skidmore, Owings & Merrill) provides a complete banking service for the businesses and employees. International Hotel (Architect: William Tabler) has 520 rooms and complete facilities for conventions and other occasions. Several other hotels are located near the airport property. The Carey Transportation Bus Garage (Architects: Brody, Hopf & Adler) provides office space and required facilities for garaging and maintaining the buses used for transportation between the buildings of Terminal City and to and from the airport.

Several buildings at Idlewild were designed by the professional staff of the Port Authority. Among these is the Port Authority Office and Grounds Maintenance Building. This building provides space for repair and maintenance of grounds vehicles, and such shops as electrical, sheet metal, and plumbing. Catholic, Protestant, and Jewish chapels have been programmed for the airport. These are in the preliminary design stage in the offices of the architects: George J. Sole (Catholic), Edgar Tafel (Protestant) and Block and Hesse (Jewish). The centrally located Gulf Service Station (Architect: Edward D. Stone) serves the public and the operating personnel of the airport. The Medical Building (Architect: Joseph Schafran) contains complete facilities for the medical practice of three doctors. In addition, it has been designed for handling special testing and treatment required by the airlines or their passengers. Other structures which are part of the Idlewild operation include the Water Pumping Station and the Fuel Storage facilities. In addition to the services occupying separate buildings, a number of smaller facilities are located in the International Arrival Building and the individual terminals. Among these are such things as newsstands, restaurants, a dentist's office, and many others.

In order to make Idlewild economically feasible as an airport operation, much of the area not used for aeronautical or related purposes has been developed as leased office building and industrial properties. Among these properties are the Seaboard & Western Office Building (Architects: Kahn & Jacobs) and the Federal Office Building (Architects: Edwards & Hjorth). Several industrial plants were designed and constructed by the Port Authority. Two existing buildings are to be removed in the near future: the temporary passenger terminal which will be replaced by the new Multi-Airline Terminal and the Catholic Chapel to be torn down when the new chapel has been built.

ARCHITECTURAL RECORD articles on airport planning, published in the past two years, include: Jet Airports—Passenger Terminal Building Design Principles and A New Airport for Jets—Dulles International Airport, both in March 1960; Memphis Airport, April 1960; Four Airports, September 1960. The majority of the photographs appearing in the Idlewild story are by Joseph W. Molitor or staff photographers, Port of New York Authority; others by David Hirsch, Felix Gilbert, Joseph Knight, and Ezra Stoller

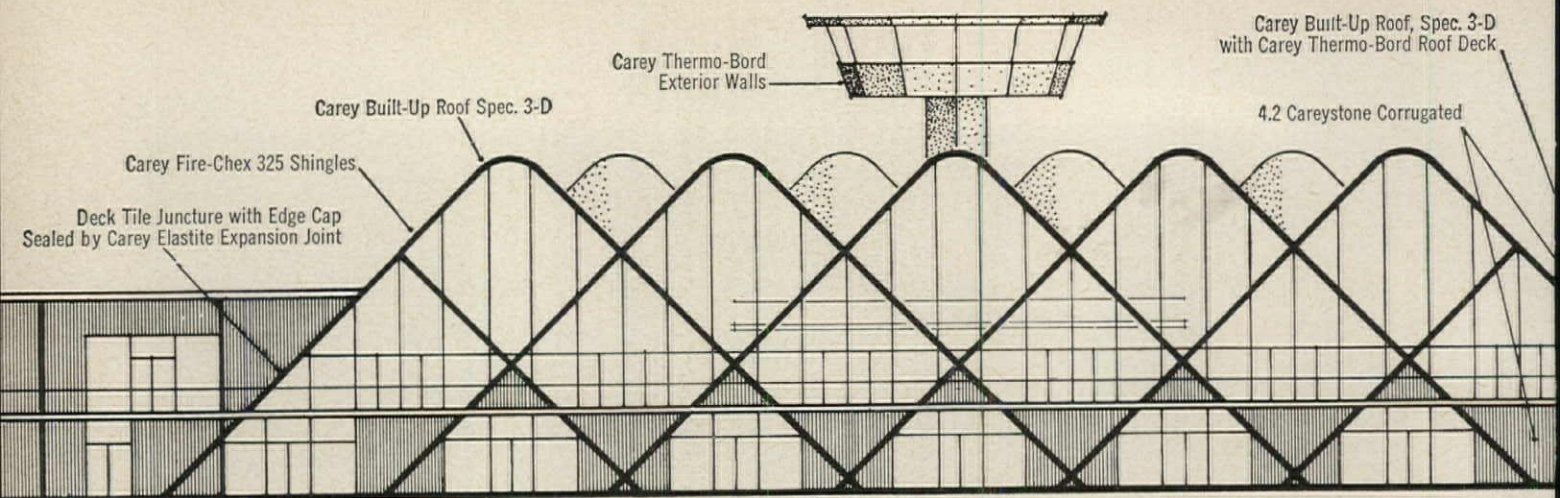


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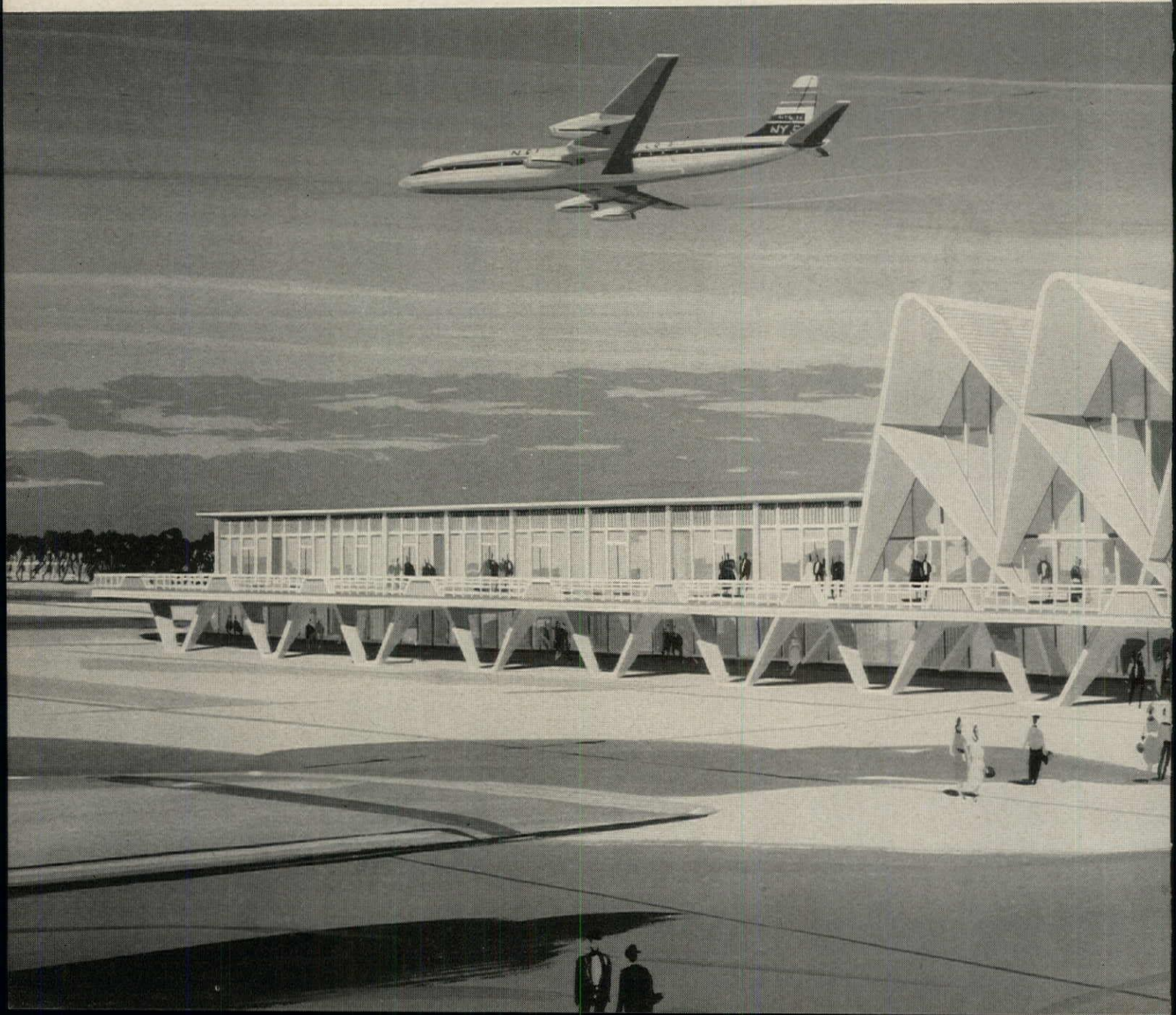
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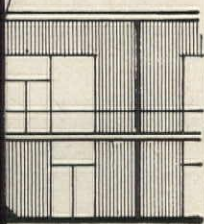


Kahn & Jacobs, a.i.a., design an air terminal

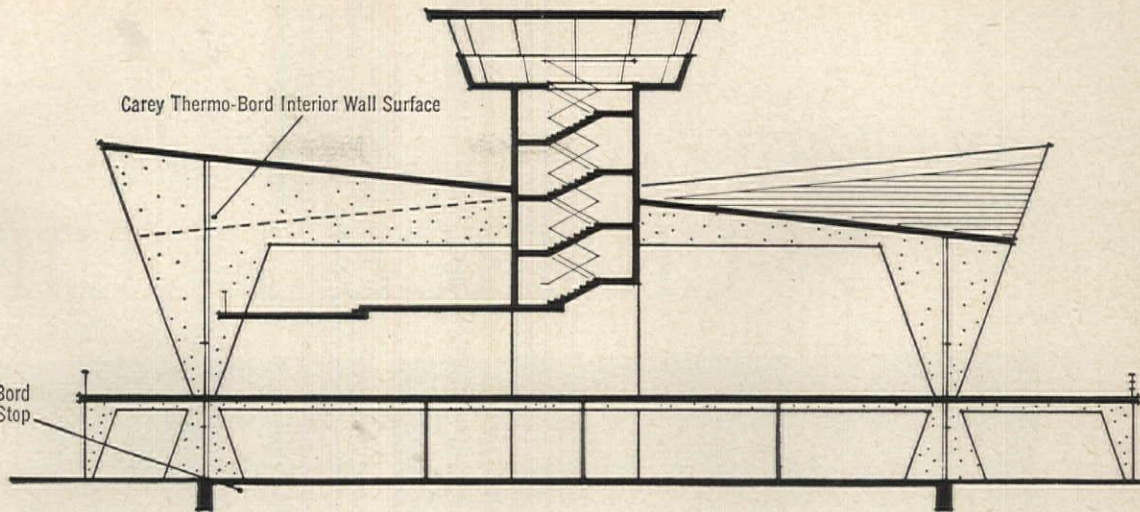
Observers familiar with air traffic expansion predict that more than 2000 jet transports, each carrying approximately 200 passengers, will fill the airways by the end of the decade of the sixties. To these transport flights must be added a growing number of private passenger planes which even today total more than 75,000. These figures do not take into account the non-jet flights which airlines are expanding to serve an increasing number of communities.



Ceramic Tile Deck
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view of this prospect of burgeoning passenger traffic,
ough airports which are barely adequate for present-
y needs, the architectural firm Kahn & Jacobs, A.I.A.,
New York City designed their prototype air terminal
ler a commission from Carey.

he details of this Kahn & Jacobs project suggest uses
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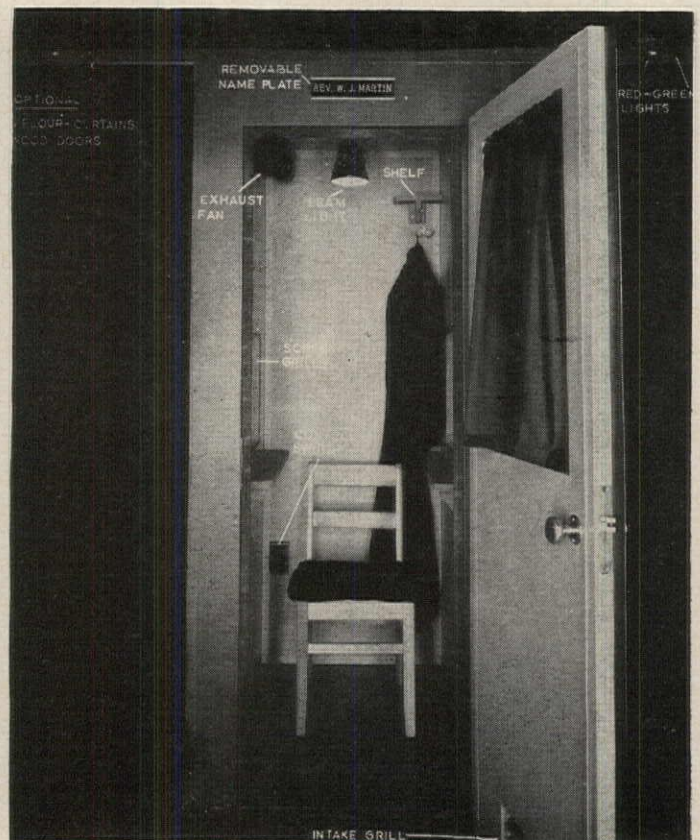
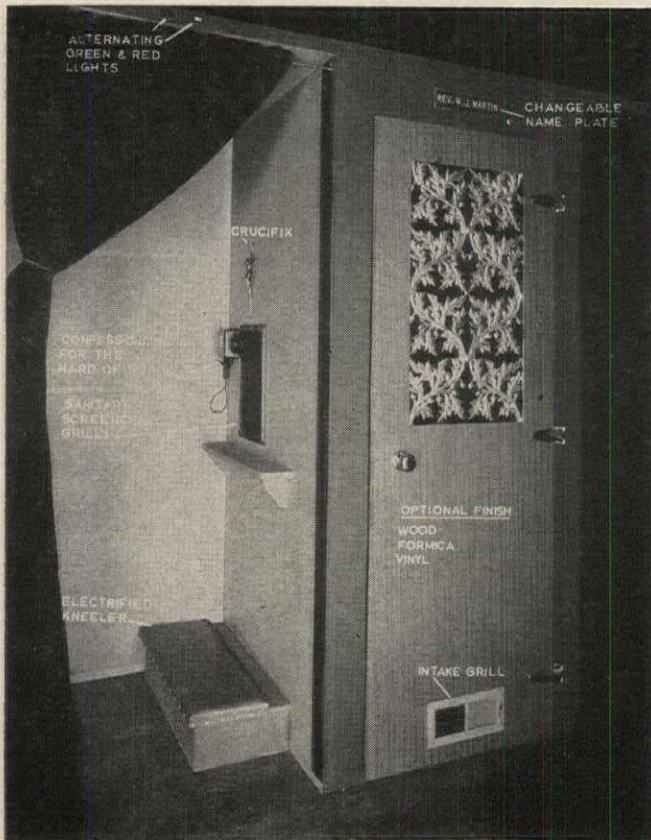


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Building Components

Application and Specification of Materials and Equipment

SHIELDED ROOMS FOR ELECTRONIC EQUIPMENT

Electronic equipment in hospitals, military installations and industry whose operation is disturbed by extraneous electronic waves is being shielded by panelized enclosures covered with wire screen or metal sheets. Special techniques are required to insure complete efficacy of the installation

by C. C. Borden, Vice President
Ace Engineering & Machine Co.
Huntington Valley, Pennsylvania

When sensitive electronic equipment is to be used in a building, the architect must take this fact into account in the design of spaces surrounding the equipment. The problem is to prevent radio frequency interference from disrupting the operation of electronic devices in such buildings as military structures, electronic manufacturing facilities and well-equipped modern hospitals.

Typical of recent installations are those by Skidmore, Owings & Merrill, N. Y., in the design of operating rooms for Bellevue, Columbia Presbyterian, and Temple University hospitals; Rogers & Butler, N. Y., for a number of electronic hospital facilities; Metcalf & Eddy, Boston, and Melheimer & Wagner, N. Y. for ballistic missile early warning stations in Greenland; and Sanders & Thomas, Philadelphia, for the FAA's National Aviation Experiment Facility at Atlantic City.

Need for Shielding

A simple example of radio frequency interference is the disturbing pattern which sometimes appears on one's TV set with the passing of an airplane, a power mower, or a trolley. Although only a minor annoyance to some entertainment, these disturbances can be critical in military electronic work or during a medical operation. Even non-military interference is generally in violation of regulations of the FCC, and violators can be prosecuted.

Electronic interference is a two-way proposition. In most cases it is necessary to prevent external influences from disturbing critical internal work. In others it is necessary to prevent internal influences from disturbing electronic receivers in the surrounding community.

The method used is an electronically shielded enclosure built entirely around the space in question. Just as building helps to keep temperature influences in or out, a shielded enclosure

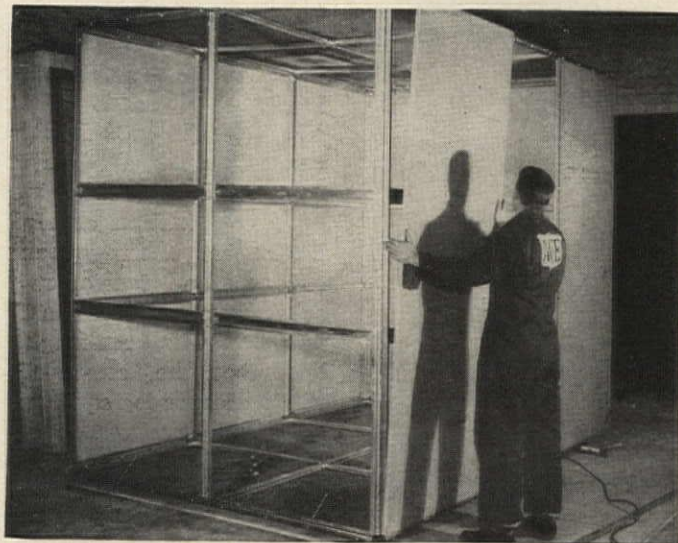
keeps invisible electronic influences in or out.

In such facilities, electronic shielding must be included in the architectural design. It is necessary to call on specialists for this work since conventional constructions will not block the passage of radio frequencies, and a knowledge of electronics is vital to meet the many variables

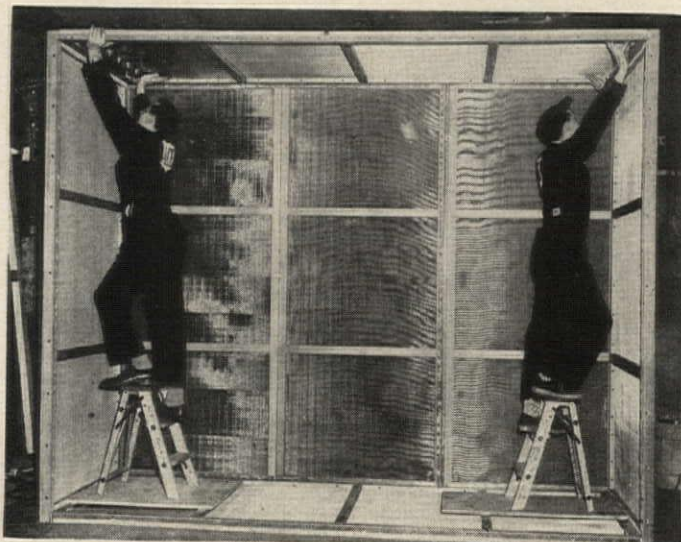
involved. Here, ninety-nine percent perfection is no better than failure, for one electronic leak renders the entire enclosure practically worthless.

Types of Enclosures

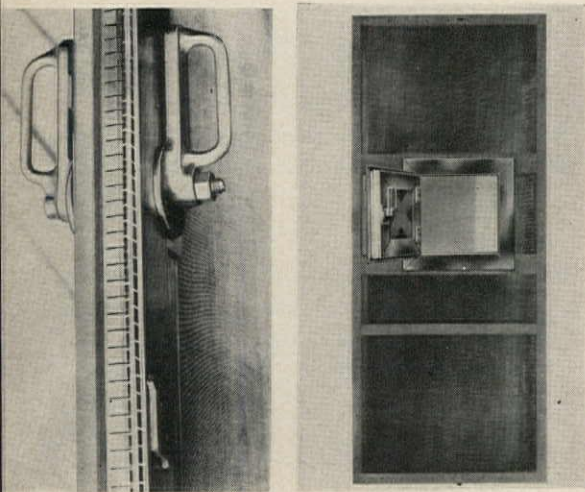
A simple shielded enclosure of today consists of a number of interchangeable modular panels which are bolted together in a special manner (often



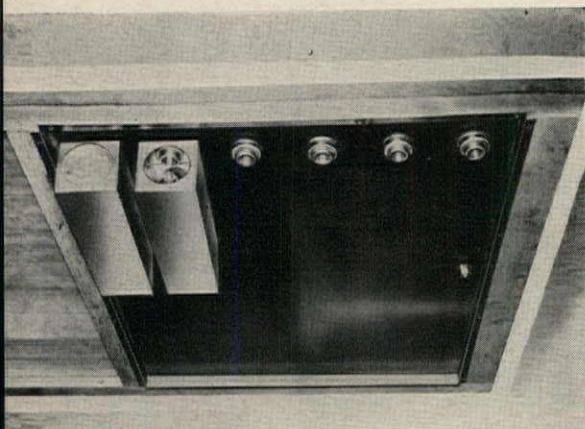
Solid-type enclosure has modular panels covered with copper or galvanized iron sheets. The panels are fastened to channels of copper-plated or electro-galvanized steel



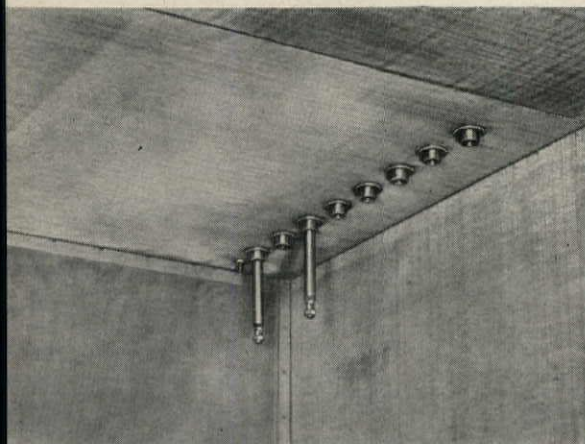
Cell-type enclosure has wire cloth wrapped around wooden frames to provide a double electronic shield. Enclosures can be finished with conventional materials



Left: personnel access door for a screen enclosure has two sets of spring-tempered contact fingers around periphery to maintain integrity of the shielding. Right: access panels have same construction and can be put in almost any desired location



Some enclosures require service panels with specially designed power line filters to maintain level of electronic suppression



Service panels permit the entry of air, water, gas and coaxial lines into enclosure without destroying the "seal"

with special structural elements designed to prevent electronic leakage) to form the walls, ceiling and floor of a working area. They are made as small as a bench box for production line manufacture of electronic components, and have been made as large as 100 by 50 by 18 ft high.

The panels are made of any of a number of materials depending upon the electrical parameters, the physical requirements, and the cost. Most common is the "cell type" which consists of 22-mesh copper wire cloth wrapped and fastened around wooden frames to provide a continuous double electronic shield, each shield being one inch apart from the other. Inner and outer layers are connected by being overlapped firmly around the periphery of the panel frame. Single shield enclosures of 22-mesh copper or galvanized steel wire cloth are also available for less critical applications.

Another basic panel type is the "solid" shield made of copper sheet (16 oz weight, .031 in. thick) or galvanized annealed iron sheet (24 gauge, .028 in. thick) joined together by a combination of rigid, copper-plated or electro-galvanized steel channels and tensioners which assure maximum freedom from interference leaks. Although developed later than the "cell-type" enclosure, this enclosure is requested more frequently today because of its sound reduction properties, the privacy it provides, and its flexibility of use either indoors or out.

In addition to the basic shielding panels, there are a number of special panels to accommodate different types of use. Access doors, for example, can be hand-operated and no larger than a single panel, or as large as an entire side, operated automatically by an electric or hydraulic mechanism including complicated interlocks.

In most cases doors are made of the same material as the wall panels. Contact with the walls, necessary to maintain the continuous shield, is effected through two sets of phosphor bronze contact strips around the periphery of the door. These strips are usually placed at right angles to each other and positioned so as to straddle effectively the outside corner of the door jamb. The strips make contact against a copper or brass covered door buck or saddle. The door buck, in turn, must be in-

stalled so that the integrity at the joints between any two wall panels is maintained. Normally the contact strips are arranged so that one set wipes into the door buck and the other is in compression. This seal requires a wedge-type locking system capable of applying the required pressure. Shielded doors are available as complete units and are not to be confused with ordinary hollow metal doors and metal door bucks which cannot be expected to meet the electronic requirements.

Other special panels include service entries to accommodate the passage of materials and filter panels to permit entry of various services such as air, gas, electricity, water etc. Each of these must be designed so that they permit no interference leakage when the room is in use.

Shielded enclosures are usually erected at the point of use. They can be installed in both new buildings and old. Wall, floor, and ceiling panels can be set within 2 in. of the surrounding construction. If desired, they can be anchored directly to the surrounding construction materials, regardless of type—masonry, steel, wood, composition board, etc. Type of fastening is critical, however, since improper fastening can destroy the shield. If the building is new, enclosure panels can be bolted to the rough finish interior—furring masonry, steel, etc.

Once the enclosure is erected it can be used as is or its interior can be finished further with all conventional materials including panelling, acoustical materials and even carpeting or concrete for the floor. In the attachment of such finishes great care must be taken to avoid piercing the shield with nails, screws, staples etc. On "cell-type" rooms, attachment can be made with short heavy gauge screws which do not penetrate both shields. A better procedure is to use closet bolts which can be soldered to the screen at the point of penetration. The best practice is to install furring strips against the shielded walls by means of closet hanger and to apply the finish material to the furring. This method produces an air space which provides additional protection against accidental damage or grounding of the shield. On the solid enclosure, furring is attached directly to the framing with machine screws at a point which does not permit penetration of the shield.

KNOLL ASSOCIATES INTRODUCE RESIDENTIAL FURNITURE



Knoll Associates' expanded collection of residential furniture includes the group of chests at left and the night table above right. The chests are of teak, placed on a chromed steel base

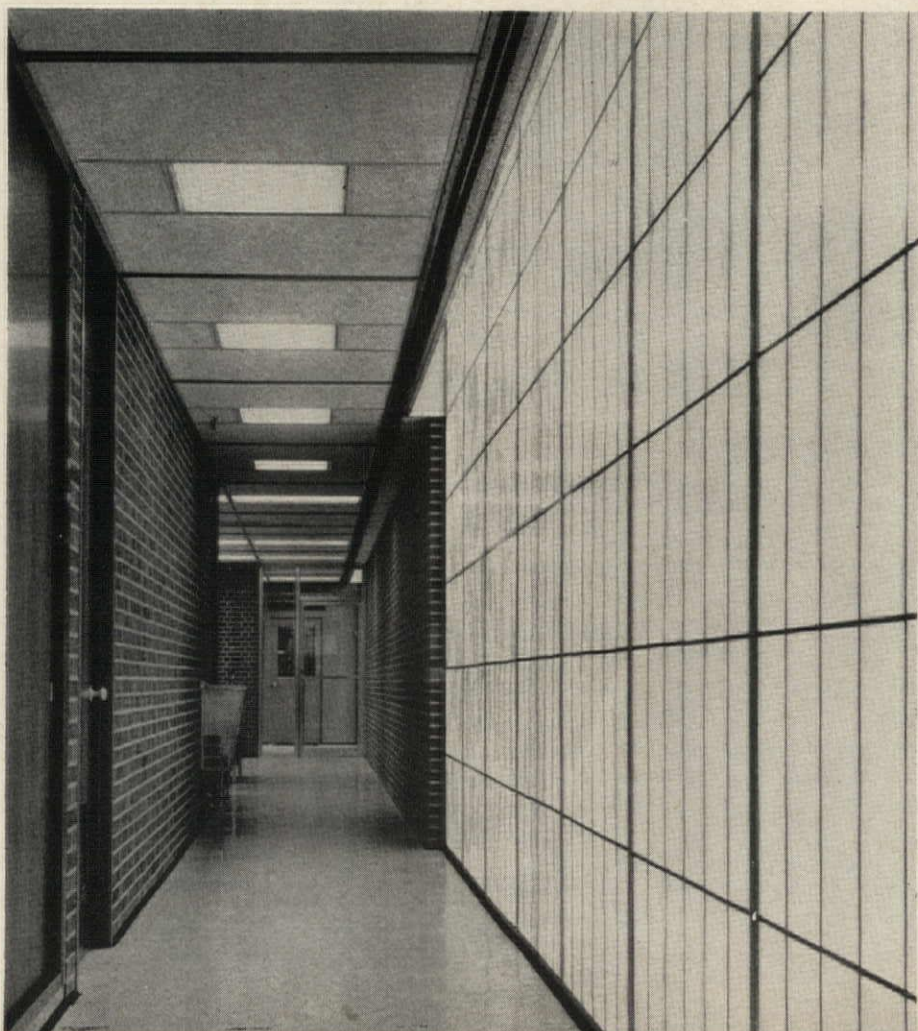
The night table has a shelf and a drawer with plastic fittings. The top is available in walnut, teak, or white plastic. *Knoll Associates, Inc., 320 Park Ave., New York 22, N.Y.*

FIBERGLAS REINFORCED ACRYLIC PANELING

Owens-Corning Fiberglas Corporation has introduced a series of translucent panels, made of acrylic plastic reinforced with glass fiber, under the name of "Fiberglas Daylighting Panels." The panel is of three-ply construction, a heavy center ply of Fiberglas reinforcing mat is sandwiched between the surfacing mat on each face of the panel. An acrylic resin is employed as the bonding agent, which is said to improve both weather resistance and light-diffusing qualities.

The panels are available in four colors: "Industrial Frost," with 80 per cent light transmission; white and light green, with 75 per cent light transmission; and medium green, with 60 per cent light transmission, for use in reducing direct sun, heat, or glare. Applications suggested by the manufacturer include skylights, partitions, replacements for existing glass and glazing, and equipment housings. The panel is shatterproof, and is not subject to rot, rust or corrosion. *Owens-Corning Fiberglas Co., 17 Fifth Ave., New York, N.Y.*

more products on page 202



Lighting Troffers

A new 44-page illustrated handbook of recessed fluorescent equipment is now available from Globe Lighting Products. The catalog describes the company's line of modular troffer units which are available with plastic lenses as well as a number of glass and metal shieldings. Details and data are provided for a wide variety of sizes. *Globe Lighting Products, 1710 Flushing Ave., Brooklyn 37, N.Y.*

Fan Capacities

A new 44-page illustrated catalog describing the American-Standard line of HS Fans is now obtainable. The bulletin discusses construction features of the fans and describes available drive arrangements, configurations, and types of drive. Capacity tables are also included for all 12 sizes in both single-inlet, single-width and double-inlet, double-width designs. Outline drawings are keyed to tabulated dimensional data to provide working layout dimensions. A typical specification is also provided. *American-Standard Industrial Division, Detroit 32, Michigan**

Electrical Supports

A new 24-page catalog that illustrates basic slotted channel, fluorescent hanging systems and fittings for electrical supports is available from the *Power-Strut Div. of Van Huffel Products, Inc., Warren, Ohio*

Fire Protection

The National Fire Protection Association has announced the publication of four pamphlets: "Fire Doors and Windows" (70 pages, \$1.00), "Air Conditioning Systems for Other Than Residences" (26 pages, sixty cents), "Warm Air Heating and Air Conditioning Systems for Residences" (24 pages, fifty cents), and "Water Cooling Towers" (11 pages, fifty cents). *National Fire Protection Association, 60 Battery-march St., Boston 10, Mass.*

Make-Up Air Systems

The Reznor Manufacturing Co. has produced an eight page introduction to the principles of designing make-up air systems, that is, methods of providing replacement air for areas where mechanical exhaust equipment is in use. The booklet also includes information on the appropriate Reznor furnaces and blowers. *Reznor Manufacturing Co., Mercer, Pa.**

Cafeteria Counters

The Southern Equipment Co. has released a revised catalog of sectional cafeteria counters. Consisting of 40 pages, the catalog is divided into two sections, one listing 30 in. wide sectional units and one listing 24 in. units. All the sections manufactured are itemized, and both general and mechanical specifications are included. Front elevation drawings, dimensional drawings, and roughing-in details have been provided. Also listed are optional accessories, types of front panels available, and suggested floor plan layouts. *Southern Equipment Co., 4550 Gustine Ave., St. Louis 16, Missouri**

Light Gage Steel Manual

The American Iron and Steel Institute has published a 1961 edition of the Light Gage Cold-Formed Steel Design Manual and a companion Commentary volume. This third edition of the Design Manual includes the 1960 edition of the specification, and the supplementary information. charts and tables have been considerably expanded. The Commentary is intended for both the practicing engineer and the teacher. It presents the characteristics and performance of formed steel structural members and describes the reasoning and justification of the various provisions of the Specification. Manual \$1.00, Commentary fifty cents. *American Iron and Steel Institute, 150 E. 42nd St., N.Y.C. 17, N.Y.*

Built-Up Roofing

A new 28-page catalog lists data and specifications of Carey Bonded Built-Up Roofs. The manual includes a Roof Selector Guide, an explanation of the Carey Bond, and general requirements for built-up roofing specifications on nailable and non-nailable decks and materials. Application information includes details on steep deck and dead level roofs, insulation, and the sealing of joints. Also included are flashing details for various typical situations, such as vent pipes, gravel steps and gutters, expansion joints and so on. The catalog is available at Carey district offices or from *The Philip Carey Mfg. Co., 320 S. Wayne Ave., Cincinnati 15, Ohio**

**Additional product information in Sweet's Architectural File
more literature on page 234*



Swimming Pools

The Paddock Pool Equipment Co. has announced the release of an 112-page Design Manual. It includes information on the requirements of the A.A.U. and other athletic organizations and the minimum standards of the National Swimming Pool Institute. A number of typical pools and equipment installations are shown, and 44 pages are devoted to specification. A final chapter contains data relating to the size of recirculating piping. *Paddock Pool Equipment Co., 14600 Arminata St., Van Nuys, Calif.*

Three
Building
Types
Hanley Brick
Why?

LEFT:
Municipal Auditorium, Utica, New York
Architect: Gehron & Seltzer
Associate Architect: Frank DelleCese
General Contractor: Sovereign
Construction Co. Ltd.

BOTTOM LEFT:
Graduate School of Public Health,
University of Pittsburgh, Pittsburgh, Pa.
Architect: Eggers & Higgins
General Contractor: Mellon-Stuart Company

BELOW:
Carlton Towers, Toronto, Canada
Architect: Edward I. Richmond
General Contractor: Carlton Towers Ltd.



Because HANLEY Duramic® Glazed Brick offers the designer (a) complete freedom in color selection . . . thirty in all; (b) three sizes (standard, Jumbo, Norman), and (c) the knowledge that this material meets the highest standards of uniformity and quality. In addition HANLEY Duramic® Glazed Brick colors do not fade, and the product is self-cleaning. Why not specify HANLEY on your next project.

HANLEY COMPANY

One Gateway Center, Pittsburgh 22, Pennsylvania
Sales Offices: New York • Buffalo • Pittsburgh

ELIMINATE CHALKBOARD

SQUIN



Improve visibility three ways with J-M Colorlith[®] chalkboards

Now you can provide classrooms with strong, durable, beautiful chalkboards that are truly easy on the eyes. With Johns-Manville Colorlith, you get uniform texture, minute pore structure and pleasing shades to eliminate the three major causes of poor chalkboard visibility: chalk build-up, low visual contrast and harsh colors.

Colorlith is a dense, homogeneous sheet that provides a smooth, hard-writing surface that is extremely easy to clean. Because its minute pores cannot fill with chalk particles, dust build-up is cut to a minimum. This means infrequent

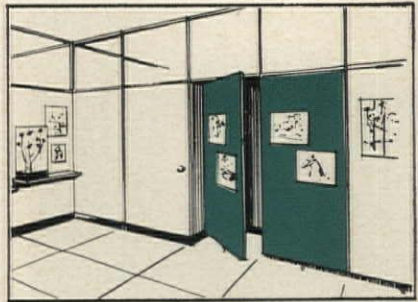
washings, too! Colorlith's asbestos-cement structure takes chalk easily, thus permitting full, unbroken lines for easy readability. And, Colorlith is available in three eye-pleasing colors—Spruce Green, Cameo Brown and Charcoal Gray. Extensive research and testing have proved these colors the most restful to the eyes.

Because of its unique composition, Colorlith retains its excellent properties over the years. For full details on this high-quality chalkboard, write to J. B. Jobe, V.P., Johns-Manville, Box 14, New York 16, N. Y. In Canada: Port Credit, Ontario. Cable address: Johnmanvil.

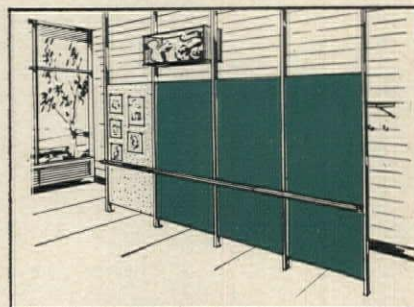
ADDITIONAL CLASSROOM USES FOR COLORLITH CHALKBOARD



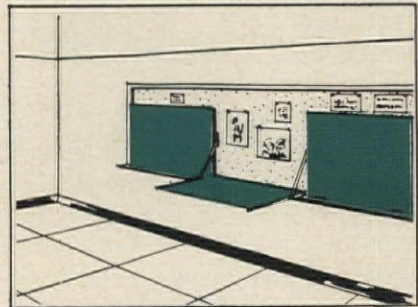
PARTITIONS



DOORS



WARDROBES



CONVERTIBLE UNITS



JOHNS-MANVILLE

Product Reports

continued from page 197

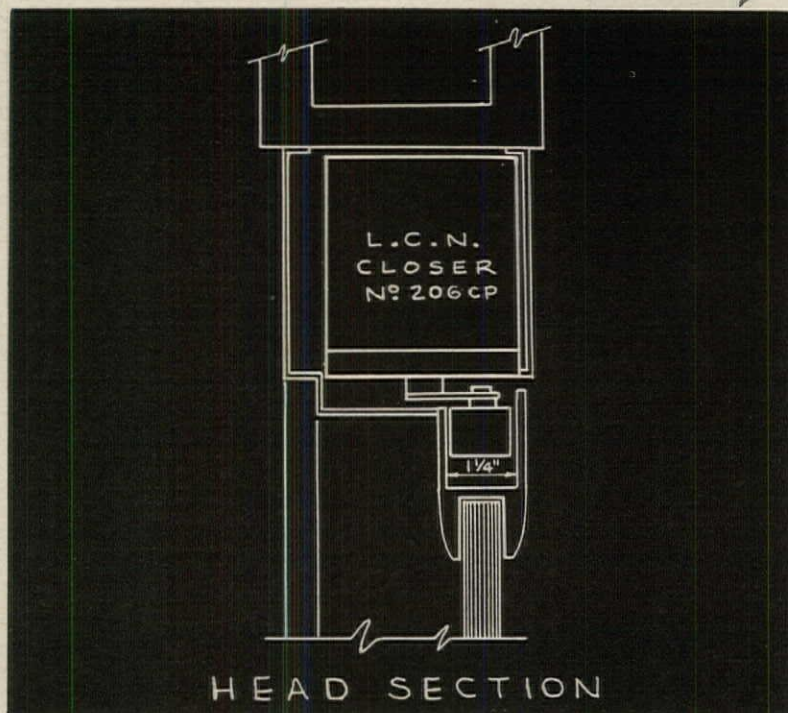
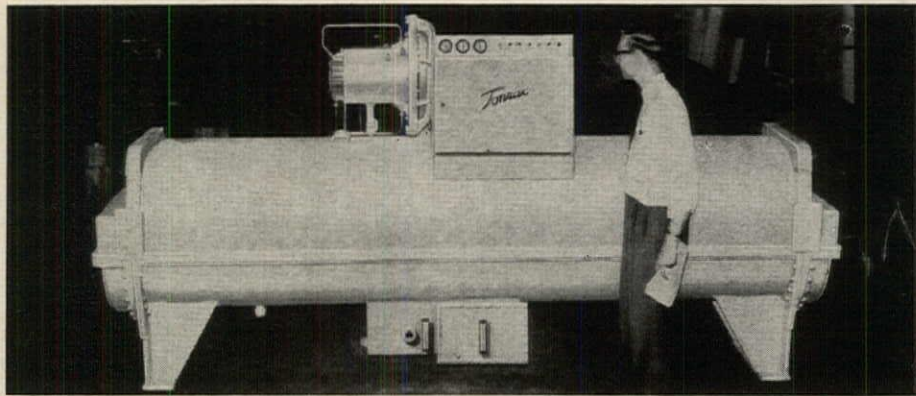
Refrigeration Equipment

A packaged refrigeration unit offering substantial reductions in size and weight is available from American Standard Industrial Division. Called the Packaged Tonrac, it is intended for use in central station air conditioning systems, providing chilled water for operation of zone or individual room conditioners in hospitals, schools, small office buildings, motels, and other buildings of similar size. It is available in eight size increments from 50 to 100 ton nominal capacity. The packaged design is completely piped and factory-insulated; it requires no auxiliary water piping, refrigerant piping or control tubing installation on the job site. The basic Packaged Tonrac unit consists of a centrifugal compressor with its electric drive motor, a heat exchanger section consisting of condenser and cooler portions plus necessary piping, valves, and controls. Power is supplied from a separate motor-generator-exciter power unit which converts 60-cycle line current to 300-cycle current for the Tonrac motor. The completely assembled machine will pass through a standard 36-in. wide doorway, its weight, including power unit, is 6700 pounds. *American Standard Industrial Division, Detroit 32, Mich.*



Fire Alarm System

The Notifier Co. has announced a coded transmitter panel, Series MCN, especially designed to meet general government specifications for automatic fire detection and alarm systems. Coded signals are shunt non-interfering, and allow the MCN panel to be connected to most standard coded systems. *Notifier Co., 3700 N. 56th St., Lincoln, Nebraska*
more products on page 206



CONSTRUCTION DETAILS

for LCN Overhead Concealed Door Closer Shown on Opposite Page
The LCN Series 200-CP Closer's Main Points:

1. Efficient, full rack-and-pinion, two-speed control of the door
2. Mechanism entirely concealed; arm disappears into door stop on closing
3. Hydraulic back-check prevents door's being thrown open violently to damage walls, furniture, door, hinges, etc. Door may open 130°, jamb permitting
4. Hold-open (optional) set at any one of following points: 85°, 90°, 100° or 110°
5. Easy to regulate without removing any part
6. Used with either wood or metal doors and frames

*Complete Catalog on Request—No Obligation
or See Sweet's 1961, Sec. 18e/Lc*

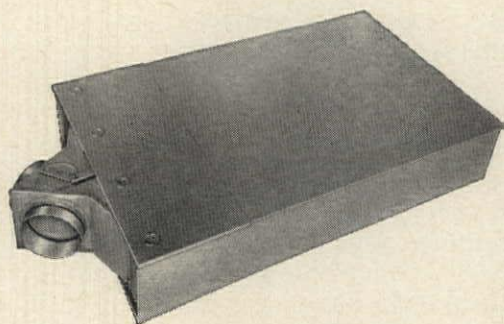
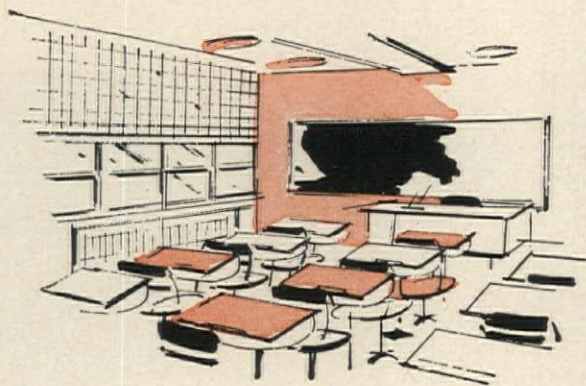
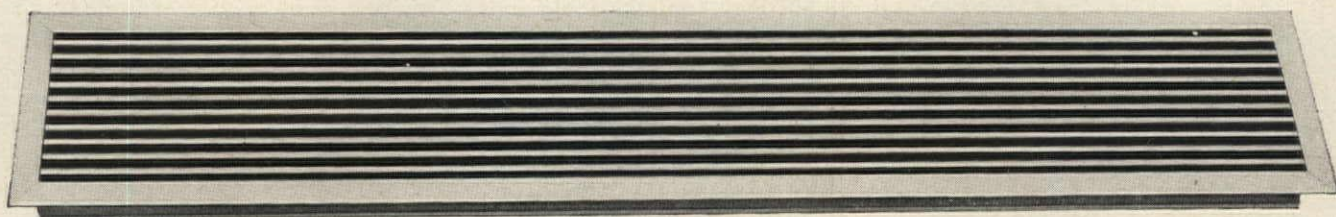
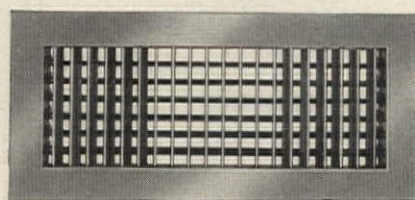
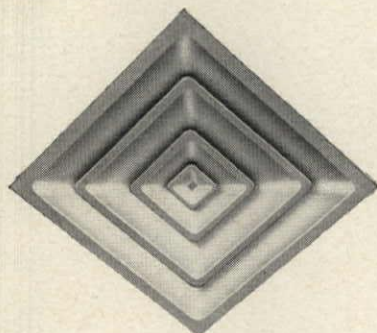
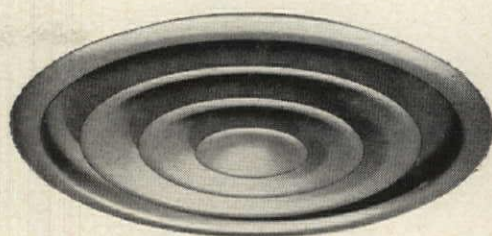
LCN CLOSERS, INC., PRINCETON, ILLINOIS

Canada: LCN Closers of Canada, Ltd., P.O. Box 100, Port Credit, Ontario

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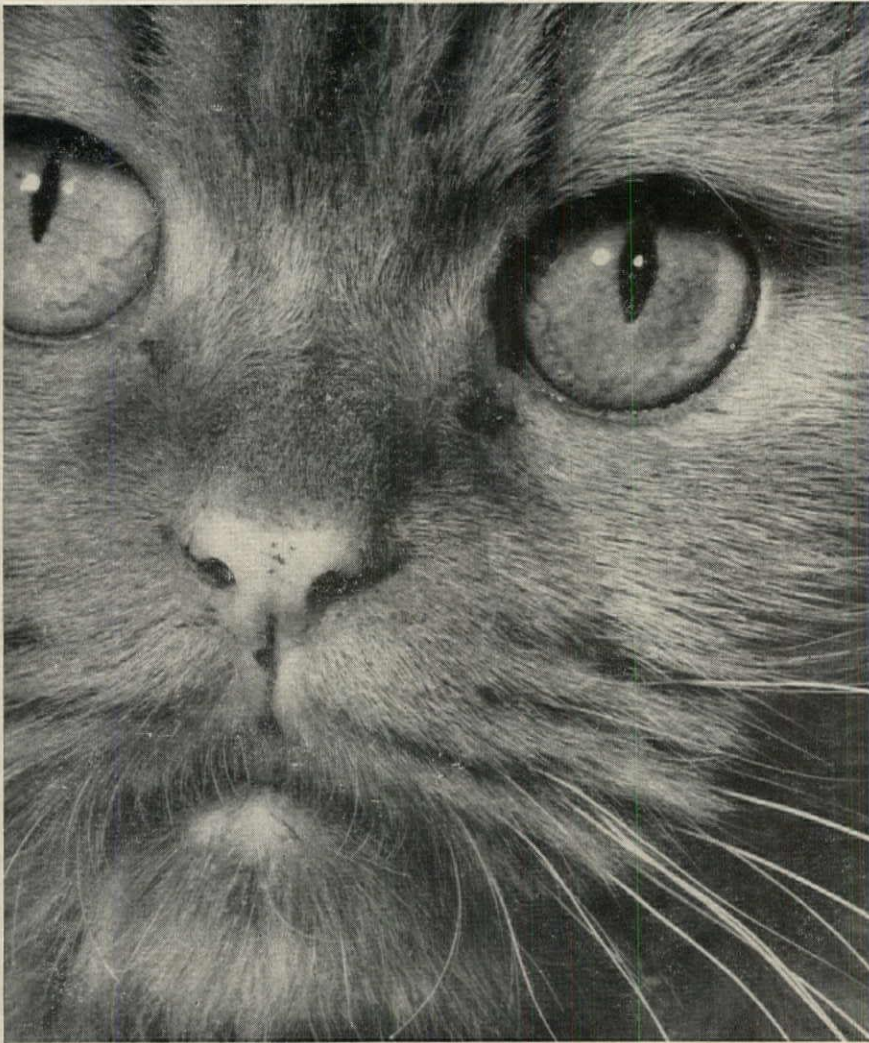
Write for the name and address of the Factory Office or Sales Representative nearest you.



TUTTLE & BAILEY

Division of Allied Thermal Corporation
New Britain, Connecticut

Tuttle & Bailey Pacific, Inc., City of Industry, Calif.



*“He is safe from danger
who is on guard, even when safe...”*

(Publilius, First Century, B. C.)

Who's keeping an eye on *your* plant's security system—to make sure it's always on guard?

If your property is protected by ADT, you *know* that continuous electrical vigilance is in force twenty-four hours a day. You *know* that under the ADT service concept, protective equipment is ready to operate when fire, burglary or other hazards threaten.

ADT not only offers a complete range of automatic protection services, it also provides the finest inspection and maintenance service possible. With ADT maintenance service, you have the assurance that all systems receive regular and thorough inspection and test, with necessary repairs and replacement.

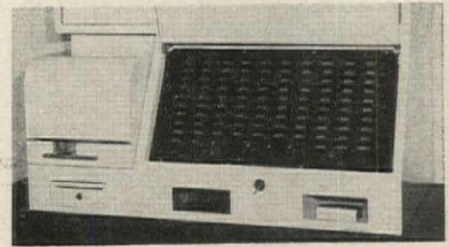
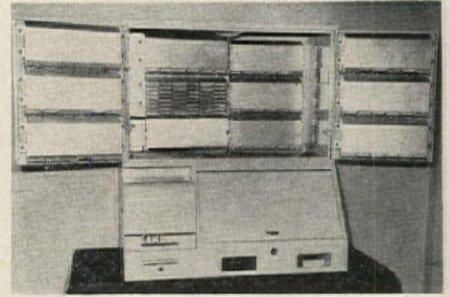
For more information, write for booklet “Protecting Life, Property and Profits.” Or call an ADT security specialist for a copy. He's listed in your telephone directory.

AMERICAN DISTRICT TELEGRAPH COMPANY
Executive Office: 155 Sixth Avenue, New York 13, N. Y.
A NATIONWIDE ORGANIZATION



Product Reports

continued from page 202



Hospital Drug Control

The Brewer Pharmacal Engineering Co. has announced their new “Brewer System” devised specifically for hospital pharmacy use. Its purpose is to maintain maximum inventory control over medicaments throughout the hospital, and to reduce the work load in the pharmacy. The system consists of a central drug station, above, and a special cart. The station stores the drugs and delivers the proper dosage in response to a programmed card. The machine also automatically records the transaction. The cart has a drawer for each patient's medication, below, thereby reducing the possibility of the wrong drug being administered. The system is said to decrease the amount of time-consuming paper work for the nurses on duty, cut administration costs, and insure 24-hour availability of medicines. *Brewer Pharmacal Engineering Co., 9138 West Chester Pike, Upper Darby, Penn.*



more products on page 218



BRUCE Ranch Plank®

*Popular-priced
pegged oak floor*

You don't need to break your budget to get buyer-appealing rooms with distinctive features. Bruce Ranch Plank is the popular-priced version of famous random Oak plank flooring. Walnut pegs are factory inserted, and the beautiful factory-applied finish saves the expense of on-the-job sanding and finishing. Ranch Plank is easy to lay: just alternate the 2¼" and 3¼" widths and nail them like strip flooring. Write for Bruce Flooring color booklet. You'll find our catalog in Sweet's Files.

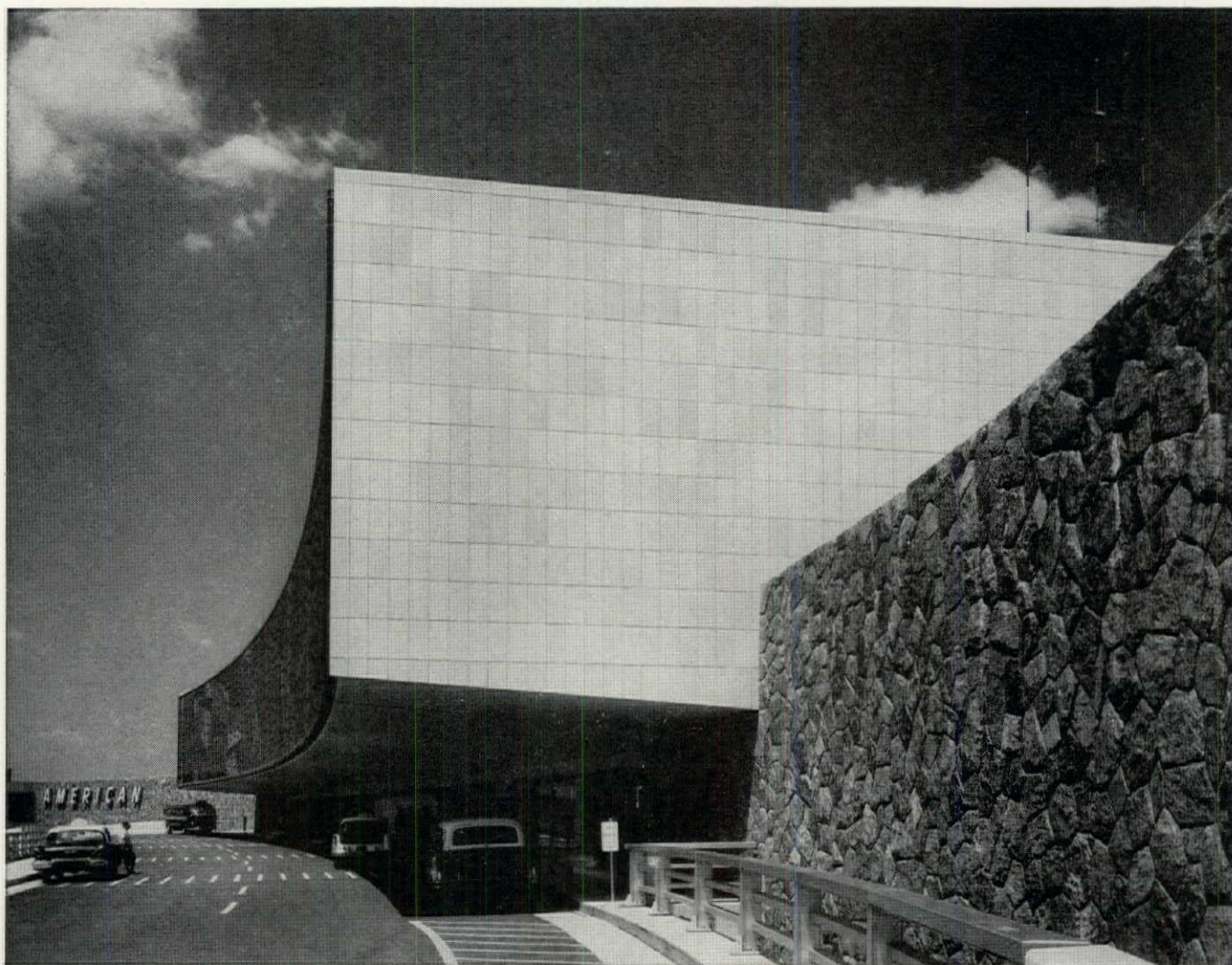


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A feature floor for "special" rooms

AMERICAN AIRLINES PASSENGER TERMINAL
NEW YORK INTERNATIONAL AIRPORT, JAMAICA 30, NEW YORK
Kahn and Jacobs—Architects; John B. Kelley, Inc. of New York—Masonry Contractor; Turner Construction Co.—Contractor. Walls on both sides of stained-glass facade are antique ivory Ceramic Veneer in 12" x 24" units. Piers, sills and window surround are black Ceramic Veneer.



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The color range of Ceramic Veneer rivals the rainbow... enables you to create contrasting or harmonious effects in combination with other materials in buildings of all types. Ceramic Veneer is custom-made to your precise specifications. You have a choice of sculpture, polychrome panels, plain surfaces, or one of the smart new Federal Seaboard grille designs. This versatility of form, color and texture applies to units large or small, for interiors or exteriors. From designability to desirability, from attractive initial cost to ease and economy of maintenance, Ceramic Veneer is in a class by itself. For even lower initial cost, investigate the advantages of Federal Seaboard's new $\frac{3}{8}$ " CV Durathin. Construction detail, data, color guide brochure, advice and estimates on preliminary sketches, will be furnished promptly. Write today.



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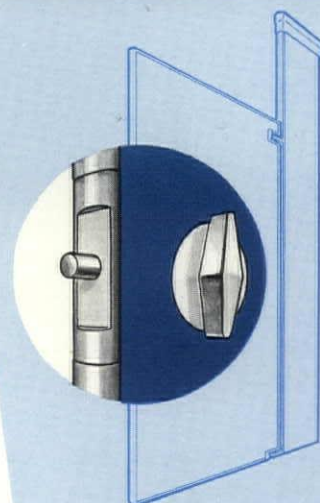
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Lowest **"IN-PLACE"** *Cost*

Sanymetal's completely flush design makes possible lower costs all along the line. Integral, factory-installed hinge brackets; concealed flush latch and recessed flush mounted hinges mean far faster, easier installation on the job site.

This unique flush design offers long, service-free life and lowest possible maintenance costs.

Ask your Sanymetal Representative or write direct for "Design Studies" by Sanymetal. This full-color collection of sketches was developed to help design rest room areas that are as attractive, comfortable and functional as the rest of the structure.



Exclusive concealed latch offers smooth, maintenance-free operation. Working mechanism is completely concealed to greatly facilitate installation and cleaning.

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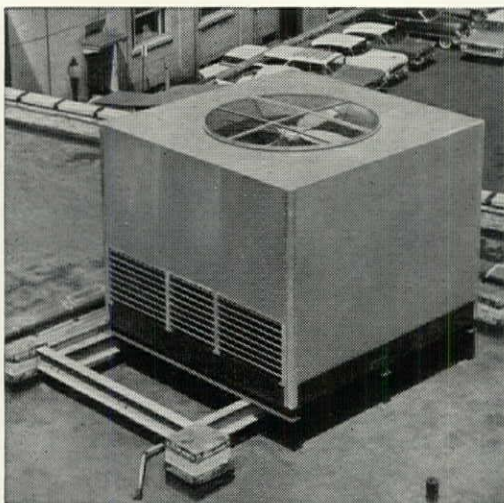
1721 Urbana Road, Cleveland 12, Ohio



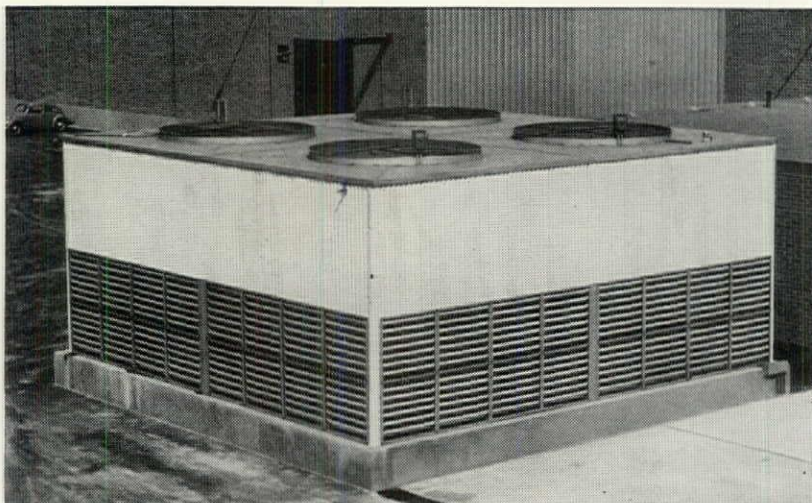
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Standard steel-skin single-cell Carrier Cooling Tower with a capacity of 170 tons



Transite-skin Carrier Tower with four 355-ton cells—total capacity: 1420 tons

You can't see these 2 advantages, but they're there!

- 4 **Lower operating weights**—as much as a 50% reduction, and more, over conventional cooling towers.
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Carrier Induced Draft Cooling Towers, in 9 sizes with a capacity range from 170 to 500 tons in a single cell, are available complete with basin or without. For complete information, call your Carrier representative. Or write Carrier Air Conditioning Company, Syracuse 1, N. Y. In Canada: Carrier Air Conditioning Ltd., Toronto 14.

Carrier Air Conditioning Company



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Takes truckloads to feed it.
But the more it consumes
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This large, economy-size swamp poodle isn't the only character with a big mouth.....

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architects do). This competent, wide capacity whiteprinter also boasts a big bazoo. 42" wide! And king-size appetite to match. "200" dotes on engineering drawings, specifications, floor plans, etc. Gobbles 'em... fast. Neat about it, though... crisp, dry prints in seconds. Placid disposition... like its brothers, Streamliner 400 and 100, "200" can be handled by anyone. Sound like a whiteprinter you'd like around? Say no more. Rent, lease, or buy. For the full, high volume, low cost story, mail coupon today.

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Please send cost-cutting details on Stream-
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Also: Streamliner 400 (42" Floor model)
Streamliner 100 (30" Table model)

Name _____

Address _____

City _____ State _____

Inside...outside...the colorful look



Dearborn Township School, Wayne County, Mich.
Architect—Bennett & Straight, Dearborn, Mich.



South Lyon Elementary School, South Lyon, Mich.
Architect—W. T. Anicka & Associates, Ann Arbor, Mich.



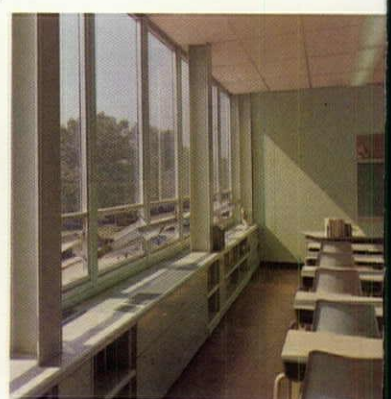
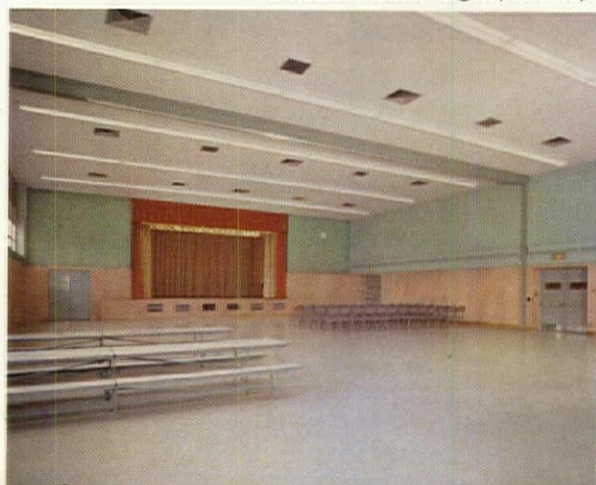
Ray M. Hatton Elementary School, Bridge City, Texas
Architect—Goleman & Rolfe, Orange, Texas



New Intermediate School, Vestaburg, Mich.
Architect—Warren Holmes Company, Lansing, Mich.



Central Elementary School, Warsaw, N. Y.
Architect—Trevor Rogers, Buffalo, N. Y.



of AmBridge Modular Construction

The architects who designed these schools all used AmBridge Modular Construction. Yet, each school has its own distinctive character because it was *individually* designed.

In a matter of a few months you can have a spacious, colorful new school designed to fit your needs and budget. AmBridge Modular School components are precision-fabricated *before* they reach the job site, so it takes only a handful of men to erect them. Think of the time and money *that* saves.

These distinctive schools will look just as bright and colorful years from now because baked enamel or vinyl interior partitions sparkle with an occasional wipe, and normal rainfall keeps the porcelainized exterior walls apple clean.

The steel walls are less than 3" thick, yet provide unexcelled sound control and better insulation than a conventional 12" wall plus plaster. And because walls are so much thinner, they provide about 5% more floor space compared to conventional construction.

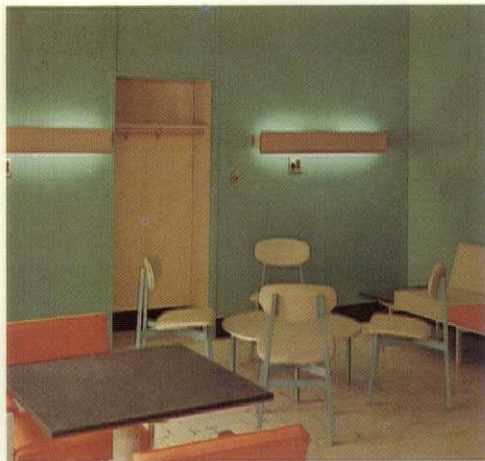
There it is. Fast construction. More space. Competitive cost. Style. If you'd like to have more information, write for our 24-page booklet. American Bridge Division, United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

USS is a registered trademark

General Offices: 525 William Penn Place, Pittsburgh, Pa. Contracting Offices in: Ambridge • Atlanta • Baltimore • Birmingham • Boston • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Elmira • Gary • Harrisburg, Pa. • Houston • Los Angeles • Memphis • Minneapolis • New York • Orange, Texas • Philadelphia • Pittsburgh • Portland, Ore. • Roanoke • St. Louis • San Francisco • Trenton • United States Steel Export Company, New York.



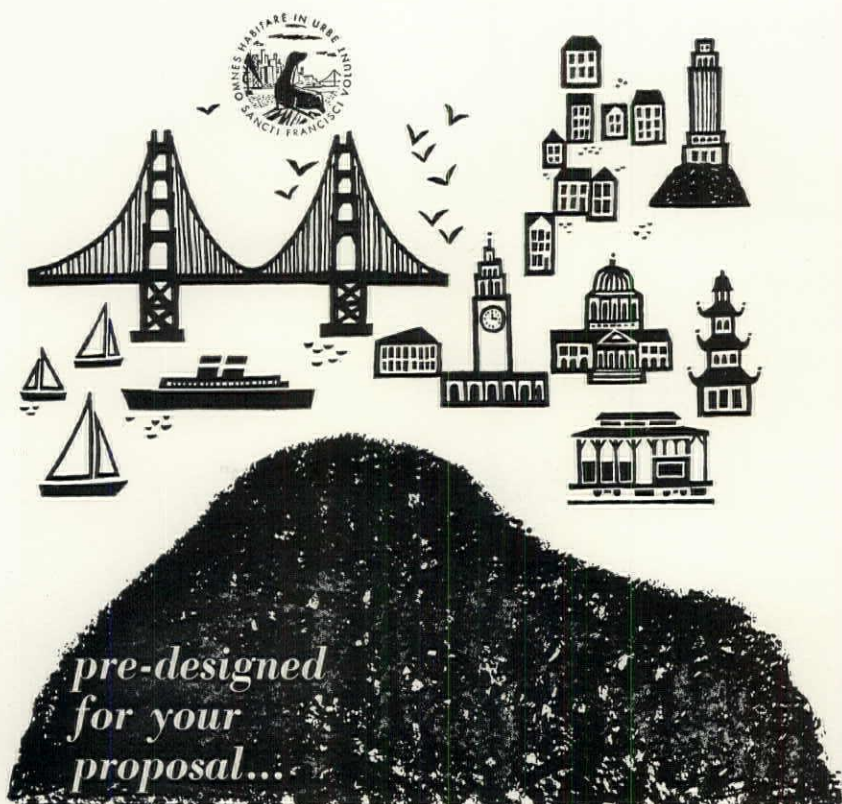
This mark tells you a product is made of modern, dependable Steel.



USS American Bridge
Division of
United States Steel



Beaver Area Senior High School, Beaver, Pa.
Architect—B. J. McCandless, Ellwood City, Pa.

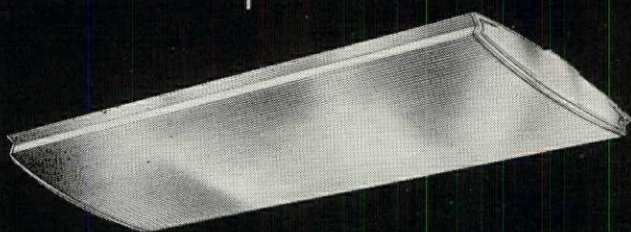


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for your
proposal...*

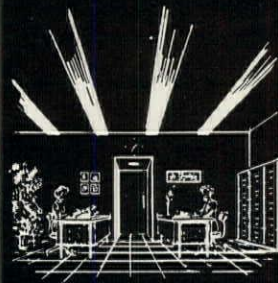
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 will be sold on a simple dollar bid basis
 October 24, 1961. Here in the City's
 heart is a twenty-two acre residential site,
 pre-designed and developed for about one
 thousand apartments. Available to
 developers are four architectural designs,
 chosen in national competition. Write
 to San Francisco Redevelopment Agency,
 525 Golden Gate Avenue, San Francisco 2,
 for Developers Guide Statement, DIAMOND
 HEIGHTS, RED ROCK HILL.

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MOTIF | Controlled Brightness



The "Control-lens" offered in Mitchell's MOTIF assures ideal low brightness illumination to provide the ultimate in comfortable visual environment. Not just a diffuser; but a lens of refractor prisms that directs high-level illumination without glare. The smartly styled shallow-profile of the MOTIF (apparent depth 2 1/8" thin) lends itself to modern interiors. Write for complete engineering and photometric data.



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Living



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 ALL TRANSISTOR
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- Talk to anyone—upstairs and downstairs, inside and out.
- Enjoy radio in every room with the simple flick-of-a-switch.

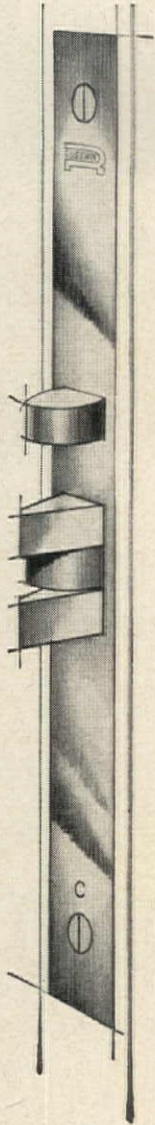
Distinctively styled. Beautifully finished in richly blended gold, polished and satin silver tones. Easily installed in any home. Built-in and surface-mounted models available. Write for complete information.



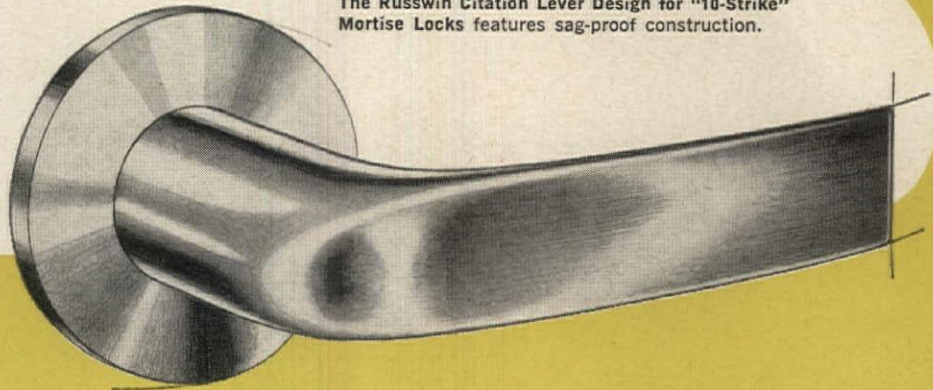
World Honored for Style, Quality, and Dependability.

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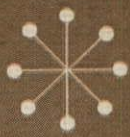
The Russwin Citation Lever Design for "10-Strike" Mortise Locks features sag-proof construction.



the russwin **"R"**
...what it means in
pace-setting styling

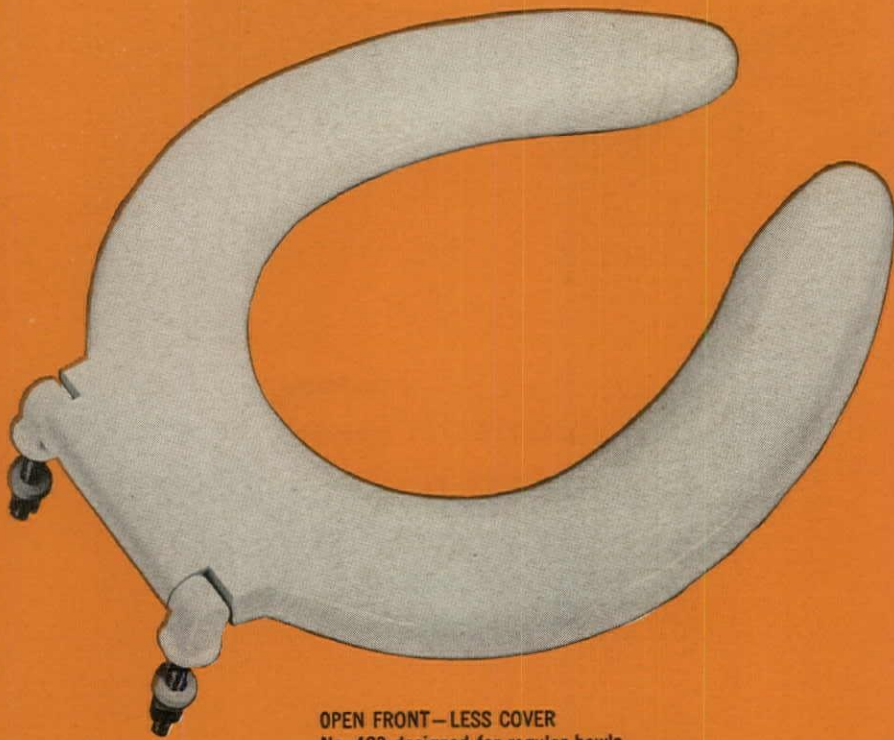
The addition of the new Citation lever design provides a smart "Continental" look to the popular "Ten Strike" line of mortise locks. Pace-setting styling... unsurpassed quality... unique construction... the Russwin "R" assures all this, and more. It assures the services of a specialist, your Russwin distributor. He offers the finest in doorware... and competent help with doorware problems. Let him serve *you*. Russell & Erwin Division, The American Hardware Corporation, New Britain, Connecticut.





NEW FROM

A SERIES OF SEATS TO



OPEN FRONT—LESS COVER
No. 423 designed for regular bowls.
No. 523 designed for elongated bowls.

Check These Beneke Benefits

- ✓ HEAVY SECTION/HEAVY DUTY
- ✓ HIGH-IMPACT POLYSTYRENE
- ✓ BLACK/WHITE/FIXTURE COLORS
- ✓ STAIN PROOF AND FADE PROOF
- ✓ RESISTS MOISTURE/OIL/ACID
- ✓ SUPER-SMOOTH SURFACE NEVER PITS, PEELS, DENTS OR CRACKS
- ✓ MATCHING MOLDED HINGES WON'T CORRODE—EASY TO KEEP CLEAN
- ✓ SIZED TO FIT ALL STANDARD BOWLS—REGULAR AND ELONGATED
- ✓ POLYETHYLENE BUMPERS OUTLAST RUBBER, YET ARE REPLACEABLE

CHOOSE THE RIGHT HINGE FOR EACH APPLICATION FROM 5 BENEKE TYPES



Regular



Check



Self-Sustaining



Self-Sustaining Check



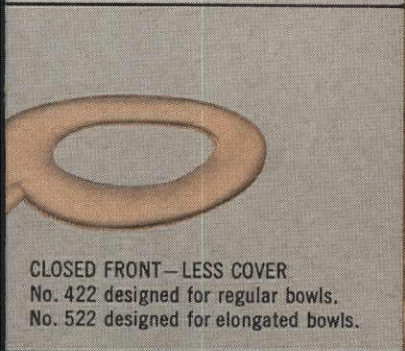
Self-Raising

BENEKE

MEET EVERY SPECIFICATION



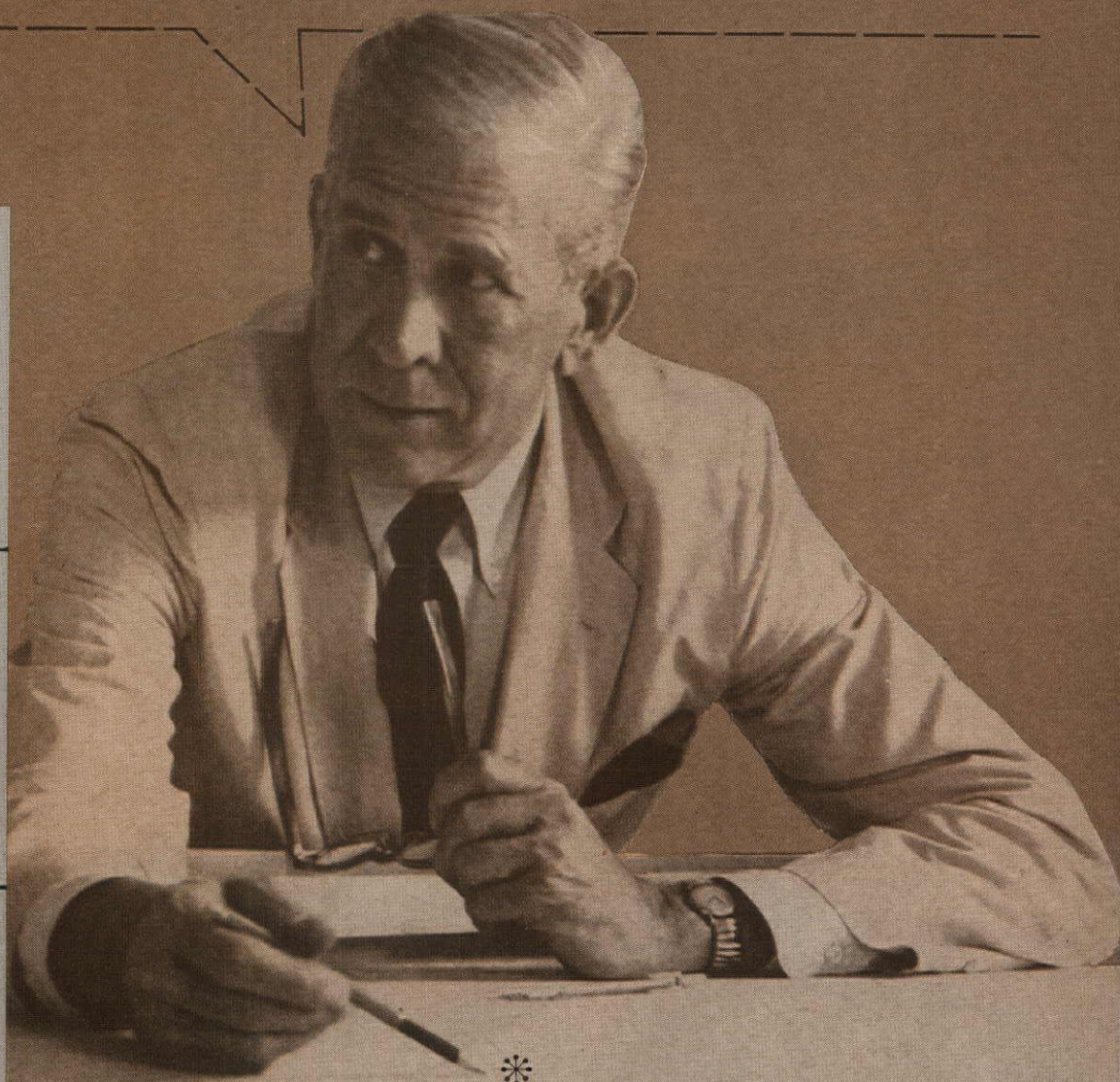
OPEN FRONT—WITH COVER
No. 421 designed for regular bowls.
No. 521 designed for elongated bowls.



CLOSED FRONT—LESS COVER
No. 422 designed for regular bowls.
No. 522 designed for elongated bowls.



CLOSED FRONT—WITH COVER
No. 420 designed for regular bowls.
No. 520 designed for elongated bowls.



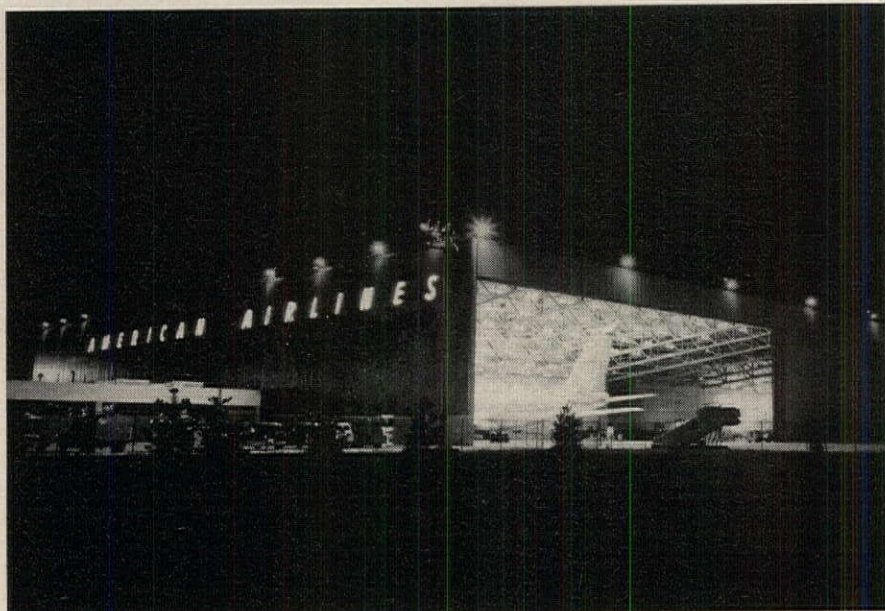
Beneke... the first name
in toilet seats—now the last word
in specification quality seats.

BENEKE
COLUMBUS, MISSISSIPPI

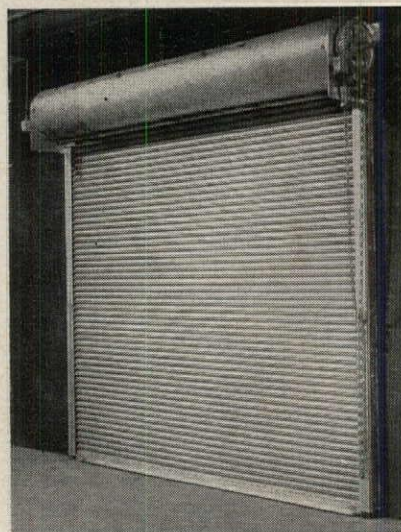
CORPORATION

DISTRIBUTED BY PLUMBING WHOLESALERS

THE CLIENT IS PLEASED



American Airlines Hangar #10
Idlewild Airport, New York City
Arch./Engr.—Kahn & Jacobs
Contr.—Turner Construction Co.



Automatic Rolling Fire Door UN20

Since 1958 American Airline's Hangar #10 has been protected by Balfour Automatic Rolling Steel Fire Doors. These doors combine automatic fire protection with the dependable service essential to quick aircraft maintenance in this jet age hangar.

Balfour
rolling doors

doc-port® doors
steel service doors
automatic fire doors
pygme® counter doors
steel grilles

Catalog in Sweet's or write:
WALTER BALFOUR & CO. INC.

Brooklyn 22, N. Y.

Product Reports

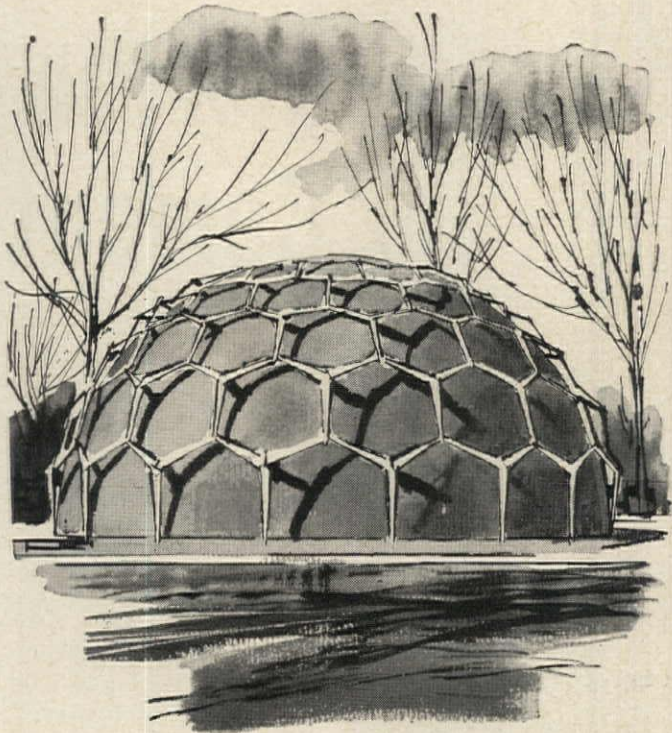
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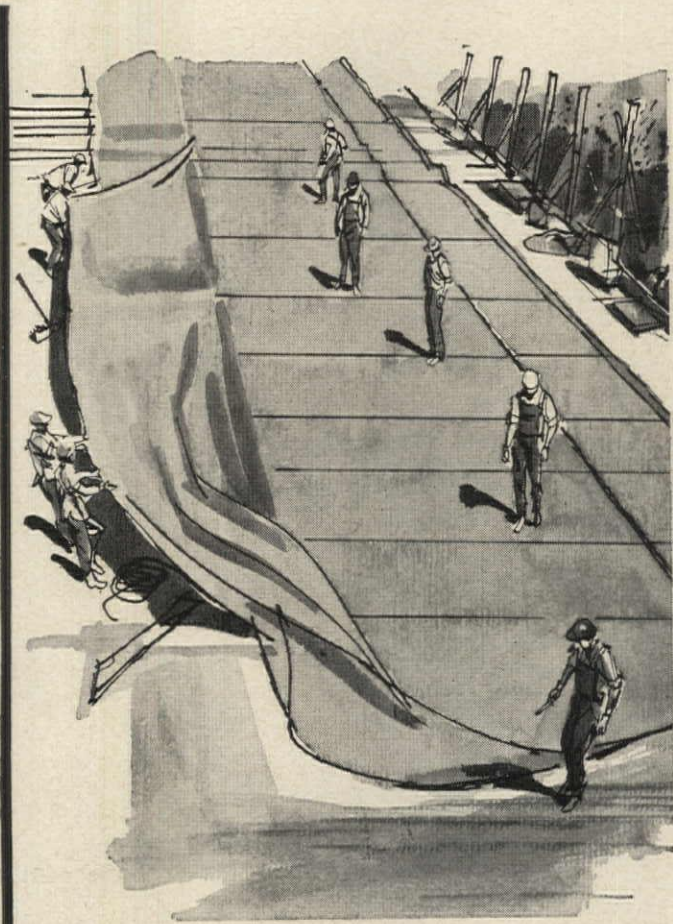
Aluminum Swimming Pool

A typical installation of a Chester all-aluminum pool is on the sixth floor roofdeck of the new Robert Meyer Hotel in Jacksonville, Fla., William B. Tabler, architect. The pool is 20 ft by 40 ft, and 3 ft to 8 ft 6 in. deep. The pool can be installed on rooftops or setbacks, on top of slabs, or suspended between buildings. It can be relocated in the event of remodeling or expansion. Lighter than conventional swimming pool construction, it is warranted against cracks, rust, or seepage. It has built-in recirculating ducts and all welded fittings. The pool is delivered to the site in factory fabricated sections. Construction is of an aluminum, magnesium, manganese alloy; joints are sealed by M. I. G. arc welding, smooth-finished, and vacuum tested for water tightness. The pool can be converted to an ice-skating rink by the addition of special inserts, and can be adapted to serve as the water tower for a sprinkler system. It comes equipped with a self-housed Diavac filter which does not require a special filter room. Piped, wired, and valved at the factory, the filter system need only be positioned and connected when it arrives at the site. The pools can be obtained in a variety of shapes, including "T", "L", Wedge, and "Z".
Chester Products, Inc., Belle Ave. and B & O R.R., Hamilton, Ohio
more products on page 222

What's News in Rubber...



LIGHTWEIGHT, DURABLE, permanently flexible and applied cold — that's the colorful new Butyl roofing system at Longway Planetarium, Flint, Mich., designed by Smith, Hinchman & Grylls Associates, Inc. (Detroit).



PROTECTION FOR BUILDING FOUNDATIONS from both hydrostatic pressure and water infiltration is provided by sheeting of Enjay Butyl rubber. Butyl's high tear strength withstands rough handling on the job site.

Enjay Butyl... for top-to-bottom protection

Top-to-bottom building protection can be achieved more effectively than ever with a remarkable rubber known as Enjay Butyl — now available from rubber manufacturers in a variety of useful forms including extruded shapes, sponge stock, molded parts, tape and caulking, calendered sheet and latex coating.

Enjay Butyl, when properly compounded and processed, offers outstanding resistance to aging, ozone and oxidation; high tear strength and low permeability to gases and moisture.

Enjay supplies raw material to manufacturers of Butyl rubber products for the building industry. We will be glad to furnish a

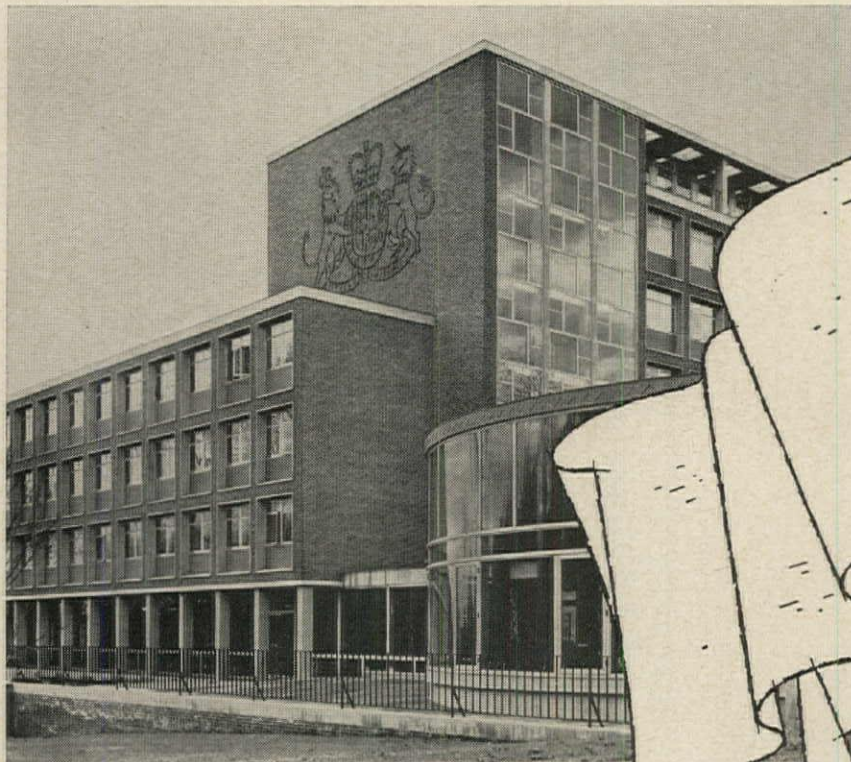
list of reliable manufacturers, or to work with you in the development of new Butyl applications. For your copy of our new folder, "The Versatile Rubber for Modern Building Design," write to Enjay, 15 W. 51st Street, New York 19, New York.

EXCITING NEW PRODUCTS THROUGH PETRO-CHEMISTRY

ENJAY CHEMICAL COMPANY

A DIVISION OF HUMBLE OIL & REFINING COMPANY





UNDER TWO FLAGS . . .

Lehigh Mortar Cement

British Embassy, Washington, D. C.

Architect: Eric Bedford, Chief Architect and W. S. Bryant, Superintending Architect, British Ministry of Works.



Swiss Embassy, Washington, D. C.

Architect: William Lescaze, New York, N. Y.

• The British and Swiss Embassies in Washington are recent examples of fine masonry work on which John McShain, Inc. has used Lehigh Mortar Cement.

They know from long experience that the workability and plasticity of Lehigh Mortar Cement help masons do top quality work—that its uniformity and durability contribute to clean, strong, weathertight walls.

Whether you design embassies or ranchers, traditional or modern, you can approve Lehigh Mortar Cement with assurance that it exceeds the most rigid Federal and A. S. T. M. specifications. Lehigh Portland Cement Company, Allentown, Pa.

Contractor: John McShain, Inc.,
Philadelphia, Pa. and Washington, D. C.

Lehigh Mortar Cement: Eckington Building
Supply Co.,
Washington, D. C.

Ready Mix Concrete: Howat Concrete Co.,
Washington, D. C.

**LEHIGH
CEMENTS**

- LEHIGH MORTAR CEMENT
- LEHIGH EARLY STRENGTH CEMENT
- LEHIGH PORTLAND CEMENT
- LEHIGH AIR-ENTRAINING CEMENT

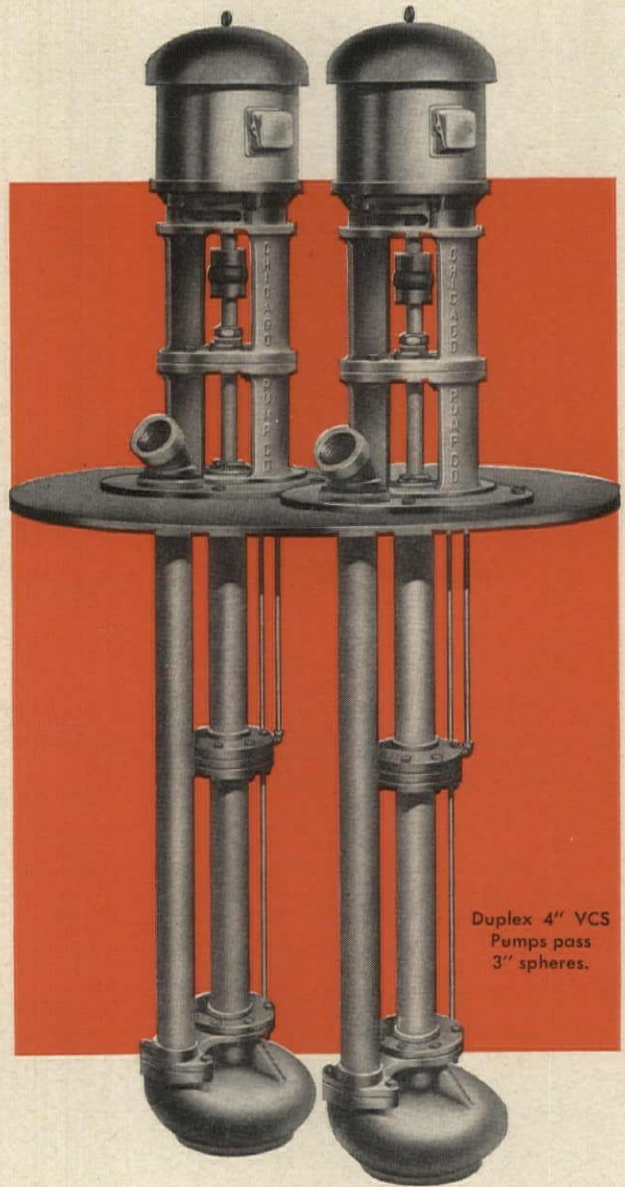
"Chicago"
from

A complete line of Vertical Enclosed Shaft Non-Clog Pumps

FOR HEAVY DUTY PUMPING OF SEWAGE, SUMP AND STORM WATER, CONTAINING SOLIDS

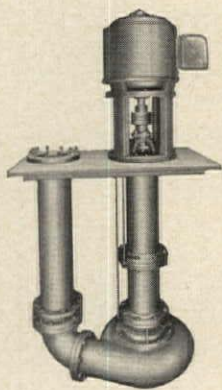
Chicago pumps are durably built units featuring micrometer ball bearing adjustment of rotating elements, tongue and groove registering, and oversized bearings. The Chicago two port non-clog impeller remains in natural hydraulic balance thruout the pumping cycle. All impellers are also dynamically balanced.

Manufactured by Chicago Pump, with over 52 years of unequalled experience in the design and manufacturing of non-clog pumps. Backed by a reputation for excellence in design and outstanding service to its thousands of satisfied customers. Write for Bulletin 124-G.



Duplex 4" VCS Pumps pass 3" spheres.

Capacities: 50 to 5000 GPM
Heads to 105 feet.



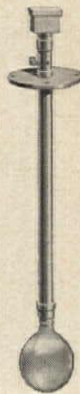
10" VCS Pumps pass 5" spheres.

HIGHER CAPACITY VCS PUMPS

Pumps range from 4" thru 10" discharge size available for single or duplex installation. All pumps incorporate the same high grade materials and machined tolerances for extended life.

EXCLUSIVE SEALTRODE

"Sealtrode", sealed electrode floatless pump controller is a dependable control for any installation. Electrodes cannot become coated or insulated with grease, oil, soap or solids. Elements never corrode as they are sealed from the liquid being pumped.

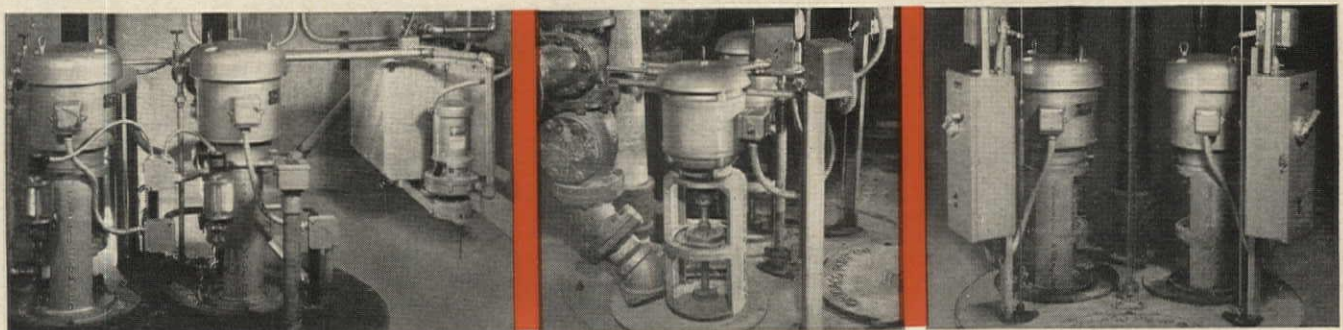


HYDRODYNAMICS DIVISION

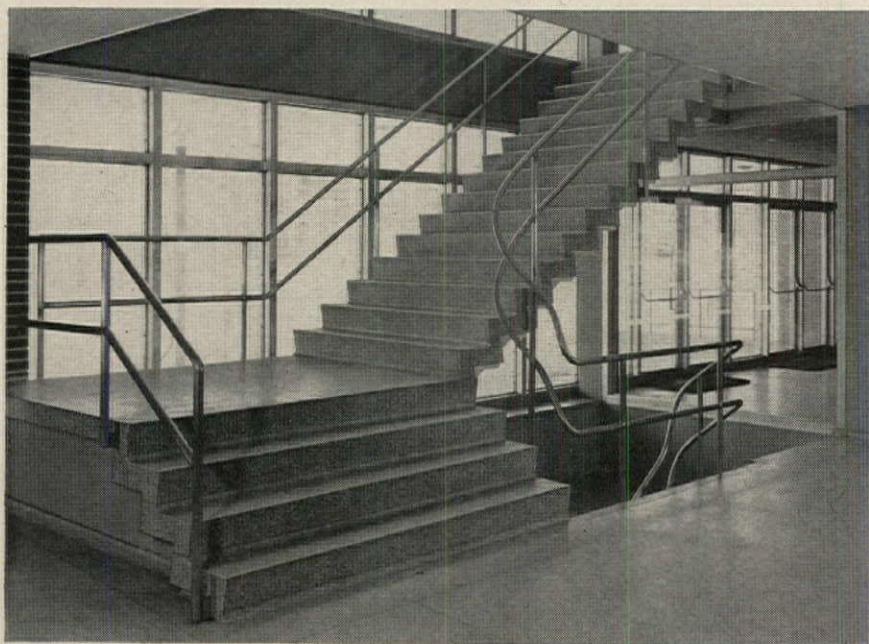
CHICAGO PUMP

622M Diversey Parkway • Chicago 14, Illinois

©1961—CP-FMC



ALUNDUM **NON-SLIP** TERRAZZO



... provides permanent **WALKING SAFETY!**

In all types of buildings where foot traffic is very heavily concentrated, stairways, floors and ramps of NORTON ALUNDUM Terrazzo Aggregate provide a rare combination of lasting beauty and permanent walking safety.

The use of Norton ALUNDUM Aggregate makes it possible to enjoy the outstanding advantages of terrazzo in many locations where its regular use might not be practical. Used in the surface in the proper proportion, Norton ALUNDUM Aggregate provides terrazzo walking areas, either monolithic or precast, which are permanently non-slip, wet or dry, and exceptionally resistant to wear.



Illustrations show precast treads of Norton ALUNDUM Terrazzo in the Dunbar Vocational School, Chicago, Ill.

Full specifications in Norton Pages in SWEET'S or on request from us or from the National Terrazzo and Mosaic Association, Washington, D. C.

NORTON COMPANY
WORCESTER 6, MASS.



NON-SLIP FLOORS

ALUNDUM AGGREGATE for Terrazzo and Cement • ALUNDUM STAIR and FLOOR TILE
ALUNDUM and CRYSTOLON Non-slip Abrasives

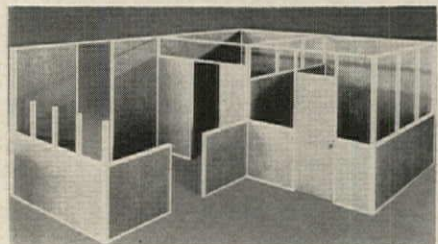
Product Reports

continued from page 218



Erosion Control

The photographs above show a ditch in Kansas before and after a G-B Ultracheck glass fiber blanket held installed. The glass fiber blanket held silt and soil in the bottom of the ditch and permitted grass to take hold and grow. The manufacturers suggest that their product be used for bridge berms, flumes, flood-control dikes, and similar situations where erosion is a problem. The blankets come in continuous rolls, 6 ft. wide and 150 ft long. *Gustin-Bascon Mfg. Co., 210 W. Tenth St., Kansas City, Mo.*



Partition Components

A new partition system of prefabricated components, called Commercial Easy Wall Partitions, provides seven components composed of a rigid insulating board core faced on each side with pre-finished hardboard. *Simpson Timber Co., Seattle, Washington*

more products on page 226



Holds 9,385 times its own weight. Permanently.

The fastener you see is a Ramset #3601. It weighs a scant 120 grains, red tip and all.

Because we're a conservative lot—and build in safety factor upon safety factor—we rate its designed holding power at 160 pounds, anchored in 3,500 psi concrete. Almost 10,000 times its own weight.

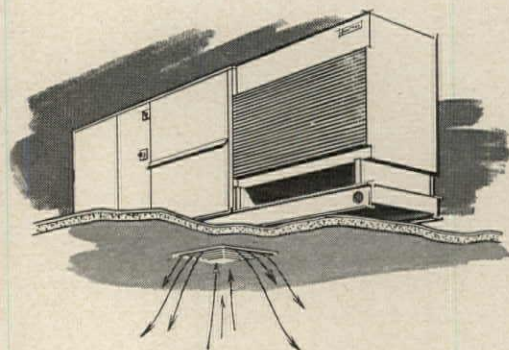
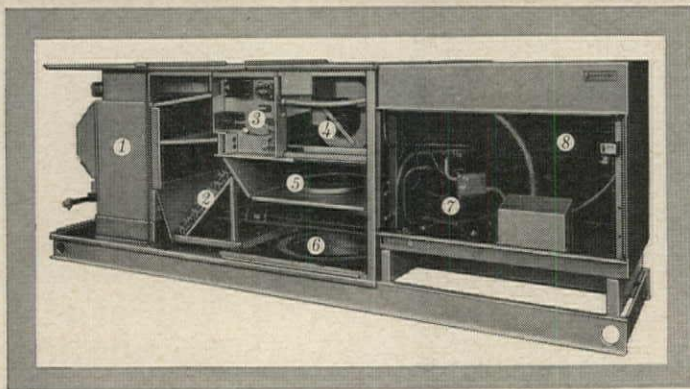
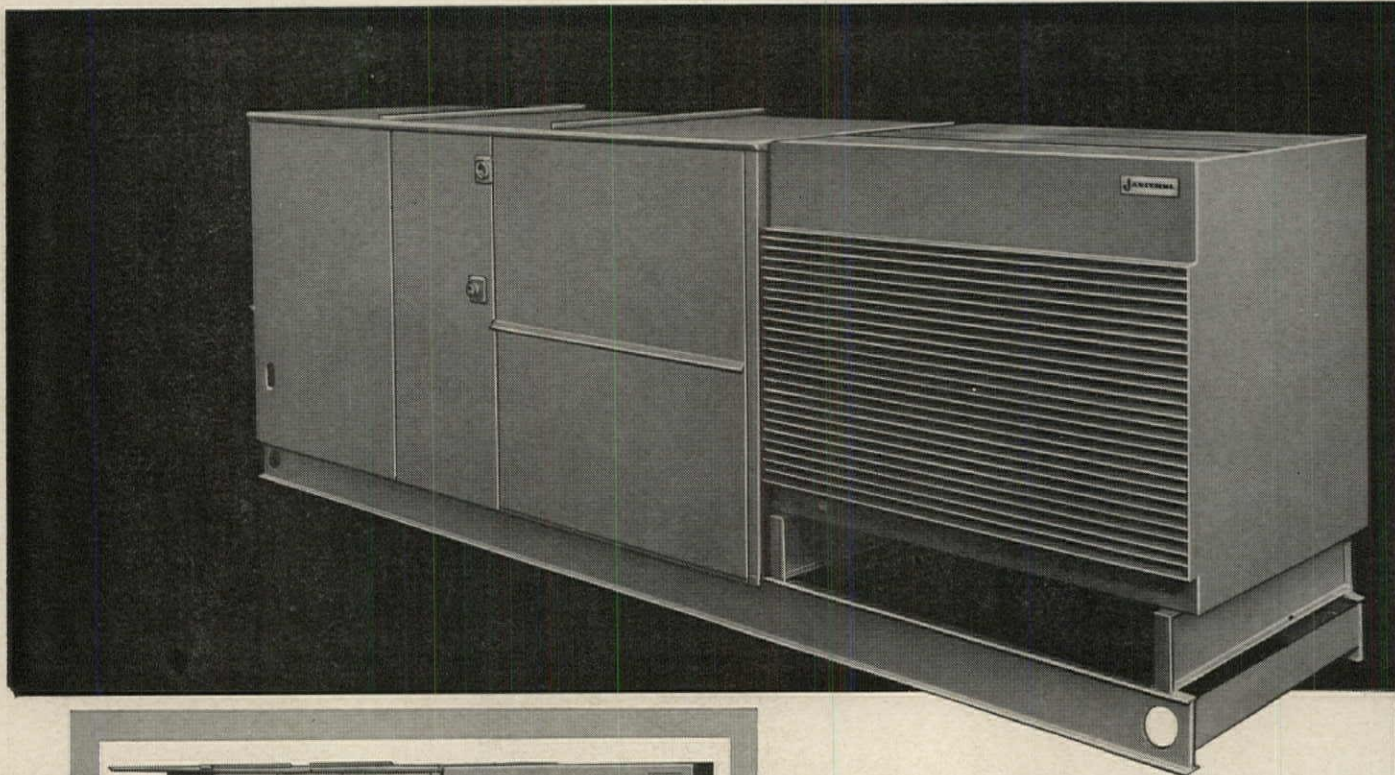
(In a series of controlled tests, our austempered Eye Pin averaged 2,000 pounds holding power in tension. Almost 120,000 times its weight. Hmmm. Move over Archimedes. With a big enough fastener, we could hold the world.)

Astonishingly enough, Ramset powder-driven fasteners do their job with

incredible speed. "In place" in less than 30 seconds. For setting an Eye Pin. For fastening steel to concrete or steel, wood to concrete or steel.

For a copy of our informative, 48 page "Fastener Handbook," with specifications and recommended applications, simply drop us a line on your company letterhead.

Ramset WINCHESTER-WESTERN DIVISION **clin**
301-1 Winchester Ave., New Haven 4, Conn.



SKYLINER FEATURES

- 1 **Armor-coated heating section**—gas-fired, two-pass, heavy-duty type, with all joints and surfaces coated, inside and out, with fire-fused A-19 corrosion resistant ceramic coating. A.G.A. approved.
- 2 **Cooling evaporator coil**—aluminum finned-copper tube type for peak performance. Located downstream of heating unit, adjacent to outlet.
- 3 **Factory-wired electrical panel**—standardized and tested to simplify installation and eliminate costly troubleshooting.
- 4 **Permanently lubricated blower assembly**—heavy-duty, lube-packed, sealed ball bearings in blower and motor eliminate need for periodic lubrication service.
- 5 **Fresh air inlet**—provides for blending of filtered make-up air with return air. Adjustable up to $\frac{1}{3}$ of total volume.
- 6 **Conditioned air outlet**—connects directly to a short, pre-insulated combination supply-return duct. There are no transmission losses.

- 7 **Quality Compressor**—operates up to 125°F. outside temperatures. Standard Tecumseh or Copeland, easily serviced or replaced in any section of the country.
- 8 **Oversize Condensing Coil**—the larger area dissipates more heat to provide greater cooling efficiency.

TECHNICAL INFORMATION SERVICE

Detailed information and product specification sheets on the Skyliner may be obtained from your local Janitrol representative or by writing the factory. There's no obligation, so why not bring your files up to date?

JANITROL[®]

NEW ROOF TOP HEATING-COOLING SYSTEM HAS BROAD COST & COMFORT ADVANTAGES *for single story buildings*



SKYLINER *by* **JANITROL**

DOESN'T USE INSIDE SPACE...ELIMINATES DUCT SYSTEM...ALLOWS
REDUCTION IN BUILDING HEIGHT...INSTALLS FAST WITH LESS LABOR

Whether you should specify the Janitrol Skyliner depends on the job, of course. But if the budget is tight, and you're looking for ways to chop costs without penalizing quality, by all means consider the Skyliner.

Shipped completely factory assembled, tested and ready for installation on the roof, the Skyliner "package" provides *really* economical heating, cooling or year 'round conditioning. Conditioned air is circulated through a ceiling diffuser (located beneath the unit) in the conditioned area. No duct system is needed . . . total building height can be reduced. It has an unobtrusive, low silhouette . . . no stack is required . . . flue gas exhauster is furnished. And not a single cubic foot

of usable inside space is used by the Skyliner system!

One or more Skyliner units may be used to provide a simple, efficient zone-controlled comfort system, with each Skyliner controlled by its individual thermostat. A wide range of capacities is offered to match the needs of each zone.

The Skyliner is completely enclosed in a weatherproof, insulated, aluminum steel cabinet. The unit has been operationally tested in 60 m.p.h. winds and for two hours at 12-inch/hr. rainfall. No water or sewage service, no refrigerant piping or charging and no complicated electrical wiring are required. All important factors in cutting costs and speeding up installation!

Here are Some Points to Remember about the Janitrol Skyliner

Multiple Unit Zone Control Type—You can have an individually sized and controlled unit for each occupancy area. Each unit operates only for its own zone, without standby or transmission losses. Multiple units assure continuity of service, since the shut down of a single unit for service or maintenance will not affect performance of other units.

Low Installed System Cost—A Skyliner packaged system offers substantial savings over a conventional site-fabricated central system by:

- Elimination of equipment room.
- Elimination of duct system.
- Elimination of wiring, assembly, installation and checking of individual system components.
- Elimination of water or sewage service.

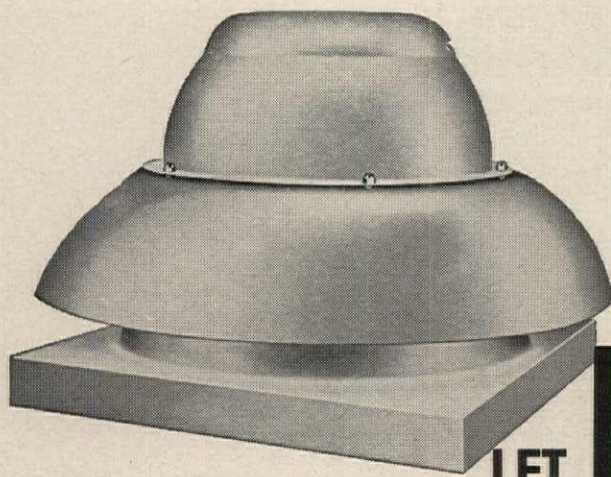
Meets or exceeds national standards—All Skyliner units carry the certification seal for capacity and performance according to the rigid standards of the Air-Conditioning and Refrigeration Institute. Components are listed by Underwriters' Laboratory and the American Gas Association.

Leasing Plan to Save Capital Investment
A complete Skyliner system can be leased on a long-term basis. Permits owners to keep their working capital working.

HEATING & AIR CONDITIONING

A DIVISION OF MIDLAND-ROSS CORPORATION, COLUMBUS 16, OHIO
IN CANADA: MOFFATS LTD., TORONTO 15





Send for
FREE Data Book

LET **BURT**

MAKE AIR WORK FOR YOU

↓
391 Standard Models To Choose From
PLUS Complete Facilities To Design
And Manufacture Special Ventilators

BURT VENTILATOR	TYPE	CAPACITY (CFM)	SIZES	MODELS	DISCHARGE
FREE-FLOW GRAVITY	Gravity	113 to 35,560	16	16	Upward
LO-HYT GRAVITY	Gravity	AS REQUIRED	18	18	Downward
MONITOR	Gravity	MADE TO ORDER		1	Upward
MONOVENT (Ridge)	Gravity	48 to 5,184	15	15	Upward
REVOLVING	Gravity	123 to 10,931	17	17	Sideward
STANDARD GRAVITY	Gravity	35 to 24,890	19	19	Upward
THERMAVENT	Gravity	MADE TO ORDER		2	Upward
CENTRIFLOW	Power	65 to 36,430	56	184	Downward
FREE EXHAUST FAN	Power	5,000 to 75,550	7	17	Upward
FREE FLOW FAN	Power	1,040 to 99,050	15	35	Upward
LOW TYPE	Power	337 to 47,400	15	60	Downward
STANDARD FAN	Power	685 to 15,000	10	10	Upward

There is a type of Burt Ventilator to meet any ventilating problem that Roof Ventilators can solve. Burt's specialized engineering, equipment and craftsmanship—from 60 years of designing and building ventilators—is your assurance of complete satisfaction. Cost economies are assured from almost 400 *standard* models that are quickly available. Write for Burt's Complete Line Data Book—it's free!

VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES
The Burt Manufacturing Company

48 E. South Street

Akron 11, Ohio

MEMBER AIR MOVING & CONDITIONING ASSOCIATION, INC.

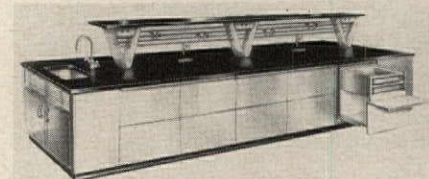
Product Reports

continued from page 222



Permanent Forms

The photograph above shows the placing of Wheeling's Tensilform prior to the pouring of a concrete roof deck. The uniform sides and ends are designed for overlapping and a neat fit. With a hung plaster ceiling, such an assembly can achieve a four hour fire rating, left exposed, it has a one hour rating. Tensilform is available in uncoated and galvanized finishes. Other Wheeling products include Super-Rib steel roof decking and Wheeling Long Span, designed to span up to 22 ft. *Wheeling Steel Co., Wheeling, W. Va.*



Laboratory Equipment

The Metalab Equipment Co. has announced their Style-Scope and Mobilescope series of laboratory wall tables and center tables. Instead of conventional drawers and cupboards, the units either slide or roll out and are fitted with removable plastic trays. Mobilescope units are portable and independent of the structural members of the table, so that supplies and apparatus can readily be rolled to any lab station where they are needed. *Metalab Equipment Co., Hicksville, L. I., N. Y.*

more products on page 230

engine power BY CATERPILLAR

WHEN POWER FAILS CAT ELECTRIC SETS KEEP MIAMI INTERNATIONAL BRIGHT



Miami International Airport, Dade County, Florida, one of the busiest airports in the United States and a world leader in air cargo. Building above is protected from loss of utility power with a dependable Cat Diesel Electric Set.

In the path of Caribbean hurricanes, one of the world's busiest air terminals has a higher than average risk of utility power loss. Cat Electric Sets were part of the planning; power outages last only a few seconds as automatic controls furnish emergency power to equipment and lighting in the main passenger terminal. The Cat D397 provides power as long as the utility power is interrupted.

In another terminal area—the Pan American World Airways' ticketing and passenger section—a Cat D311 Electric Set stands by to immediately provide power in the event utility power fails.

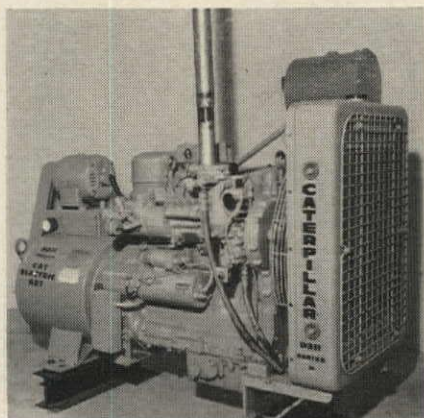
When you plan buildings where people gather to work, to live, to shop, to dine, to relax or to recuperate, add dependable Cat Diesel or Natural Gas Electric Set protection. A Cat Standby Set has the power to safeguard lives, prevent panic, looting and loss of revenue.

It enhances the value of the building. A single power loss will attest to the wisdom of Cat standby power.

When properly installed, Cat Electric Sets will start in as little as 6 seconds after a utility power outage occurs. Installation requires little or no special or additional construction. Fuel storage for Cat Diesels requires no special protection against explosion because they use non-explosive diesel or furnace oil. Cat Natural Gas Engines are equally simple to install.

The cost of owning, as well as the cost of buying, Cat standby power is low. Caterpillar's 4-cycle operation . . . the fuel system—the inherent design simplicity—mean extreme reliability with a minimum of maintenance.

Caterpillar power is dependable power. See Sweet's File for specification data. Call your Caterpillar Dealer for specification help and complete information.



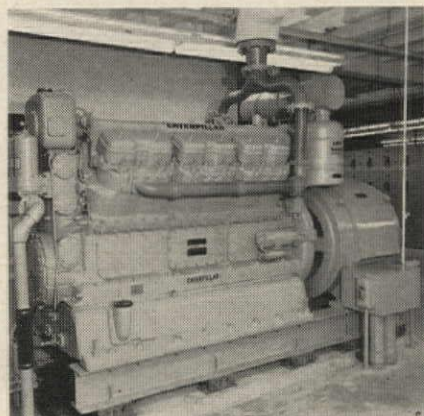
A Caterpillar D311 Electric Set, rated at 30 KW, furnishes additional power for the Pan American World Airways terminal area. There are Cat Electric Sets rated up to 600 KW suitable for application either as single or multiple units for larger KW loads.

This Cat Diesel Electric Set—Model D397—can furnish 350 KW to Miami International Terminal. This set safeguards people in building, enables work to continue and furnishes power to guide air traffic.

Engine Division, Caterpillar Tractor Co.,
Peoria, Illinois, U. S. A.

CATERPILLAR

Caterpillar and Cat are Registered Trademarks
of Caterpillar Tractor Co.



The RUBEROID Co. Mastic Tile Division
Announces the Awards in the
\$25,000 3rd Annual
Design Competition

to stimulate a major contribution to "Long-range
Planning for the Medical Care facilities in the Community"



The objective of the RUBEROID-MASTIC program has been to encourage architectural thinking in terms of projects of public interest. The First Annual Competition was "Better Living for the Middle Income Family." The 1960 competition enlarged on this with "Education for Youth and Adult Recreation for all the Family." Now, the 1961 Competition provides still further demonstration of how the architectural profession can contribute importantly to community improvement.

THE JURY READING FROM LEFT TO RIGHT:

E. Todd Wheeler, FAIA, Chairman, AIA Committee on Hospitals and Health
• James J. Souder, AIA • Donald E. Neptune, AIA • Raymond Brown,
School of Hospital Administration, University of Chicago • Donald S. Nelson,
FAIA • A. Gordon Lorimer, FAIA, Professional Advisor.

NATIONAL AWARDS

- Grand Prize . . \$10,000** { Victor A. Cusak, AIA, and Charles J. Luckman Associates
 Ronald Meza Beverly Hills, Calif.
 James S. Moore, AIA Medical Planning Associates
 Beverly Hills, Calif.
- Second Prize . . \$5,000** { Jimmie W. Bruza, James F. Knight Oklahoma State University
 James S. Daley and William C. Watson, Jr. Stillwater, Okla.
- Third Prize . . . \$2,500** { John V. Shoeris, AIA Harley, Ellington, Cowin & Stirton, Inc.
 Detroit, Mich.
 William J. Johnson, ASLA, and Johnson/Roy
 Clarence Roy, ASLA Ann Arbor, Mich.

\$500 Merit Awards

1. Miller Edward Gerardy and Richard W. Cramer Oklahoma State University, Stillwater, Okla.
2. Masao J. Itabashi and Harutun Vaporciyan Smith, Hinchman & Grylls Assoc., Inc., Detroit, Mich.
3. Alan Bentley Glass, Forrest L. Johns and David M. Griffin Oklahoma State Univ., Stillwater, Okla.
4. Pacifico Bacalzo and Borivoj Rieb A. Epstein & Sons, Inc., Chicago, Ill.
5. Marvin Berman, AIA, and Stanley S. Kogan, AIA Berman & Kogan, Los Angeles, Calif.
6. { Ted Granzow Skidmore, Owings, & Merrill, New York, New York
 Robert D. Guss, Jr. Edward Durell Stone, New York, New York
 Dellas H. Harder Ohio State University, Columbus, Ohio

CITATIONS

1. Stanley E. Abercrombie, Jr. and John M. Ellis Massachusetts Institute of Technology, Cambridge, Mass.
2. Firoz Rustum Mistry Lester C. Haas, AIA, Shreveport, La.
3. David Leash Merrill Jew, San Francisco, Calif.
4. Earl Matthews Farnham University of Illinois, Urbana, Ill.

SPECIAL STUDENT AWARDS

- First Prize \$2,000** { Alan Bentley Glass Oklahoma State University
 Forrest L. Johns and David M. Griffin Stillwater, Okla.
- Second Prize . . \$1,000** { Miller Edward Gerardy and Oklahoma State University
 Richard W. Cramer Stillwater, Okla.
- Third Prize \$500** { Don Dommer and North Dakota State University
 Gordon Kovell West Fargo, N. D.

\$250 Merit Awards

1. Stanley E. Abercrombie, Jr. and John M. Ellis Massachusetts Institute of Technology, Cambridge, Mass.
2. Blythe S. Brewster Pratt Institute, Brooklyn, N. Y.
3. John L. Lawler University of Minnesota, St. Paul, Minn.
4. William E. Pedersen, Jr. University of Minnesota, St. Paul, Minn.



Ready in late 1961. Elaborate 14" x 11" album brochure reproducing prize-winning plans in large scale and full detail. (Limited quantities of 1959 and 1960 award brochures still available.) Write on your company or professional letterhead, include \$1.00 to cover mailing and handling cost, to: Award Brochure, The RUBEROID Co., 733 Third Ave., New York 17, N. Y.

The RUBEROID Co. manufacturers of Matico Floor Tile and **RUBEROID®** Building Products
 733 THIRD AVE., NEW YORK 17, N. Y.

WILL YOUR BUILDINGS BE ADEQUATE WHEN WATER RATES SKYROCKET?



Read these plain facts about the coming water shortage—and how you can prepare your buildings for it right now.

By 1970, water consumption in the U.S. will increase 25%. Yet available water will increase only 10%. One sure consequence of this shortage-to-be: boosted water rates.

Will your buildings be ready for these increased water rates? Not if they're still pouring water wastefully through uncontrolled showers and fixtures! For the only way to keep operating costs down when water rates go up is to use less water.

There is a way to specify less water in showers and fixtures . . . and still assure a completely satisfying flow!

The answer is a remarkable device called Autoflo.® Available in Speakman fittings, it reduces water consumption by 50%—yet the user cannot tell!

With Autoflo the flow of water flexes its one moving part, a neoprene diaphragm (B) on nylon orifice (C) . . . maintaining a set rate of flow regardless of inlet pressure.



In a single shower, used daily, Autoflo saves over 6,000 gallons a year

	water p.s.i.	average shower time	gallons used per minute	gallons used per shower	gallons used annually	gallons saved annually with Autoflo
conventional shower	50	5 min.	8	40	14,600	6,387.5
Speakman shower with Autoflo	50	5 min.	4.5	22.5	8,212.5	

And remember, this is just one shower used once daily! The savings are far greater with multiple installations and/or more frequent use. Best of all, Autoflo savings don't stop with shower water alone. Autoflo also lowers fuel costs, stretches hot water supplies, and reduces overload on waste disposal systems and septic fields at the same time!

Autoflo is available now in a wide range of famed Speakman showers and plumbing fittings. Get full details before you specify a single plumbing item on your next project. Mail coupon today!

SPEAKMAN COMPANY

WILMINGTON 99, DELAWARE

In Canada write Cuthbert-Speakman, Montreal 3, Canada

mail this now

SPEAKMAN COMPANY, Dept. AR, Wilmington 99, Delaware

Please send me your free Autoflo catalogue S-99-A.

Name _____

Company _____

Address _____

City _____

Zone _____

State _____

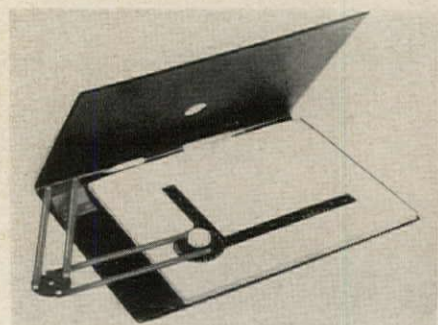
Product Reports

continued from page 226



Portable Photocopier

The Anken Co. has introduced a portable photocopying machine built into an attaché case. It weighs 12½ pounds and its dimensions are 17½ by 12¾ by 4¾ inches. The company also produces a second model, called the Contura, which contains an attachment for copying large sheets and pages from bound volumes. *Anken Chemical & Film Corp., Newton, N. J.*



Portable Drafting Machine

A small portable drafting machine for 8½ by 11 in. paper is being marketed by the Draftette Co. The scale and machine are of aluminum, the case is vinyl, and the whole unit weighs only a pound and a half. *Draftette Co., P.O. Box 794, Beverly Hills, Calif.*

Miniature Lamp

The Tensor model 5979 sub-miniature All Purpose Utility Lamp is a small sized, but high intensity, light source. It can be folded so that it is 3 in. high by 7 in. long by 2 in. wide. The lamp shade is 1¼ in. in diameter and uses a G.E. 55 bulb. The foot-long arm rotates at its base, and at an elbow joint, and the lamp housing can also be rotated. *Tensor Electric Development Co., 1873 Eastern Parkway, Brooklyn 33, N. Y.*



This floor-ceiling construction resists fire for 3 hours or more

Whenever fire-resistance is a primary requirement . . . the Bethlehem Open-Web Steel Joist construction shown above is hard to beat. It provides fire protection of 3 hours or more, as required for Class A fireproof structures such as stores, schools, hospitals, and apartments.

The top slab is 2½-in. reinforced concrete. Ceiling is a 1-in. layer of gypsum-vermiculite plaster applied on metal lath and proportioned in the range 2:1 to 3:1 gypsum to heat-

expanded vermiculite by weight. Bethlehem Slabform provides an excellent solid steel centering for the slab.

The nearest Bethlehem sales office will be glad to give you full details on both steel joists and Slabform or any other of the many steel products made by Bethlehem for building construction. And, if you wish, one of our engineers will visit you and discuss your building. No obligation, of course.



for Strength
... Economy
... Versatility

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
Export Sales: Bethlehem Steel Export Corporation

BETHLEHEM STEEL



FROM THE LEADER . . .
A CREATIVE CLASSIC IN
EXTRUDED ALUMINUM . . .

NEW



by **TITUS[®]**

Staccato

LINE

LINEAR AIR DIFFUSERS

Sharp clear notes of vibrant extruded aluminum—highlighted against a recessed background of anodized black. Available in *endless patterns* to harmonize with, or accent, any architectural motif. That's superb new Titus Staccato Line . . . with *design so decidedly different IT GIVES A STARTLING NEW DIMENSION TO THE LINEAR CONCEPT!*

And here's air diffusion efficiency to match the breathtaking beauty! Staccato Line is *perfect for in-line use on sidewall or ceiling* . . . for heating, cooling or ventilating.

Available in a wide variety of extruded aluminum border styles. Furnished in many standard widths, in any length.

© DESIGN COPYRIGHT 1961, TITUS MFG. CORP.



MODEL C-4001

MODEL C-4000



Staccato Line opens a vast new world of linear design freedom to architects and

MODEL C-4002



engineers. Select from an unlimited number of core patterns and border styles to

MODEL C-4003



develop your own individuality of design . . . or match any motif.

TITUS MFG. CORP. WATERLOO, IOWA

Branch Mfg. Plants—Hialeah, Florida Terrell, Texas

● Rush new free TITUS STACCATO LINE Linear Diffuser Catalog.

NAME _____

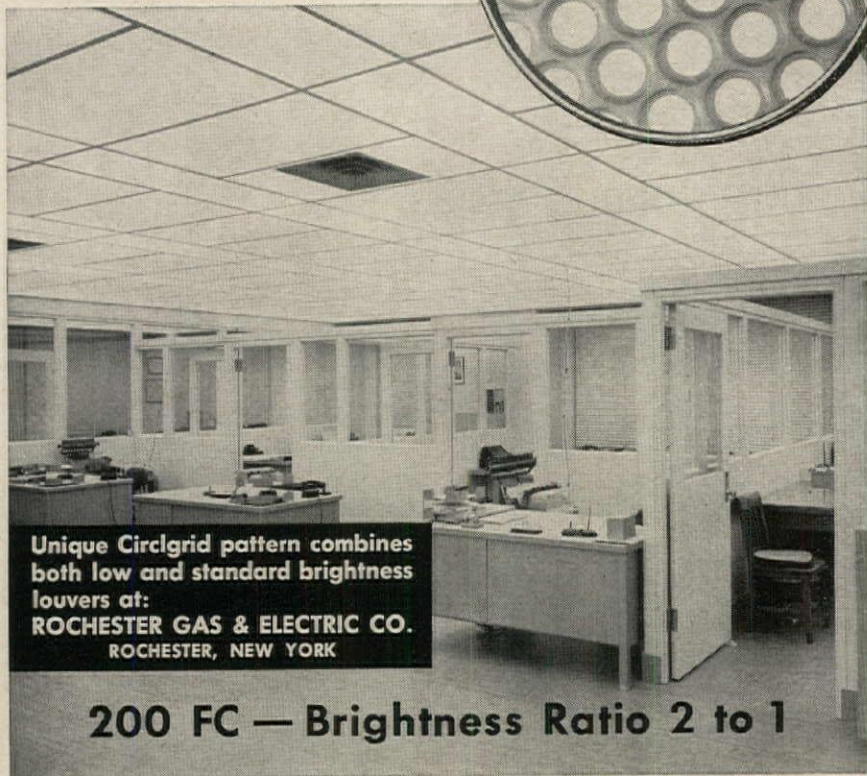
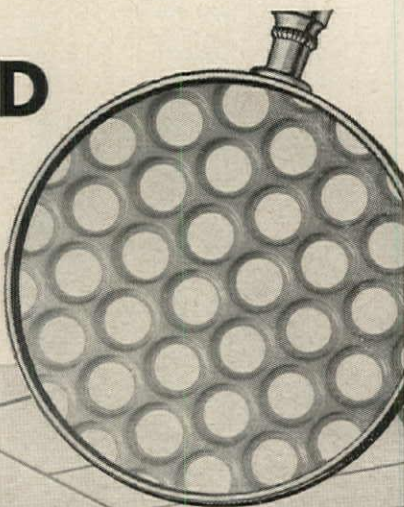
COMPANY _____

ADDRESS _____

CITY _____ STATE _____

CIRCLGRID Light Diffuser

An effective design
tool for the architect



Unique Circlgrid pattern combines
both low and standard brightness
louvers at:
ROCHESTER GAS & ELECTRIC CO.
ROCHESTER, NEW YORK

200 FC — Brightness Ratio 2 to 1

Licencees

ARCHITECTURAL CEILINGS
Long Island City, New York

**BENJAMIN DIVISION
THOMAS INDUSTRIES**
Des Plaines, Ill.

COLUMBIA LIGHTING
Spokane, Wash.

DIFFUSA-LITE CO.
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LIGHTING PRODUCTS, INC.
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LUMINOUS CEILINGS, INC.
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NEWMAN SCHRANZ LIGHTING CO.
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SYLVANIA LIGHTING PRODUCTS
Wheeling, W. Va.

THERMOTANK, INC.
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TRIANGLE ELECTRIC MFG. CO.
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TROPICAL LIGHTING, INC.
Carolina, Puerto Rico

UNITED LIGHTING & CEILING CO.
Oakland, Calif.

JOHN C. VIRDEN CO.
Cleveland, Ohio

LIGHTING DYNAMICS, INC.
Dallas, Texas - City of Industry, Calif.

J. A. WILSON LIGHTING
Erie, Pa.

Circlgrid Light Diffusers offer flexibility in design—by size—by translucencies—by color—and with or without perforations. You'll find Circlgrids extremely rigid yet weighing only 3½ oz. per square foot. Circlgrids, with 500 openings per square foot, circulate cooling air, reduce dust settling 44%, appreciably trap sound in the plenum, and, most important, are approved for installation under sprinklers.

Whatever luminous ceiling pattern you plan, you can be sure that Circlgrid will give up to 25% more comfort light than other louvers.



Write for sample
and illumination
test data.

Box 655, Erie, Pa.



Division—The Wilson Research Corp.

Office Literature

continued from page 198

Plexiglas Signs

Rohm & Haas Co. has published a handbook of technical information on the design, lighting and assembly of signs made from Plexiglas. Although intended primarily for sign companies, the booklet should be useful to anyone interested in sign construction. *Rohm & Haas Co., Philadelphia 5, Pa.**

Heat Exchangers

A new 16-page bulletin on U-tube heat exchangers has been published by Killebrew Engineering Co. The exchangers have solid bronze baffles or tube supports as a standard feature. The bulletin contains sizing information, dimensions, and a selection chart that indicates the lowest-cost unit for the desired capacity. *Killebrew Engineering Co., 8640 Pardee Lane, St. Louis 26, Mo.*

Shower Fixtures

The Logan Mfg. Co. has released a series of brochures describing their multiple unit shower fixtures. Included are descriptions of both surface-mounted and free-standing types, and the company's line of "vandalproof" fittings. *Logan Mfg. Co., P.O. Box 111, Glendale, Calif.*

Dust Filter Selection

The Mellon Institute has made available reprints of E. R. Frederick's article, "How Dust Filter Selection Depends on Electrostatics," which originally appeared in *Chemical Engineering. Office of Public Relations, Mellon Institute, 4400 Fifth Ave., Pittsburgh 13, Pa.*

Plastic Window Units

The Plyco Co. has published a file of information on their plastic window units and fabricated wall systems. It includes details, photographs of installations, reports of tests, and outline specifications. *Plyco Co., Elkhart Lake, Wis.*

Compressed Air and Gas

A revised and expanded third edition of the *Compressed Air and Gas Handbook*, 592 pages, 323 illustrations, is available at \$8.00 from the *Compressed Air and Gas Institute, 55 Public Square, Cleveland 13, Ohio*

*Additional product information in *Sweet's Architectural File*

more literature on page 238

▶ Great new things are shaping up in concrete block



Hamden Mart Branch of The Second National Bank of New Haven. Architect: Rossetti & Mileto, Bristol, Conn. Grille block by The Plasticrete Corporation, Hamden, Conn.

Atlas Masonry Cement provides the right mortar

New designs in masonry construction require both a functional and decorative material. That's why more architects are utilizing concrete grille block indoors and out. These attractive masonry units can be used for solar screens, accent walls, partitions, perforated facades. They can be used to control light, air, wind or sun — substantially reducing air-conditioning and heating costs. Inquire about sizes and designs at your local block producer. □ For laying up grille block, specify ATLAS MASONRY CEMENT for mortar. It helps produce a smooth, workable mix; saves labor; cuts waste; assures a good bond; provides joints that are uniform in color. Complies with ASTM & Federal Specifications. For literature, write: Universal Atlas, Dept. M, 100 Park Avenue, New York 17, N. Y.

M-85

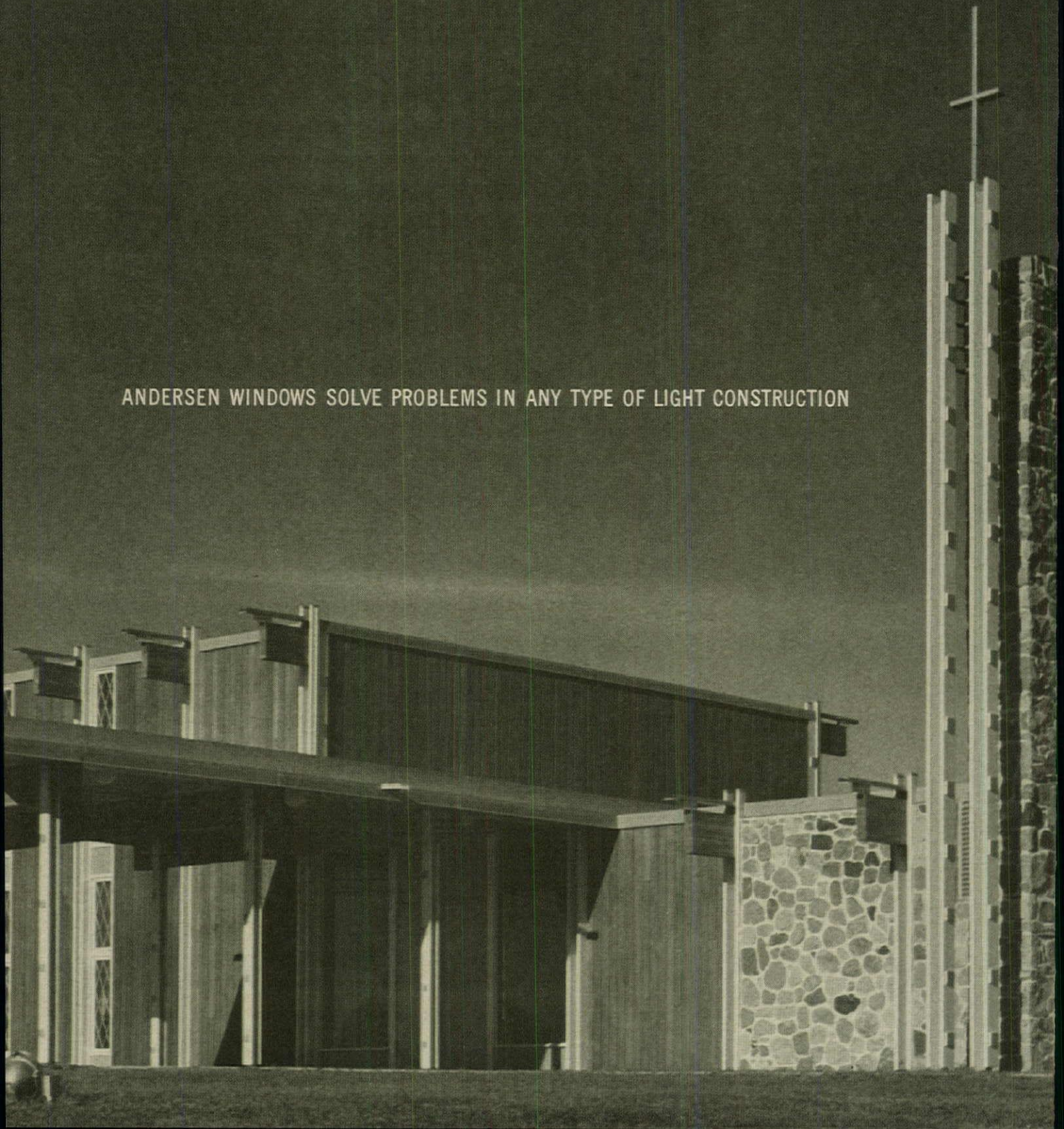
"USS" and "Atlas" are registered trademarks.



**Universal Atlas Cement
Division of
United States Steel**

OFFICES: Albany • Birmingham • Boston • Chicago • Dayton • Kansas City • Milwaukee • Minneapolis • New York • Philadelphia • Pittsburgh • St. Louis • Waco

ANDERSEN WINDOWS SOLVE PROBLEMS IN ANY TYPE OF LIGHT CONSTRUCTION





*Our Savior's Lutheran Church
Madison, Wisconsin
Architects: Ames, Torkelson, Nugent*

Removable diamond- lights heighten "Gothic Appearance" of this contemporary church

*Stock Andersen Casements
are used in sanctuary of
Our Savior's Lutheran
Church in Madison, Wis.*

The diamond-light wood grilles in these Casements are removable. Normal maintenance and painting can be done easily and at minimum cost.

The handsome finely-finished millwork complements the natural beauty of the rough stone, wood siding and the dramatic post and beam construction.

Andersen Windows offer maximum design flexibility for any light construction project; 7 kinds of windows, 30 different types, 685 cataloged sizes, thousands of combinations.

Check Sweet's File—and contact your local distributor for Tracing Detail File and additional information. Andersen Windows are available from lumber and millwork dealers throughout the United States and Canada.

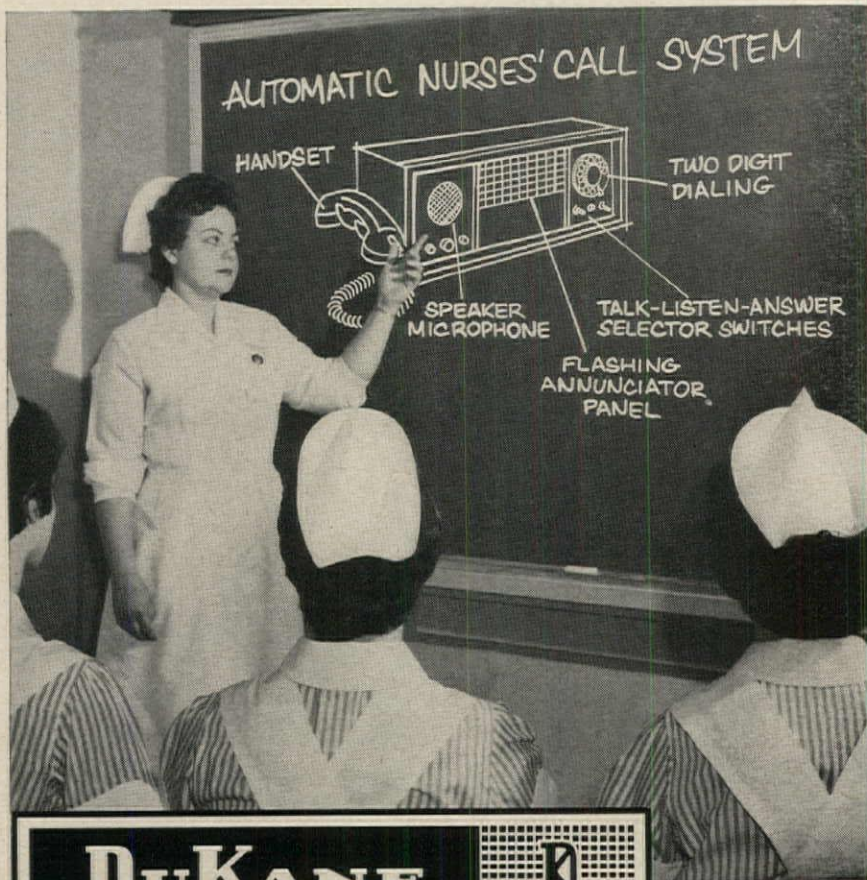
Andersen Windows

ANDERSEN CORPORATION • BAYPORT, MINN.

America's most wanted windows



*windows by
Andersen
or equal*



More than 300 reasons why DUKANE AUTOMATIC NURSES' CALL SYSTEMS provide unmatched performance in nurse-patient contact!

The installation of a DUKANE Automatic Nurses' Call System boosts staff efficiency and increases the functional potential of the nursing staff. Needless trips are automatically eliminated through two-way, audio-visual, nurse-patient communication. Incoming patient calls are registered audibly and visually on Master Station annunciator panel and outside corridor lights. Strategic positioning of answering stations eliminates needless steps for nursing staff in answering simple patient needs. Combine all of these much-wanted features with a nationwide network of DUKANE Sales Engineering Distributors and you have assured customer satisfaction. Over 300 local DUKANE Distributors are ready to assist you with planning a nurses' call system to meet your need and budget, supervision of installation and servicing your needs for complete satisfaction for years to come.



AUTOMATIC NURSES' CALL SYSTEM

DUKANE Systems provide human engineered nurse-patient fingertip control, functional flexibility, installation simplicity, improved service, increased staff efficiency and speed plus boosting staff morale and patient security.

DUKANE
CORPORATION

Dept. AR-91 St. Charles, Illinois

WRITE TODAY FOR COMPLETE INFORMATION

Office Literature

continued from page 234

Fire Doors

The Overly Co. has published a 1961 edition of their Fire Doorater, which contains a review of the company's products tested by the Underwriters' Laboratories. A guide to the selection of hardware for fire doors and fire-exit doors is given in chart form, examples of Overly's 90 different door styles are shown, and information is provided on U/L label requirements for hollow metal doors. *Overly Manufacturing Co., 580 West Otterman, Greensburg, Pa.**

Heating and Ventilating

A comprehensive catalog of their heat diffusers and large heating and ventilating units has been produced by the Carrier Co. It contains selection charts for steam and hot water coil capacities, fan motor ratings, and dimensions of all models and sizes available. The units, designed for commercial and institutional use, have air capacities ranging from 1,500 to 32,000 cfm, Btu capacities from 47,000 to 2,990,000. *Carrier Air Conditioning Co., Syracuse, N. Y.**

Timber Foundation Piles

The American Wood Preservers Institute has issued a second edition of their book on pressure treated timber piles for permanent foundations, revised and brought up to date from its first publication in 1955. The book contains 12 articles on various aspects of the subject and costs \$1.50. *American Wood Preservers Institute, 111 W. Washington St., Chicago 2, Ill.*

**Additional product information in Sweet's Architectural File*

Literature Requested

The Washington State Parks and Recreation Commission, Construction Division, 522 South Franklin St., Olympia, Washington, wishes to be placed on mailing lists for literature and catalogs published by manufacturers of building materials.

From Northern California to Northern Maine...

REDWOOD'S k FACTOR OF 0.76 HELPS CUT HEATING COSTS. In regions where sub-zero temperatures and roof-high drifts are commonplace, redwood is held in high esteem by architects and cost-conscious boards. Not only does Certified Kiln Dried redwood provide exceptional insulation value (redwood one-inch thick equals concrete 15 inches thick), but it can also be depended upon to stay weathertight and resist weather checking. And in every part of the country, in every climate, the friendly warmth and natural beauty of redwood have made it the hallmark of the best in contemporary school architecture.

Architect: Alonzo J. Harriman, Inc.

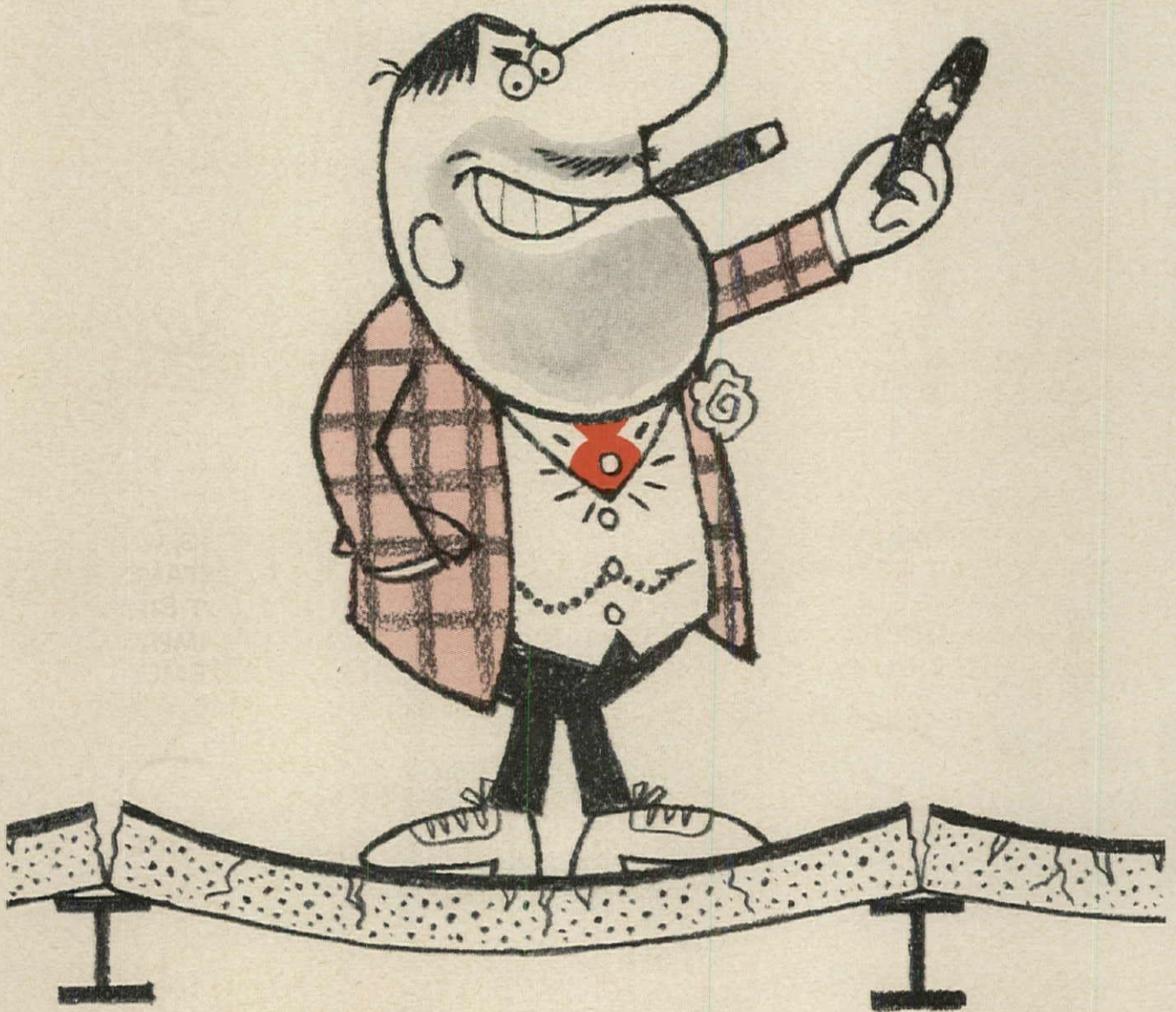


*All the wonderful warmth of wood
is best expressed in redwood*

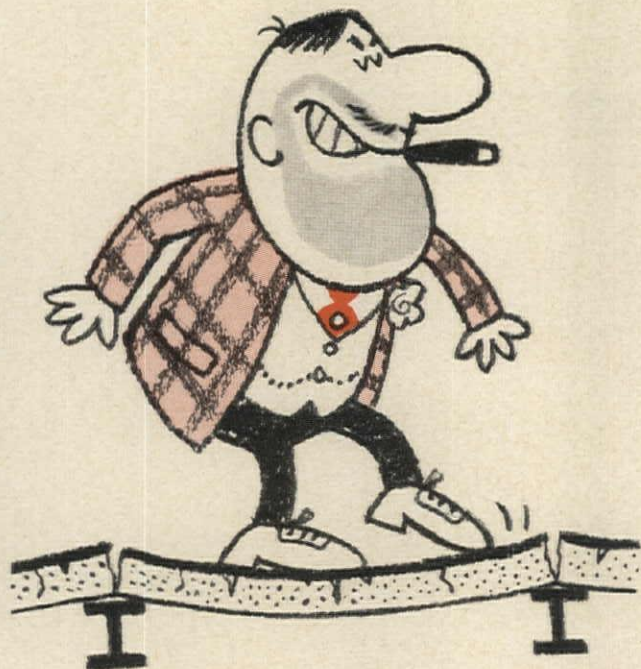
CALIFORNIA REDWOOD ASSOCIATION • 576 SACRAMENTO STREET • SAN FRANCISCO 11
CRA-TRADEMARKED CERTIFIED KILN DRIED REDWOOD

The California Redwood Association coordinates the research, forest management, grading and consumer service activities of these member mills: WILLITS REDWOOD PRODUCTS CO. • GEORGIA-PACIFIC CORP. • UNION LUMBER CO. • THE PACIFIC LUMBER CO. • ARCATA REDWOOD CO. • SIMPSON TIMBER CO.

SURE, WE CAN LEAVE THE
REINFORCEMENT OUT OF THE ROOF DECK
(HAVE A CIGAR). WHO'S TO KNOW?
AFTER ALL, YA' CAN'T SEE REINFORCEMENT.
SO WE'LL SAVE A FEW BUCKS
(HAVE A CIGAR).



I MEAN, LOOK AT THIS ROOF DECK HERE. WE LEFT THE REINFORCEMENT OUT OF IT. SO IT DEFLECTS A LITTLE, SO WHO CARES? (HAVE A CIGAR).



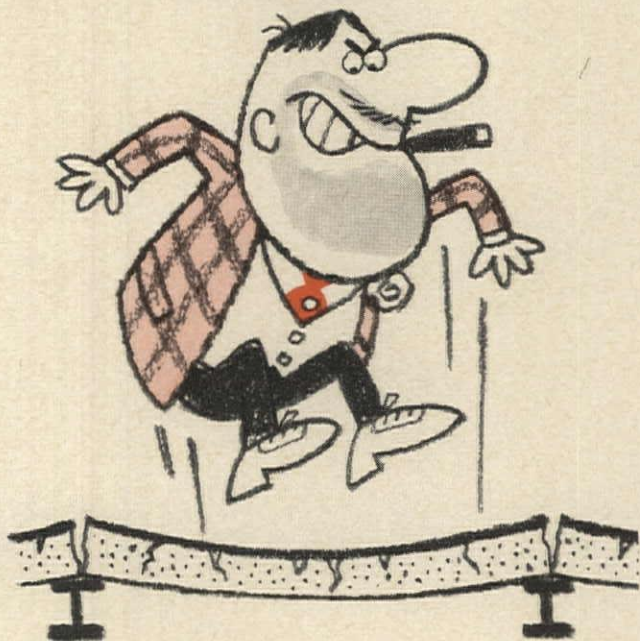
CRACKS? THEY ALL CRACK. THESE CRACKS JUST HAPPEN TO BE BIGGER. BUT SO WHAT? (CAREFUL, DON'T GET YOUR FOOT CAUGHT).



YOU CAN'T GET AN HOURLY FIRE RATING WITHOUT REINFORCEMENT? DON'T BE SUCH A WORRY WART. HOW MANY BUILDINGS BURN DOWN?



LISTEN, STOP WORRYING, WHAT DO YOU NEED IMPACT RESISTANCE FOR? WHO COMES UP HERE BUT BIRDS? BESIDES IT'S GOT ENOUGH IMPACT RESISTANCE WITHOUT REINFORCEMENT. LOOK, I'LL SHOW YOU.

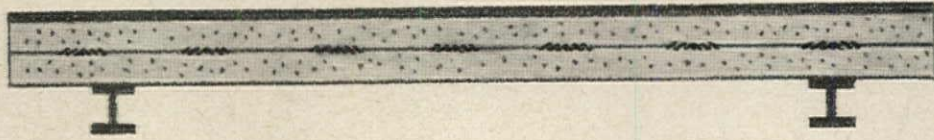


This advertisement published in the interest of people who want a roof over their heads, not around their ears.

KEYSTONE STEEL & WIRE COMPANY

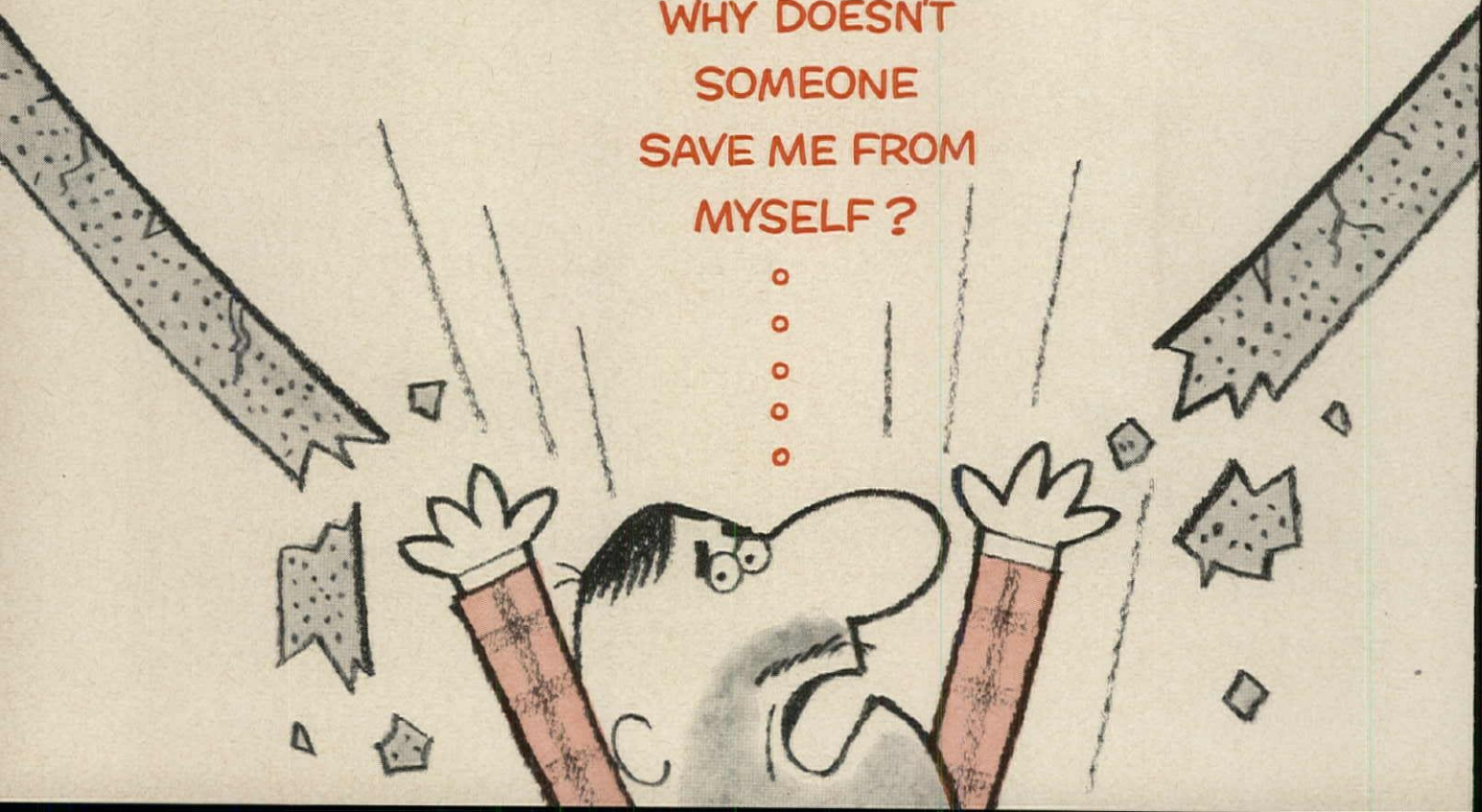
Peoria, Illinois

MANUFACTURERS OF KEYDECK



(a remarkably good roof deck reinforcement)

WHY DOESN'T
SOMEONE
SAVE ME FROM
MYSELF ?




Only MEDUSA Offers PORTLAND CEMENTS

To meet exacting requirements for every concrete and mortar design.

Whether your design calls for gray, white or tinted, plain or waterproofed concrete or concrete units; white or colored mortar to harmonize with certain brick, block, or stone, each use is best met by specifying one of the eleven Medusa Portland Cements listed at the right.

Medusa manufactures more different types of special cements than any other cement manufacturer. An understanding of these cements and their uses enables you to make specifications that assure beautiful, reliable concrete and masonry. Write today for A.I.A. Literature including specifications for any of these Medusa Portland Cements.



- Gray
- White
- Waterproofed Gray
- Waterproofed White
- Gray Air-Entraining
- White Air-Entraining
- High Early Strength
- Stoneset White Masonry Cement
- Brikset Gray Masonry Cement
- White Tile Grout Cement
- White Dry Wall Grout Cement

Also Waterproofing Powder and Paste

HENRY FORD HOSPITAL GARAGE, Detroit, Michigan
 Architect: Albert Kahn Associates, Inc., Detroit, Mich.
 Gen. Contractor: Darin & Armstrong, Inc., Detroit, Mich.
 Sub Contractor: The Truscon Div. of Devoe & Reynolds
 (pre-cast units) Detroit, Mich.



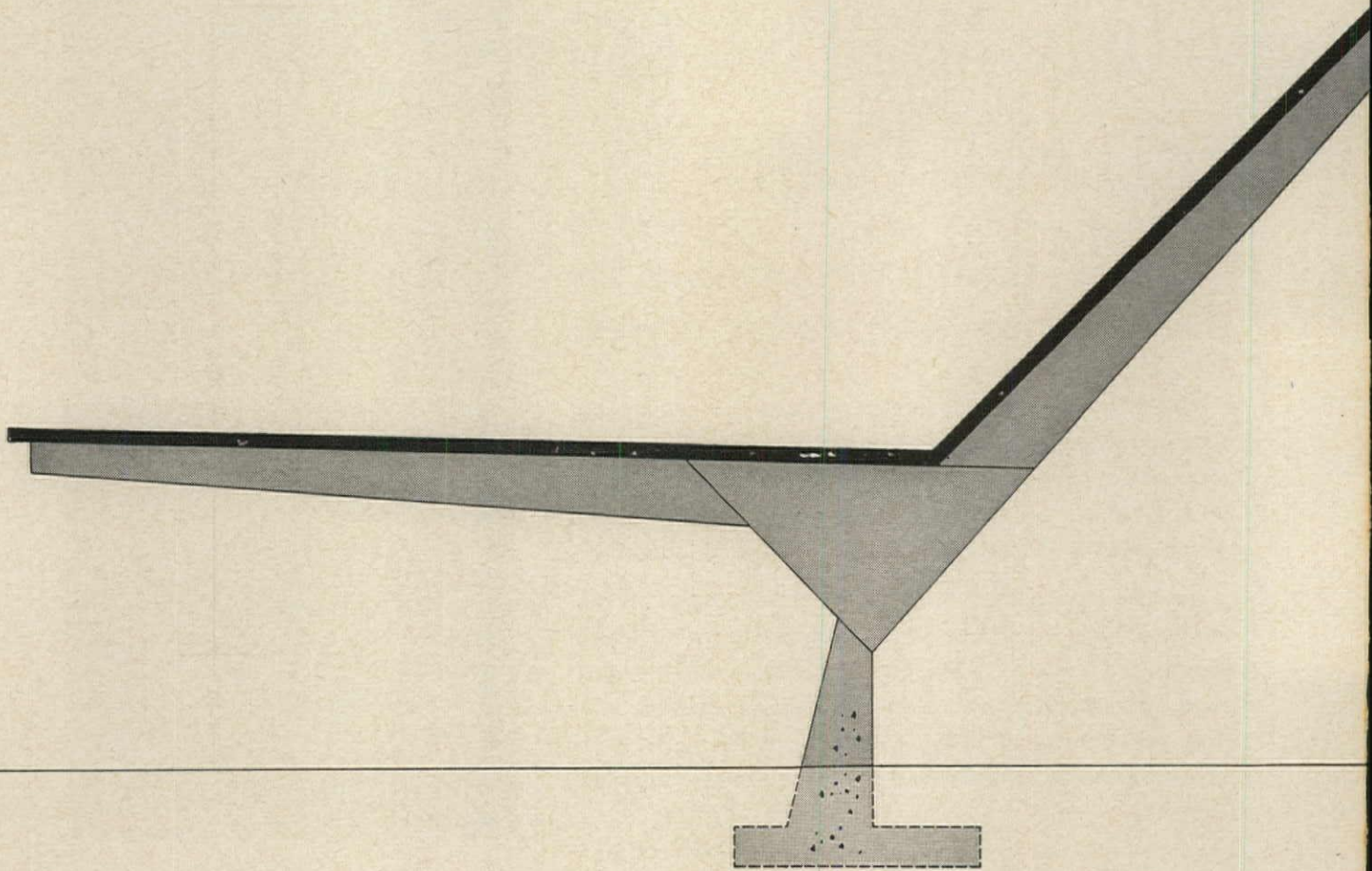
Over 65 years of Concrete progress

MEDUSA PORTLAND CEMENT COMPANY

P. O. Box 5668 • Cleveland 1, Ohio



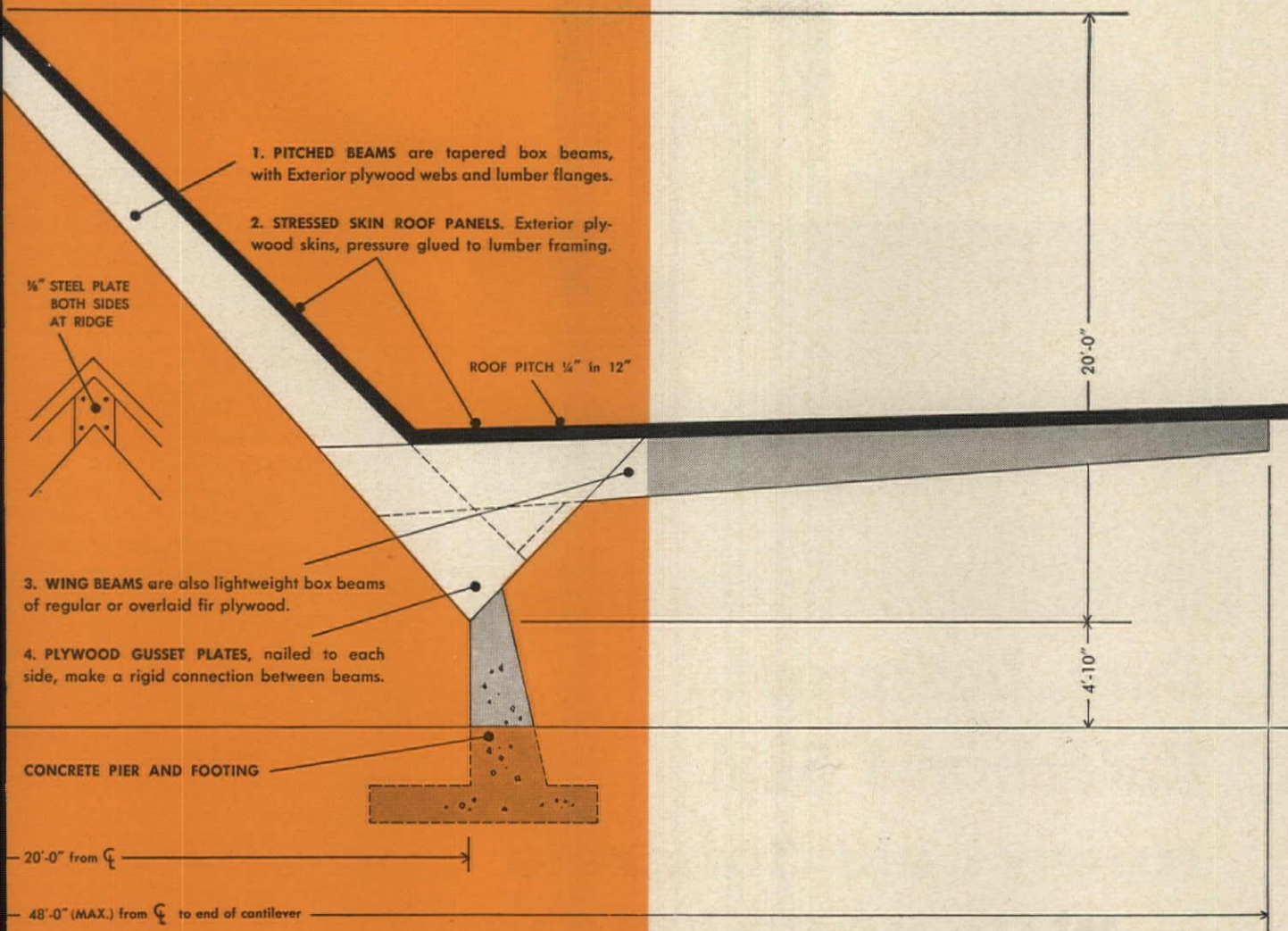
ST. JOHNS CHURCH—United Church of Christ, Freeport, Ill.
 Architect: Weiler-Strang & Associates, Madison, Wisc.
 Genl. Contractor: Kemper & Krueger, Freeport, Ill.
 Sub. Contractor: Vernon Marsh, Freeport, Ill.



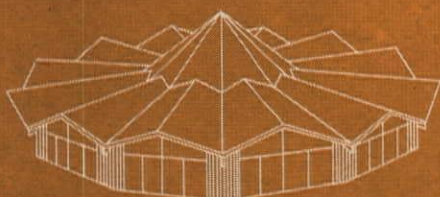
the most exciting ideas take shape in fir plywood



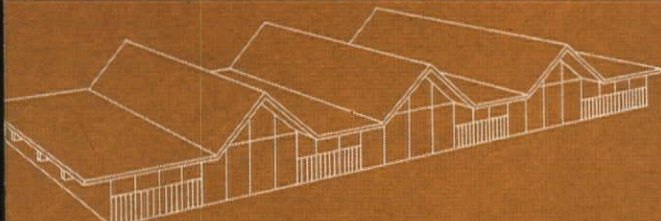
PLAY SHELTER
PARK LODGE ELEMENTARY SCHOOL
Pierce County, Washington
ARCHITECT: Robert Bruce Waring, Tacoma
CONTRACTOR: Korsmo Brothers, Tacoma



THE DELTA SYSTEM PERMITS LIMITLESS DESIGN VARIATIONS



Supermarket has circular folded roof; wings radiate from center.



School is a series of Delta units with cantilevered wings joined.



Pool, under Delta section, is flanked by plywood-vaulted cabanas.

DELTA STRUCTURES—based on a revolutionary new building system keyed to engineered plywood components—combine distinctive appearance, speed and ease of construction and remarkable design flexibility. They also offer important cost advantages.

Named for its dominant triangular profile, the Delta System was developed and engineered by Douglas Fir Plywood Association to meet the need for an attractive, versatile and low-cost commercial-industrial building with large clear floor area and non-load bearing walls. Several Delta structures have been built to date, besides the one shown at left.

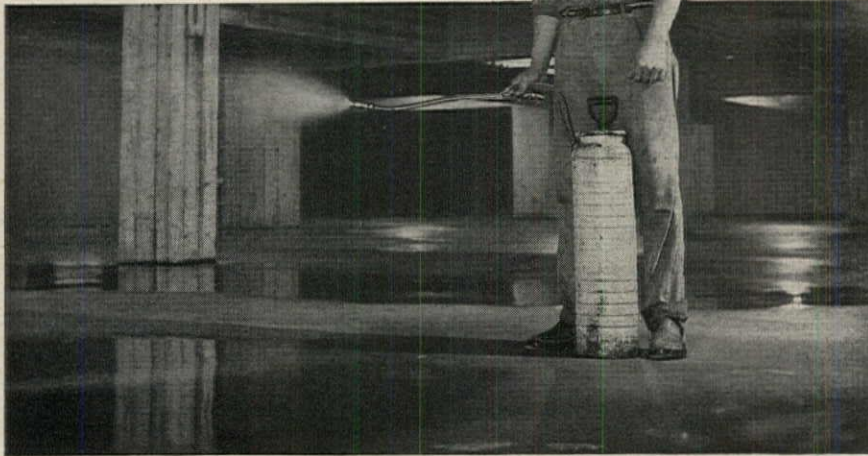
The simplicity of the structural scheme, which depends on only four basic plywood components, permits almost limitless design variations. Length and width may be varied by changing the size and number of basic Delta frames or the length of wing beams. DFPA has prepared design recommendations for 608 structural variations.

For more information on Delta System and other plywood components, and name of fabricator nearest you, write Plywood Fabricator Service, Inc., Chicago 17, Ill. Delta components are made and sold only by PFS licensees, and are available in most parts of the country. For basic plywood design data, write (USA only) Douglas Fir Plywood Association, Tacoma 2, Washington.



ALWAYS SPECIFY BY
DFPA TRADEMARKS

Now...



CANADIAN INDUSTRIES Ltd., Office Building, Montreal. Architect: Green-spoon, Freedlander & Dunne—Montreal. Consulting Architect: Skidmore, Owings & Merrill—New York City. General Contractor: Anglin-Norcross (Quebec) Ltd., Montreal.

Cure, Dustproof, Harden and Seal Newly Laid Concrete in ONE OPERATION

One application of TREMCO TREMCRETE — after final troweling and when floors can be walked on—can cure, dustproof, harden, and seal newly laid concrete floors at an applied cost that is *substantially lower* than the lengthy conventional moisture curing method. Tremcrete dries to a tack-free stage in 2-3 hours . . . possesses superior abrasion resistance . . . protects against wear, most solvents and alkalis . . . repels oils, greases and resists various types of staining commonly found during construction. Cleaning of floors are facilitated prior to turning the building over to the owner. The application of paint, asphalt tile and other decorative coverings can be made directly over Tremcrete treated floors when construction is completed.

An Independent Testing Laboratory reports the following performance of Tremcrete: "After 3 days, more than 97% of the original water content of the slab was still present. After 7 days, more than 95% was still present."

TREMCRETE meets ASTM Specifications C-309-58, Type I. For additional information contact your Tremco Representative or write: The Tremco Manufacturing Company, 10701 Shaker Blvd., Cleveland 4, Ohio or The Tremco Manufacturing Company (Canada) Limited, 220 Wicksteed Avenue, Toronto 17, Ontario. See our Catalogs in SWEET'S.

TREMCO

PRODUCTS AND TECHNICAL SERVICES FOR
BUILDING MAINTENANCE & CONSTRUCTION

"When you specify a Tremco Product
... you specify a Tremco Service!"

The Record Reports

On the Calendar

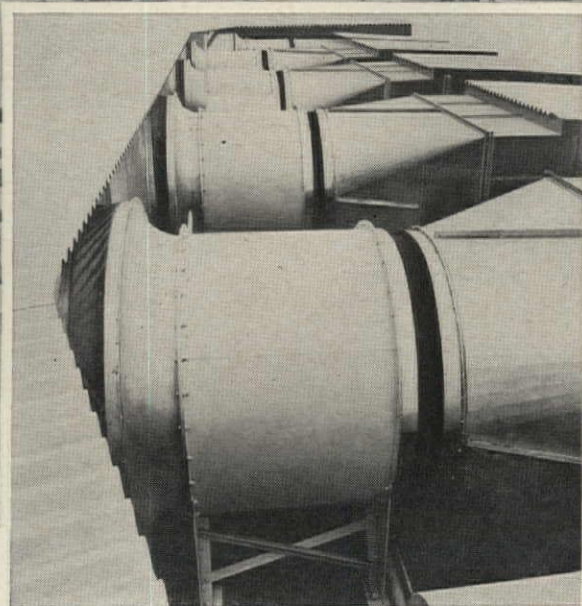
September

- 10-15 Engineering seminar on Structural Aspects of Architectural Engineering — Pennsylvania State University, University Park, Pa.
- 20-22 1961 annual convention, The Producers' Council, Inc.; theme: better communication of the elements of a company, its capabilities and its products to the customer—Pittsburgh
- 24-28 63rd annual conference, American Institute of Park Executives; theme: "Parks and Recreation—The Years Ahead"—Rochester, N.Y.
- 24-29 Annual National Technical Conference, Illuminating Engineering Society—Chase Park Plaza Hotel, St. Louis, Mo.
- 25-28 Fall meeting, the American Welding Society—Adolphus Hotel, Dallas
- 25-28 1961 Industrial Building Exposition and Congress—The Coliseum, New York City
- 27ff International Conference on Heating, Ventilating and Cooling, The Institute of Heating Ventilating Engineers; through Oct. 4—London

October

- 1-6 43rd National Recreation Congress, sponsored by the American Recreation Society and the National Recreation Association; cooperating agencies: Recreation Association of Michigan, Detroit Dept. of Parks and Recreation and Federation of National Professional Organizations for Recreation; theme: "Recreation in a Mobile America"—Cobo Hall, Detroit
- 5-8 Annual meeting, American Society of Industrial Designers; theme: "Design Explorations"—Santa Catalina Island, Calif.
- 6-15 Second Annual Decorating Show, "Decoration & Design 1962," sponsored by the Resources Council of the American Institute of Interior Designers, the New York Chapter

continued on page 25



Six Joy Axivane Fans located on the roof supply up to 600,000 cfm of air for the world's largest air curtain at the Pan American Terminal at Idlewild. Architects for the building were Tippet-Abbett-McCarthy-Stratton. Air door by Sulzer Brothers, Inc.

Joy Axivane[®] Fans create air curtain for world's largest "Doorless-Door" at PAN AM Terminal

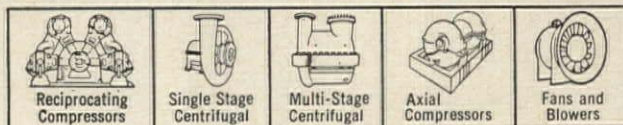
An eighty-nine foot wide air curtain seals out the weather at the Pan American Passenger Terminal at Idlewild. This transparent entrance provides an unobstructed sweep of the entire terminal, and contributes to the effect of the "floating" four-acre canopy roof.

Six Joy vaneaxial type fans supply up to 600,000 cubic feet of air per minute to make this architectural masterpiece possible. Located on the roof, they are controlled automatically to supply the required amount of warm or cool air for an air curtain 89 feet wide, ten feet high and seven feet deep. When the curtain air is heated, (whenever outside temperatures drop below 65°) thermostat elements register any deflection in the curtain,

and the guide vanes automatically change the angle of air flow to correct the deflection. In warm weather, a second control system which is actuated by elements sensitive to wind direction and velocity control these vanes.

Joy Axivane Fans are engineered to operate with complete dependability in the pressure and volume ranges needed for such applications as the Pan American Terminal's unusual doorway. Whenever you have a ventilating problem, it will pay you to consult with your Joy representative. Joy Axivane Fans will provide superior service in any installation. For complete details on these fans, write for Bulletin 2560-98.

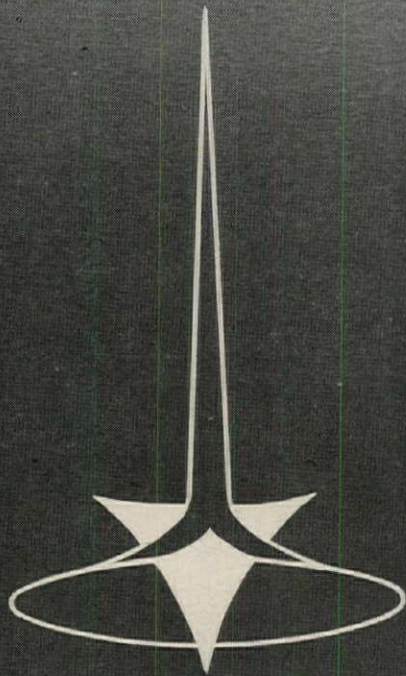
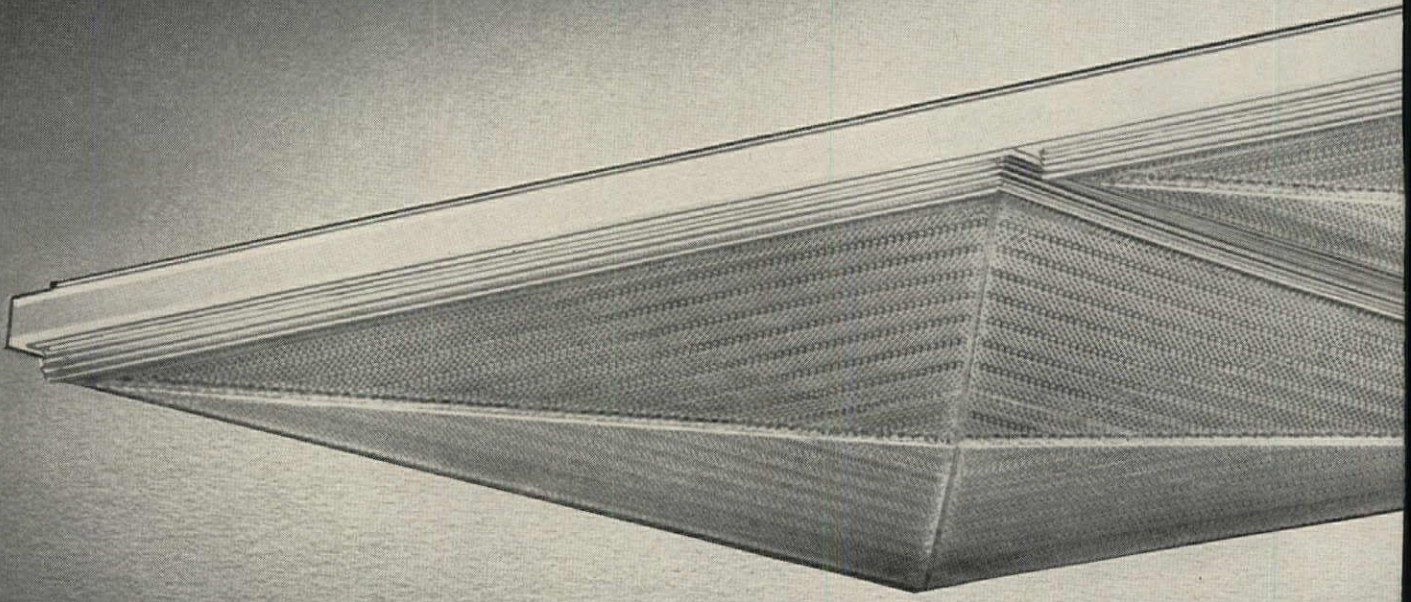
AIR MOVING EQUIPMENT FOR ALL INDUSTRY

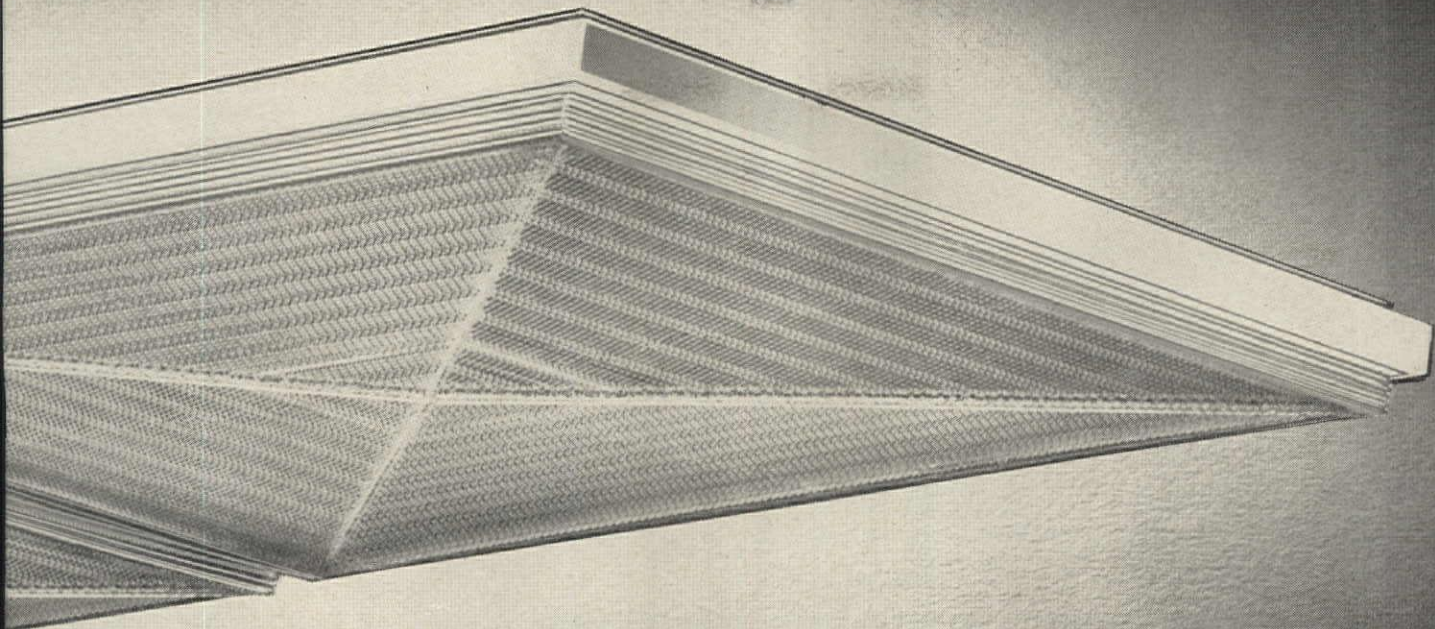


JOY

Joy Manufacturing Company
Oliver Building, Pittsburgh 22, Pa.

In Canada: Joy Manufacturing Company
(Canada) Limited, Galt, Ontario





A TRIUMPH OF LIGHTING FIXTURE DESIGN FROM DAY-BRITE

Introducing



TIARA

... the new measure of lighting quality
for offices, stores and schools

Just 3 3/8" slim! New Day-Brite TIARA provides a clean, modern look never before possible with a surface-mounted unit.

A distinctive glow around its wafer-thin frame softens brightness for high visual comfort, and gives the fixture a luminous floating appearance. Pure enchantment for any interior!

Precision *Pyramid* lenses create additional ceiling interest. There is no noticeable variation in sur-

face brightness... no hot spots. Lighting quality is definitely Day-Brite.

For those who want the very finest, it's new Day-Brite TIARA... the crowning achievement in lighting fixture design. For complete information, contact your Day-Brite representative or write for free 8-page TIARA booklet. *Day-Brite Lighting, Inc.*, 6260 N. Broadway, St. Louis 15, Mo., and Santa Clara, Calif. In Canada: *Amalgamated Electric Corp., Ltd.*, Toronto 6, Ont.

DAY-BRITE

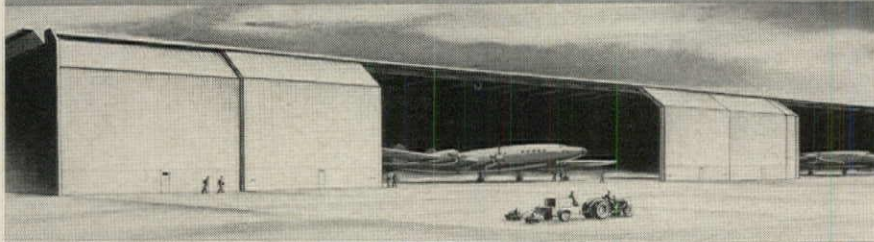
NATION'S LARGEST MANUFACTURER OF COMMERCIAL AND INDUSTRIAL LIGHTING EQUIPMENT

Lens by Holophane Co., Inc.

PEELLE PRODUCTS

in the New York International Airport and other Port of New York Authority Projects.

A remarkable planning, architectural and engineering achievement. Peelle is proud of its effort to deliver a better job more economically in its field of motorstairs and specialized doors . . . a partial listing of installations follows:

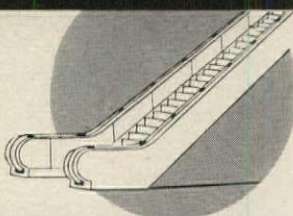


PEELLE MOTORIZED HANGAR DOORS

Above a portion of the 820' x 50' TWA hangar access door. The complete installation consists of four banks of horizontal sliding doors, three panels to a bank. Peelle also manufactured and installed doors for the Pan American Jetliner hangar and Lockheed hangar.

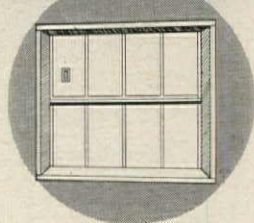
PEELLE MOTORSTAIRS

Peelle manufactured and installed the motorstairs in the Terminal Building. In the **PORT OF NEW YORK AUTHORITY BUS TERMINAL**, when expansion is completed, 41 Peelle Motorstairs will expedite great crowds.



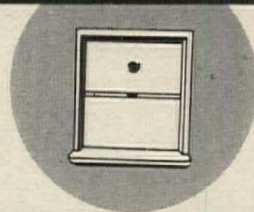
PEELLE FREIGHT ELEVATOR DOORS AND CAR GATES

Motorized and manual installations. **INTERNATIONAL AIRPORT**, TWA Hangar 12, Arrival and Airline Wing Bldg., Hangar 8, American Airlines Passenger Terminal, Pan-American Airways, Brass Rail Restaurant Golden Door • **NEWARK AIRPORT** - Passenger Terminal • **UNION FRT TERMINAL**, Station 3 • **SPRING ST. BUILDING**, Frt Station #2 • **PCRT OF NEW YORK AUTHORITY**, Elevators 11, 12, 19 & 24 • **INLAND TERMINAL**.



DUMBWAITER DOORS & PASS WINDOWS & OTHERS

INTERNATIONAL AIRPORT, Air France Campaigne, Eastern Air Lines, International Hotel, Swiss Air Transport, Hangar #15 • **BUS TERMINAL** (trash chute doors) • **GEORGE WASHINGTON BRIDGE**, Damper operating mechanism in ventilation building.



PEELLE PLANNING SERVICE

Without obligation, Peelle Engineers will suggest the most advantageous use of its products in new or existing installations. Call or write.



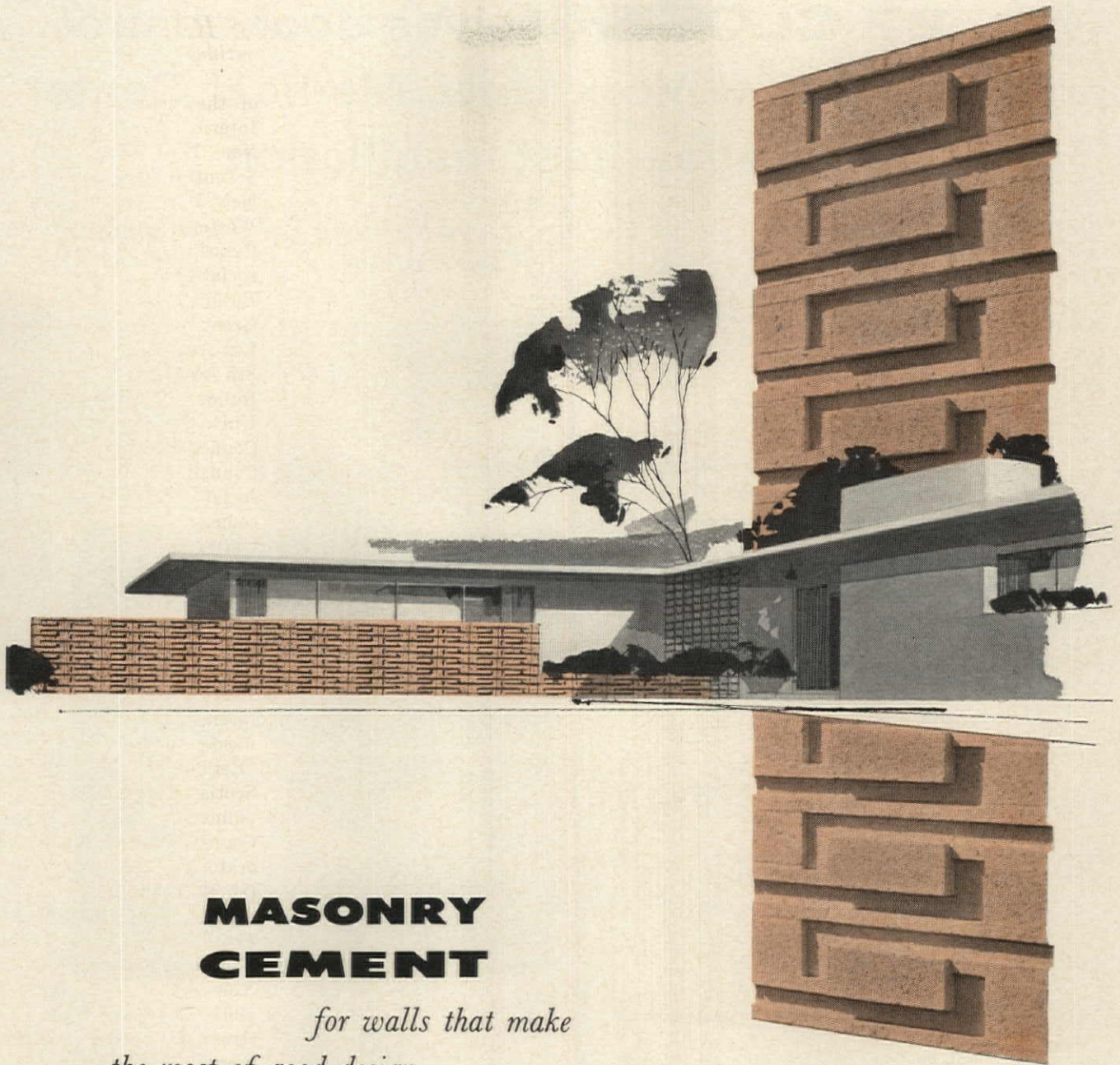
THE PEELLE COMPANY, 47 Stewart Ave., Brooklyn 37, N. Y.
RICHMOND FIREPROOF DOOR CO., Richmond, Indiana

The Record Reports

continued from page 246

- of the American Institute of Interior Designers and the *New York Herald Tribune*—Seventh Regiment Armory, New York City
- 7-10 Western Building Industries Exposition, sponsored by Associations of the Western Building Industries Council—Great Western Exhibit Center, Los Angeles
- 9-18 8th Advanced School for Home Builders, co-sponsored by Univ. of Illinois Small Homes Council—Building Research Council and the National Association of Home Builders, in cooperation with the Division of University Extension—University of Illinois campus, Urbana, Ill.
- 10-12 National Conference on Standards, American Standards Association—Rice Hotel, Houston
- 10-13 1961 National Planning Conference, Community Planning Association of Canada; theme: "Regional Planning"—Nova Scotian Hotel, Halifax
- 10-14 Annual meeting, American Council of Independent Laboratories, Inc.—Sheraton Hotel, Philadelphia
- 12-16 Annual conference, National Trust for Historic Preservation—Waldorf-Astoria Hotel, New York City
- 15-19 1961 convention, the Prestressed Concrete Institute; theme: "New Opportunities in Structural Design"—Cosmopolitan and Brown Palace hotels, Denver
- 16-20 Annual convention, American Society of Civil Engineers; theme: "Metropolis-1980"—Hotel Statler Hilton, New York
- 16-20 1961 National Safety Congress, annual convention of the National Safety Council—Chicago
- 23-27 National Metal Exposition—Detroit
- November* _____
- 1-3 14th regional meeting, American Concrete Institute—Dinkler-Tutweiler Hotel, Birmingham, Ala.

continued on page 258



MASONRY CEMENT

*for walls that make
the most of good design*

Better walls start with better mortar. To be sure of top quality, specify mortar made with masonry cement. This cement is a blend of materials that gives a good balance of the desirable properties in mortar. Except for sand and water, everything is delivered in one bag. Mixing calls for no special skills . . . when workability is right, water content is right. It makes a "fat" mortar that promotes better workmanship. Tighter joints, uniform color and dependable strength are assured. For the best in wall performance with any masonry unit—concrete, brick, tile, stone or glass—architects everywhere specify masonry cement. Write for free literature. (U.S. and Canada only.)

PLAN TO
ENTER



1962

Concrete Industries. HORIZON HOMES Program

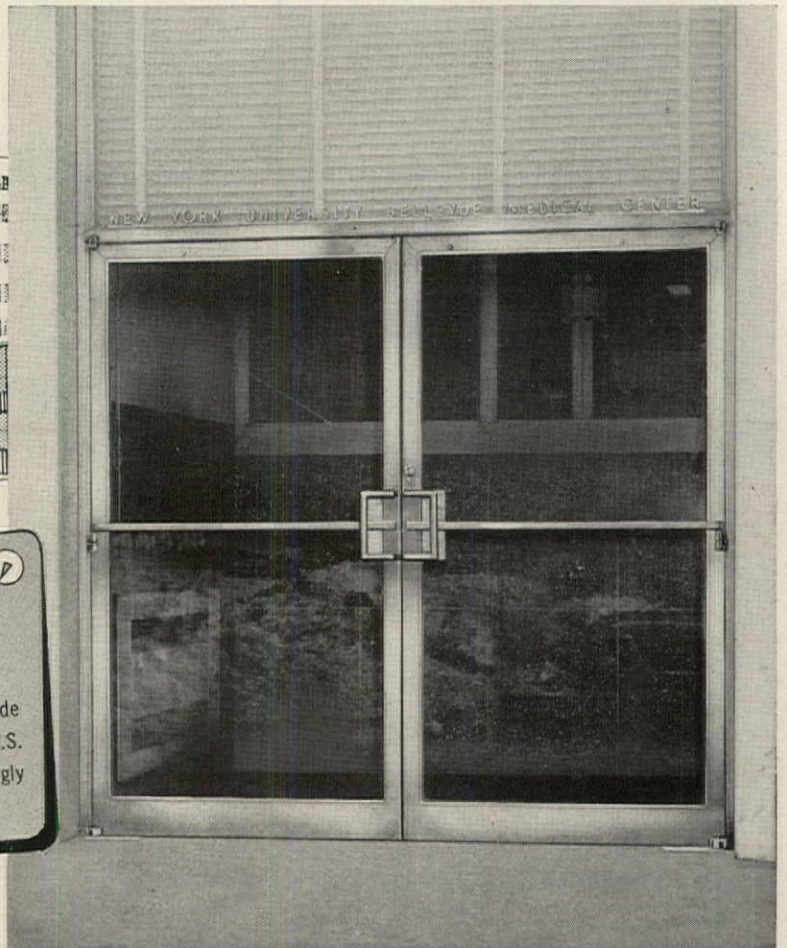
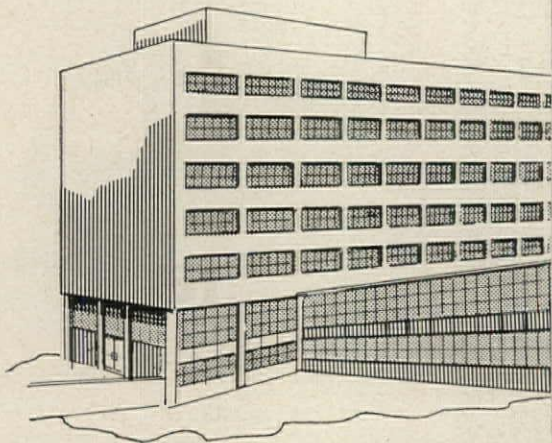
PORTLAND CEMENT ASSOCIATION Dept. A9-8, 33 W. Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete

No. 27 CLOSER solves door control problem at New York Univ. Medical Center in two-year test installation

"The first door control to stop glass breakage caused by strong East River winds..."

says P. W. Barton, CONSTRUCTION COORDINATOR



Skidmore, Owings and Merrill, Architects

RIXSON® no. 27

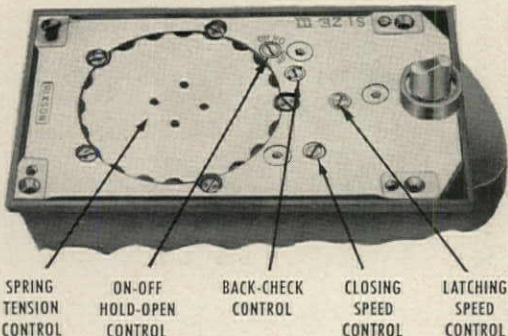
TWO-YEAR FUNCTIONAL TESTS UNDER EXTREME CONDITIONS

This is one of twenty-two test installations of the No. 27 made approximately two years ago in locations throughout the U.S. and Canada where wind and other conditions were exceedingly severe.

A COMPLETELY NEW DOOR CLOSER DESIGN

no. 27 offset hung

no. 28 center hung



These New York University Medical Center south entrance doors are exposed to powerful East River winds which blow from *both directions*. Before the No. 27 closers were installed there was frequent glass breakage and closer damage.

The back-check of the No. 27 closers, locally adjusted for *firm* resistance, together with the positive dead stop, now keep the opening action of these doors under constant control. The closing action of the doors is under dependable hydraulic check with closing and latching speeds each independently adjusted to cope with the wind conditions.

Complete literature and details on the No. 27 offset hung and No. 28 center hung closers will be mailed on request.

THE OSCAR C. RIXSON® COMPANY

9100 west belmont ave.
franklin park, illinois

CANADIAN PLANT:
43 Racine Road
(Rexdale P.O.) Toronto, Ont.

ELIMINATE COSTLY SHADING DEVICES

WITH NEW **TwI-Lite** ^{*} glare-reducing safety glass

By shutting out glare, new TWI-LITE introduces freedom of glass design without concern for expensive overhangs or "window-dressing." Clear glass transmits 85% of solar energy. TWI-LITE "purges" glare from transmitted light by absorbing solar energy 60%-80% more efficiently than clear glass. TWI-LITE's shadings of grey tone offer a choice of 28% or 9% transmission strength. Excess energy is re-radiated—half outward, half inward—*below* the vision line. This subdued light transmission provides a pleasantly illumined environment with unobstructed visibility at all times.

Besides eliminating the substantial initial cost of shading devices, TWI-LITE does away with

the accompanying nuisance costs of periodic cleaning, repair and replacement of drapes, shades and blinds. And, since less heat energy penetrates TWI-LITE, air conditioning requirements can be lowered. Moreover, TWI-LITE's shatter-resistance—intrinsic to all laminated safety glass—effects savings in decreased breakage and replacement labor. Color stability is guaranteed against fading.

As a functional visual element, glare-free TWI-LITE adds a salable feature to property, increasing its market value. Mail the coupon now for our free brochure on this exciting design development in architectural glass. TWI-LITE is available in sizes up to 60 x 120 at glass distributors everywhere.

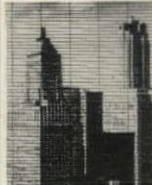
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GLASS CORPORATION

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Revolutionary new concept of sound control through architectural glass ... reduces sound penetration as much as 66%.



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Hundreds of minute louvers hermetically sealed under glass screen out heat and glare without obstructing visibility.

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Gentlemen: Please send me your free brochure on new glare-reducing TWI-LITE at no obligation.

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Firm _____ Position _____

Address _____

City _____ Zone _____ State _____

Include information on Acousta-Pane Comfor-Lite

It moves

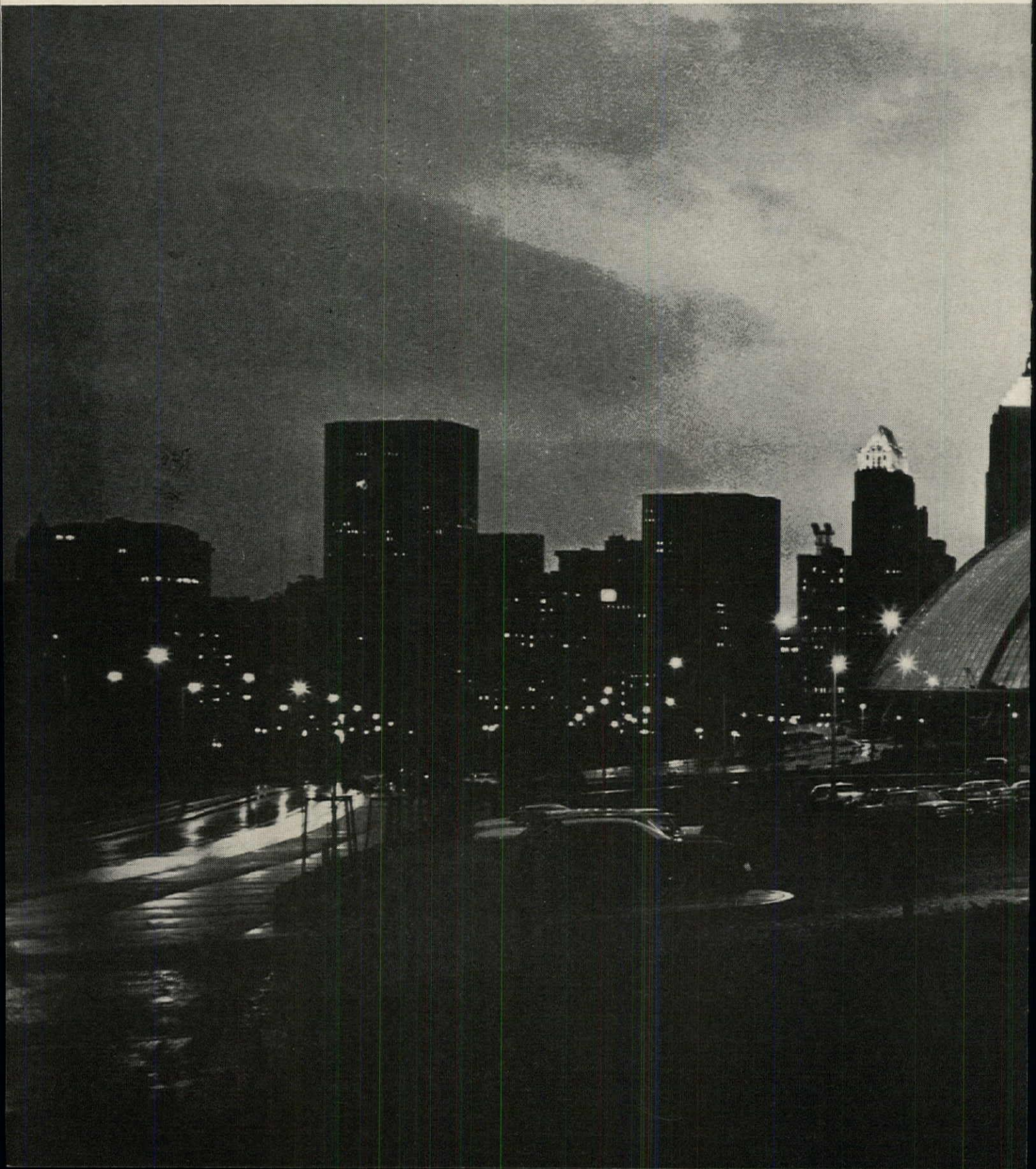
*... powered and
controlled
by Westinghouse*

Press a button—an indoor auditorium becomes an open air stadium in 2½ minutes—and behind that button is an unparalleled story of engineering and construction cooperation.

Architectural and engineering teamwork has given Pittsburgh the world's first movable roof auditorium. This versatile structure adds to the city's renaissance, in one building, a 14,000 seat sports arena, a convention hall, open air amphitheater, and an exhibit center. Westinghouse products bring the facilities to life, give precision control for the delicate manipulation of six 300-ton movable leaves.

Outwardly, the new auditorium is a 400' stainless steel

J-94176-1

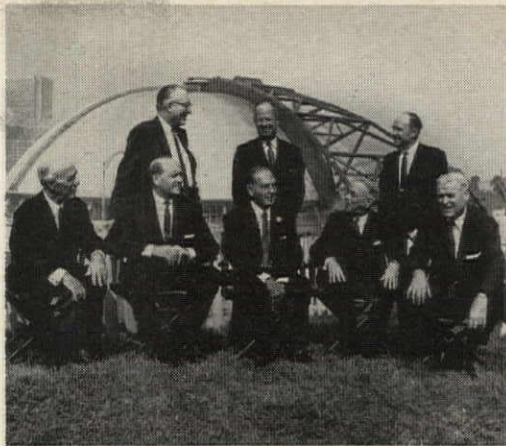


umbrella, suspended from a space frame cantilevered from the ground. That is one outstanding construction teamwork story.

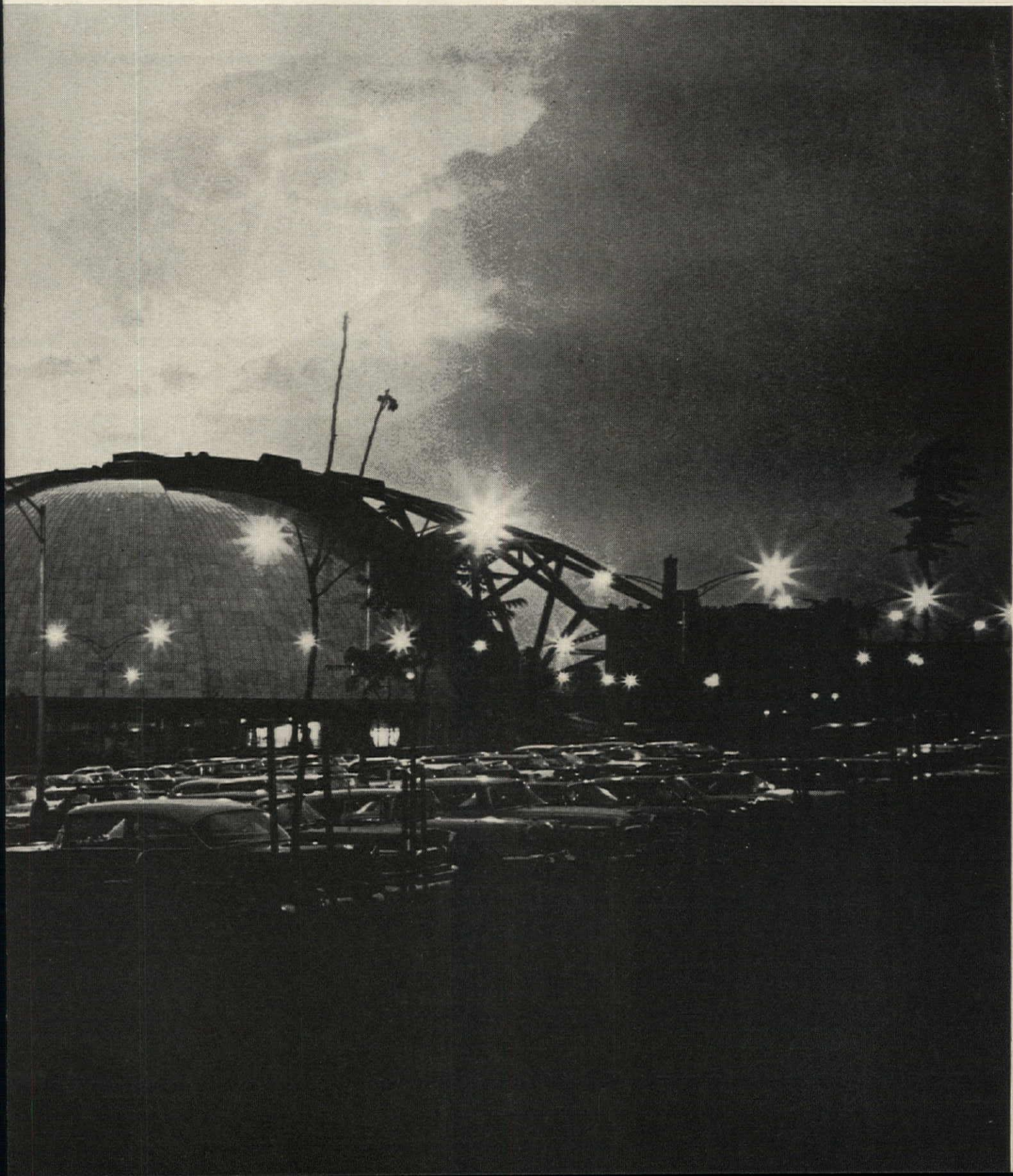
Inside, coordination culminates in a control console located high above the seating area. From this station the

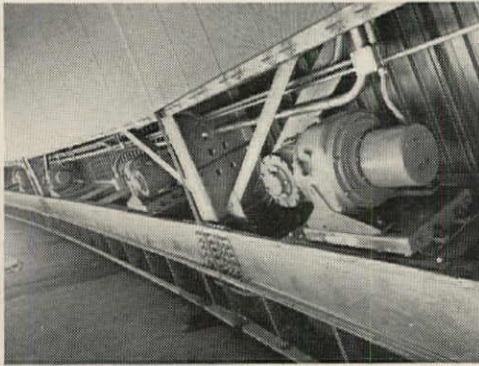
Construction Motivators: The Authority & Industry

l to r seated: Judge A. L. Wolk, Vice Chmn.; N. Stabile, Sec'ry Treas.; W. B. McFall, Chairman; H. R. Edelman, Jr., Pres. Heyl & Patterson; and D. J. McDonald, Vice Chmn. standing: C. B. Jansen, Member; J. E. Payne, V. P. Westinghouse; and Edw. Fraher, Exec. Director



J-94176-2





The six movable roof leaves are driven by Westinghouse right angle gearmotors, five to each leaf. Photo shows base of one of the movable leaves with the acoustic ceiling panels removed.



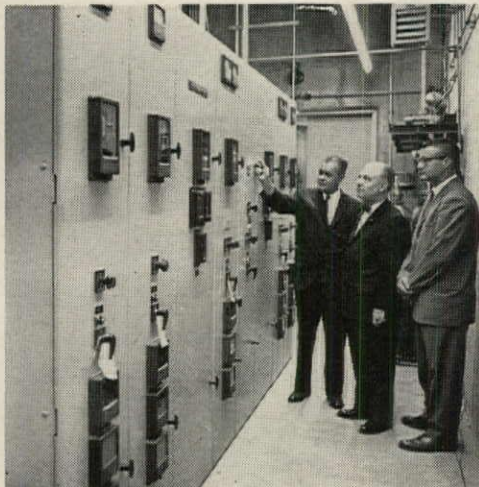
O. M. Newman, Heyl & Patterson, and Edward Cohen, Ammann & Whitney, discuss roof electrical drive with C. G. Falkenstein, Westinghouse, kneeling in front of main roof reactor control cabinet.



unique movable roof drive system is activated. An AC reactor control scheme keeps all six movable leaves in step throughout open and close cycles. Each leaf is driven by Westinghouse Moduline® gearmotors, with opposite leaves being operated in pairs.

Close cooperation among architects, engineers, owner, contractors and Westinghouse helped to provide a system flexible enough to serve varying building demands, with the high degree of electrical reliability required.

For more complete information on the electrical aspects of construction, write to: Westinghouse, P. O. Box 868, Pittsburgh 30, Pennsylvania.



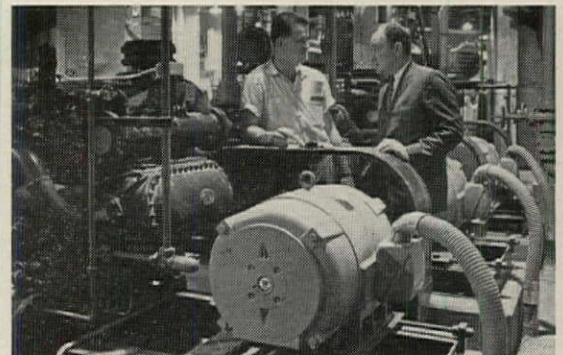
5KV metal-clad switchgear contains a tie-breaker to provide emergency switching between two incoming 4160-V lines. Seen here: N. J. Grady, V. P., Ernst, C. J. Long, and A. B. Janaszek.



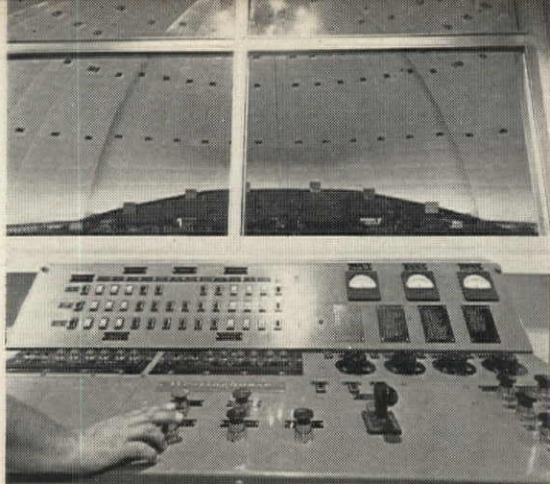
Checking construction progress are C. J. Long and F. J. Sarknas, Westinghouse. In background, 1500 kva power center supplies power for building auxiliary and air conditioning compressor motors.



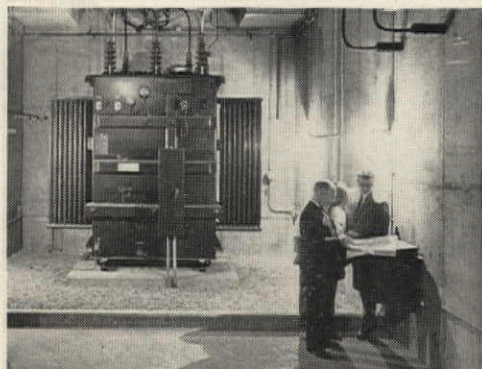
Westinghouse Motor Control Center located in the Mechanical Room centralizes auxiliary motor controls. Discussing installation advantages are H. R. Helvenston, C. J. Long and N. J. Grady.



Three 125 hp Lifeline A motors drive freon compressors to chill brine supply for ice rink piping. Seen here are P. F. Schad, Limbach, and C. G. Falkenstein, Westinghouse.



Operator's view from roof control console high above the spectator area. Visible through the glass front is the juncture of the first two movable leaves of the roof.



One of main power transformers rated 2500 kva at 11.6 kv to 4160 volts. Discussing the power supply are C. J. Long, Electrical Engineer, M. A. Geffel, Ernst, and A. B. Janaszek, Westinghouse.

Builder: Public Auditorium Authority of Pittsburgh & Allegheny County; *Resident Engineer & Supt. of Construction:* H. Rey Helvenston

Architects: Mitchell & Ritchey, Pittsburgh

Roof Designers & Engineers: Ammann & Whitney, N.Y.

Electrical Engineer: Carl J. Long & Associates, Pittsburgh

Mechanical Engineer: John Mullin & Associates, Pittsburgh

General Contractor: Dick Corporation, Large, Pa.

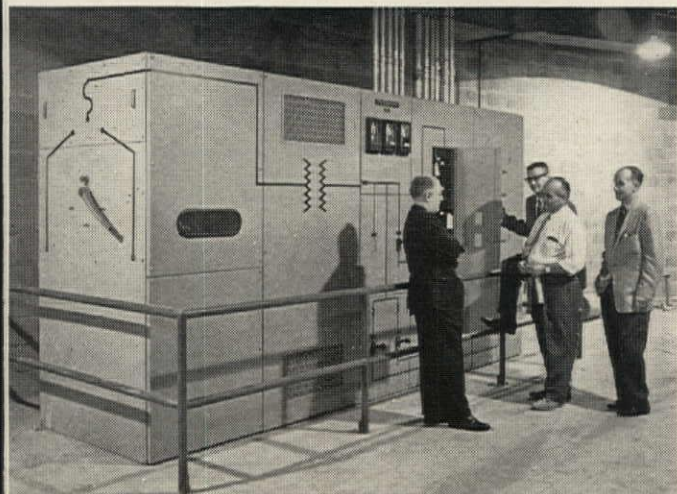
Electrical Contractor: E. C. Ernst, Inc., Pittsburgh

Mechanical Contractor: Limbach Company, Pittsburgh

Drive System Contractor: Heyl & Patterson, Inc., Pittsburgh



Westinghouse



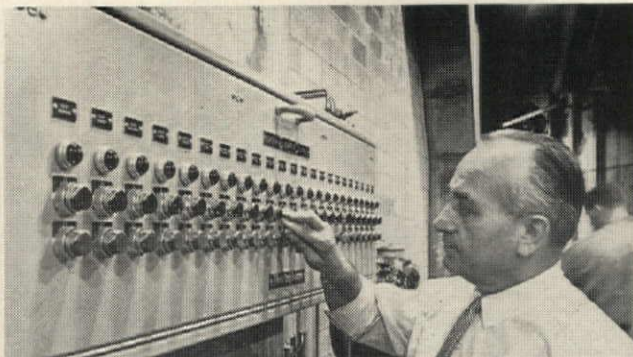
Another Westinghouse power center, this 300 kva ASL dry type supplies lighting and auxiliary power. Discussing its component parts are C. J. Long, A. B. Janaszek, M. A. Geffel and Albert Simon, Ernst.



Fan room equipped with series 8000 Air-Foil centrifugal fan and air conditioning coils. W. Y. Humphreys, Westinghouse, with John Mullin, Consulting Engineer, air conditioning and ventilation system designer.

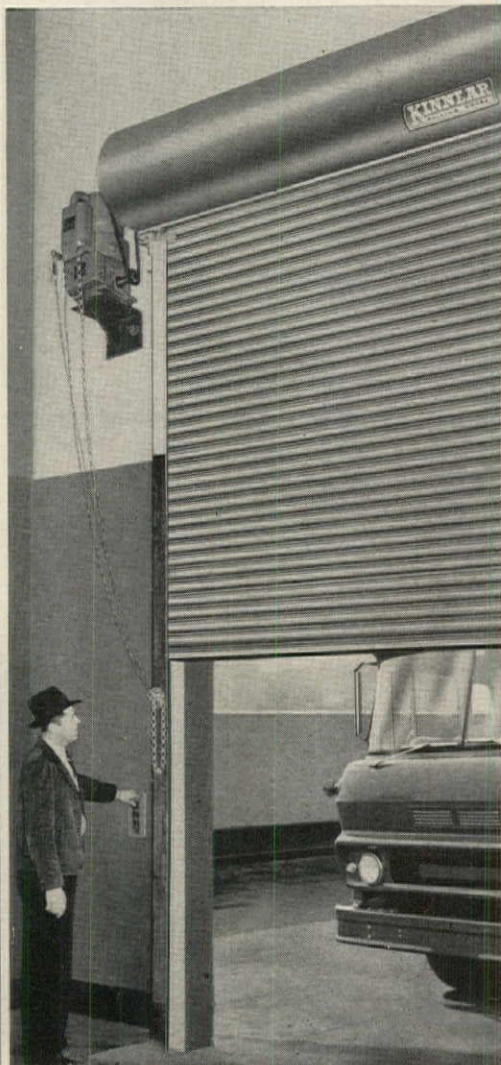
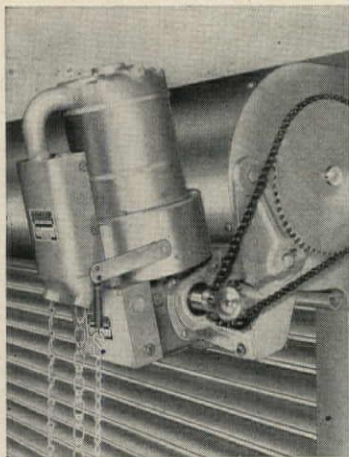


Type M Electric Stairway transports 8,000 persons/hr. Top to bottom: E. R. Gallagher, supervising architect; H. R. Helvenston, resident engineer; and A. Simmonds, Westinghouse Elevator.



Westinghouse mercury vapor parking area and floodlighting are operated from this remote control panel located in the mechanical room. M. A. Geffel, Ernst, tests lighting circuits.

There's a
**"Powerful
 Difference"**
 in **KINNEAR**
**Motor Operated
 Rolling Doors!**



**The Kinnear Motor Operator is NEW in every
 detail -- AND BUILT EXCLUSIVELY FOR DOOR SERVICE**

Kinnear's new Power Operator for rolling doors is a specific-purpose unit. All features are uniquely integrated for door control that combines highest efficiency and durability.

Its reserve power assures smooth action that defies wind pressure, drifted snow, collected grime, or extra years of usage.

Special thermal protection prevents overload troubles — the motor cuts out before damage can occur.

New worm gearing takes "stop and go" action in its stride!

A new centrifugal clutch transmits motor action to the door without shock, increasing protection against motor stalls and overload damage.

The new power unit permits easy removal for servicing without disturbing the auxiliary hand-chain operator.

Seven sizes fit all door needs without costly "over-powering." Can be installed vertically or horizontally . . . bracket-mounted on the door or wall, or for through-the-wall operation.

Kinnear originated the door with the curtain of interlocking slats that opens upward, coils compactly overhead, and saves floor, wall and ceiling space. This new Power Operator brings the basic efficiency of Kinnear Doors to a new high in dependable, push-button convenience. *Write for complete information on Kinnear Rolling Doors and Power Operators.*

The KINNEAR Manufacturing Company



FACTORIES:

1860-80 Fields Avenue, Columbus 16, Ohio
 1742 Yosemite Ave., San Francisco 24, Calif.
 Offices and Representatives in All Principal Cities

The Record Reports
 continued from page 250

- 4-7 National Retail Lumber Dealers Association Eighth Annual Building Materials Exposition—McCormick Place Exhibit Hall, Chicago
- 6-9 46th edition, National Hotel Exposition—The Coliseum, New York City
- 6-9 1961 Conference and Atom Fair atomic exhibit, sponsored by the Atomic Industrial Forum and the American Nuclear Society—Conrad Hilton, Chicago
- 12-15 Annual meeting, Air Conditioning and Refrigeration Institute—The Homestead, Hot Springs, Va.
- 14-16 Building Research Institute 1961 Fall Conferences—Shoreham Hotel, Washington, D.C.

Office Notes

Offices Opened _____

Henningson, Durham & Richardson has opened an office in Charlotte, N.C. Robert Southworth has been named manager of the new office of this engineering and architectural firm which also has offices in Omaha, Colorado Springs, Phoenix and Dallas.

New Firms, Firm Changes _____

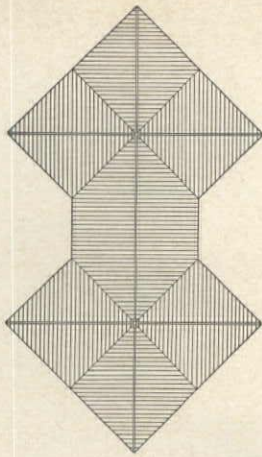
Deane M. Truesdell, Architect, Flint, Mich., and Ellis, Arndt & Associates, Consulting Engineers and Landscape Architects, Flint, Mich., announce the formation of the firm of Ellis, Arndt & Truesdell. The address is 614 MacArthur Bldg., 114 W. Union St., Flint.

Serge P. Petroff, director of architecture for the planning-architecture-engineering firm of Charles Luckman Associates, has been elected a vice president of the organization.

Herman G. Pietrolungora announces the formation of his new firm at 1305 Heeney Ave., Johnstown, Pa.

The firm name of L. W. Davidson & Associates, 3142 Wilshire Blvd., Los Angeles, has been changed to Davidson and Maurer Incorporated, Architects and Engineers.

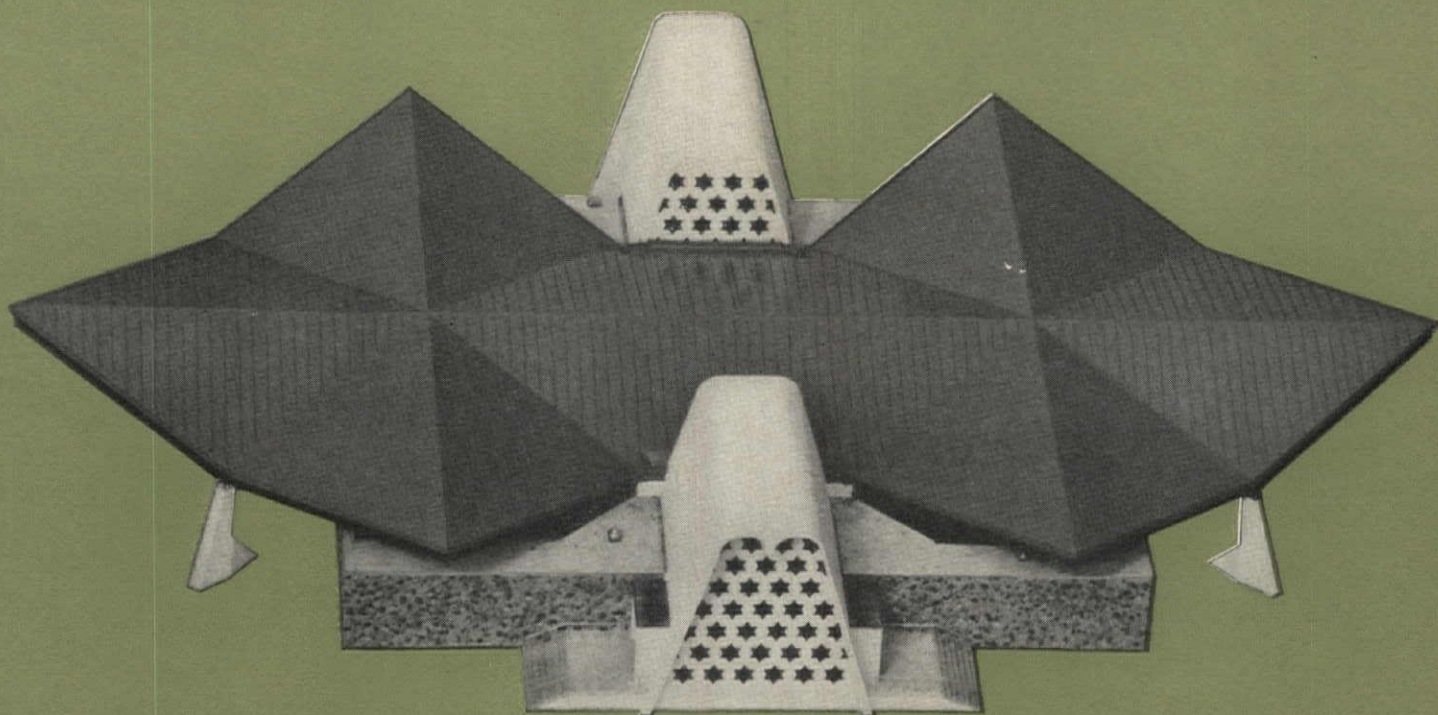
With the retirement from business
 continued on page 264



STARS OF TERNE . . .

FORM COLOR FUNCTION

The durability of Terne roofing is almost unique—its measurement of performance is in generations rather than years. This time-tested metal has other notable advantages . . . among these are a natural affinity for color and linear modulation which permits any visibly significant roof to become a basic component in design, a positive factor in architectural expression. And the cost can be surprisingly moderate. May we send you detailed literature?



Beth-Torah Temple, North Miami Beach, Fla.—Architect: Philip Pearlman, North Miami Beach, Fla.—Roofer: Ideal Roofing Sheet Metal, Miami, Fla.



FOLLANSBEE STEEL CORPORATION
Follansbee, West Virginia

Follansbee is the world's pioneer producer of seamless terne roofing



"THE FIREPROOFING QUALITY OF GYPSUM IS IMPORTANT TO THIS GROWING CITY"...says Frank J. Nicolosi, Plastering Contractor, Cleveland, Ohio. "The trouble-free quality of Bestwall Lath and Plaster products is a valuable aid in meeting demanding specifications. Especially notable are Satin Spar and Sunflower plasters that never 'bounce back'." Bestwall Gypsum Company, Ardmore/Pa.



Plants and offices throughout the U.S.

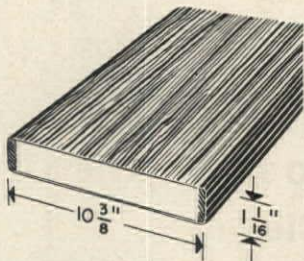


FREMONT UNION HIGH SCHOOL, SUNNYVALE, CALIFORNIA
 ARCHITECTS: MASTEN, HURD AND GWATHMEY
 BUILDER: FRIETAS CONSTRUCTION COMPANY



wood folding partitions

give sturdy beauty to space control



STABILIZED WOOD CORE
 of each panel is laminated
 with water-resistant plas-
 tic glue and faced with
 genuine wood veneer.

PELLA WOOD FOLDING PARTITIONS are handsome enough for classroom, auditorium, church or club—sturdy enough for recreation halls and other active areas. The play of light and shadow on any one of six genuine wood veneer grains can add interest and warmth to your building interiors. The stabilized wood core of each panel plus patented “live-action” spring hinging maintains panel alignment, assures years of trouble-free service. Even the largest units operate with surprising ease. Massive $10\frac{3}{8}'' \times 1\frac{1}{16}''$ panels. Available for any opening width and any height to 20'1". Call your PELLA distributor in the Yellow Pages for specifications and literature. ROLSCREEN COMPANY, PELLA, IOWA.

**6 Fine Wood Veneers: ASH • OAK • PHILIPPINE MAHOGANY
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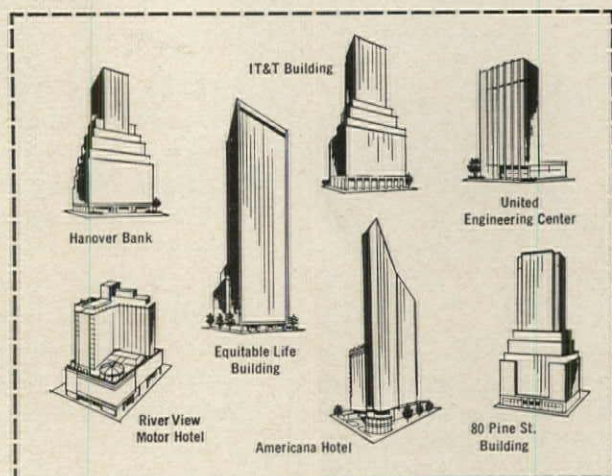
**We're
batting .700+
in N.Y.**



**Kohler plumbing went into 7 out of 10
new major buildings in New York City**

Quite a compliment. But not surprising. We could rattle off a long, long list of Kohler installations going up, or completed, in N.Y. The point is that the number of architects and contractors who rely on Kohler gets bigger by the day. They find Kohler precision manufacturing makes for easier, faster, neater installation. Kohler chrome plated, All-Brass fittings with the Valvet have demonstrated ability to stand up under the most demanding use with minimum maintenance, maximum efficiency.

These are some of the reasons builders in New York, and from coast to coast, find it pays to specify Kohler. Your nearby Kohler distributor will tell you more reasons.



KOHLER OF KOHLER

Kohler Co., Estab. 1873 • Kohler, Wisconsin

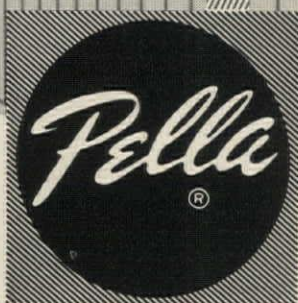
ENAMELED IRON AND VITREOUS CHINA PLUMBING FIXTURES • ALL-BRASS FITTINGS • ELECTRIC PLANTS • AIR-COOLED ENGINES • PRECISION CONTROLS

PELLA PRODUCTS

THE FOCAL POINT OF QUALITY

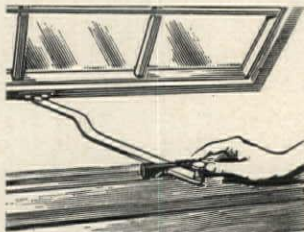


CADDY VISTA SCHOOL,
CALEDONIA, WISCONSIN
ARCHITECTS: LEBEVRE-
WIGGINS & ASSOCIATES,
MILWAUKEE



wood multi-purpose windows

combine into major design attraction



UNDERSCREEN OPERATOR
is of extruded aluminum. Exclusive nylon **GLIDE-LOCK®** permits locking M-P window in 10 positions.

Whenever you place design emphasis on glass division, PELLA WOOD MULTI-PURPOSE WINDOWS instantly meet the challenge. In this case, M-P vent and fixed units form an 8-window pattern that pleasingly repeats itself. In all, 15 vent or fixed and 5 fixed picture sizes put hundreds of combinations at your pencil tip. For variety, WOOD M-P WINDOWS may be arranged as awning, hopper or casement units. Even with expansive glass areas, these handsome wood windows contribute to the efficiency of both heating and air conditioning systems. Screens and storm panels are self-storing. Roto operators are also available. Full specifications in SWEET'S or consult the classified telephone directory for the name of the nearest U.S. or Canadian distributor. ROLSCREEN COMPANY, PELLA, IOWA.



New York International Airport (Idlewild)

200 WEINMAN PUMPS HANDLE MANY WATER NEEDS AT NEW YORK'S NEW INTERNATIONAL AIRPORT COMPLEX

Day after day, 200 Weinman Pumps quietly and efficiently move a Niagara of water needed to operate many buildings in the vast complex at International Airport. A volume of water equal to a medium-sized city is required to heat, condition air, move sewage and melt snow.

It was not by chance that, in so many cases, Weinman Pumps were specified to meet the water requirements of this jet-age facility. Airlines and hotels sell service. Comfort and convenience are vital parts of this service. That's why air travel is so popular. And fast, dependable service is why Weinman Pumps are so often specified.

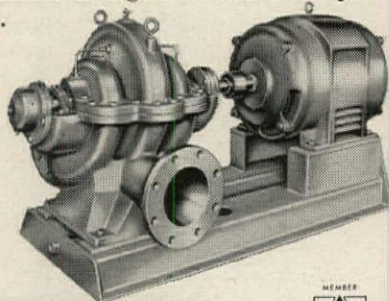
At International, Weinman Pumps perform behind the scenes . . . 24 hours a day . . . every day . . . in each of these buildings of the complex:

- American Airlines Terminal • Eastern Airlines Terminal
- International Hotel • Pan American Airways Terminal
- United Airlines Terminal

and Weinman Pumps are ready to give the same dependable service in the soon-to-be-completed Trans-World Airlines Terminal.

Whether you design a single building or an intricate complex like International, there's a right solution to your water circulation problems.

Consult your
Weinman Pump
Specialist . . .
he's in the Yellow Pages.
Or, if you prefer,
write us direct . . .



THE WEINMAN
PUMP MFG. CO.

290 SPRUCE STREET COLUMBUS 15, OHIO
CENTRIFUGAL SPECIALISTS



The Record Reports

continued from page 258

of Mr. Carl R. Parker and Mr. Charles S. Riley, the firm of Olmsted Brothers, Landscape Architects, Brookline, Mass., was dissolved and reorganized into Olmsted Associates, Landscape Architects. The four partners are E.C. Whiting, W.B. Marquis, A.P. Richardson and J.G. Hudak.

Mr. Edward DePina has been appointed regional manager for the Albany office of John Clarkeson, Consulting Engineer. Mr. DePina succeeds the late Wilmer A. Warrick.

Hans A. Friedman has announced the formation of a new architectural firm, Friedman, Omarzu, Zion & Lundgoot. Offices are at 150 North Wacker Drive, Chicago. Mr. Friedman has been chief architect and head of the architectural department of DeLeuw Cather & Company, Consulting Engineers, with whom he has been associated for nine years.

Eleanor Larrabee and Eric Joseph Pick have become associates of Warner, Burns, Toan, Lunde, Architects, New York City.

New Addresses

Walter Hiram Frick, Consulting Architectural Engineer, and Frick & Sweeney, Consulting Architectural Engineers, 330 S. Evaline St., Pittsburgh, Pa.

Henningson-Durham & Richardson, 3555 Farnam St., Omaha, Neb.

Warner, Burns, Toan, Lunde, Architects, 724 5th Ave., New York, N.Y.

N.B.F.U. Grant Provides A.I.A. Student Scholarships

Seven scholarships totalling \$4500 have been awarded students of architecture by the American Institute of Architects through a grant by the National Board of Fire Underwriters.

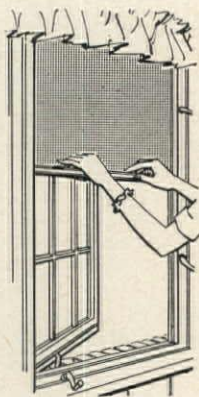
The recipients were chosen by the Institute's committee on awards and scholarships from among candidates nominated by the deans of accredited architectural schools. They are: Donald Earl Hunter, Oak Park, Ill., University of Kansas—\$600; Donald William MacDonald, Norman, Okla., University of Oklahoma—\$500; Edward Davis Kelbish, Flushing, N.Y. Pratt Institute—\$500; Michael Duane Maher, Seattle, Wash., Univer-

continued on page 274



wood casement windows

join into bays of any angle



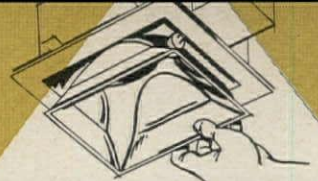
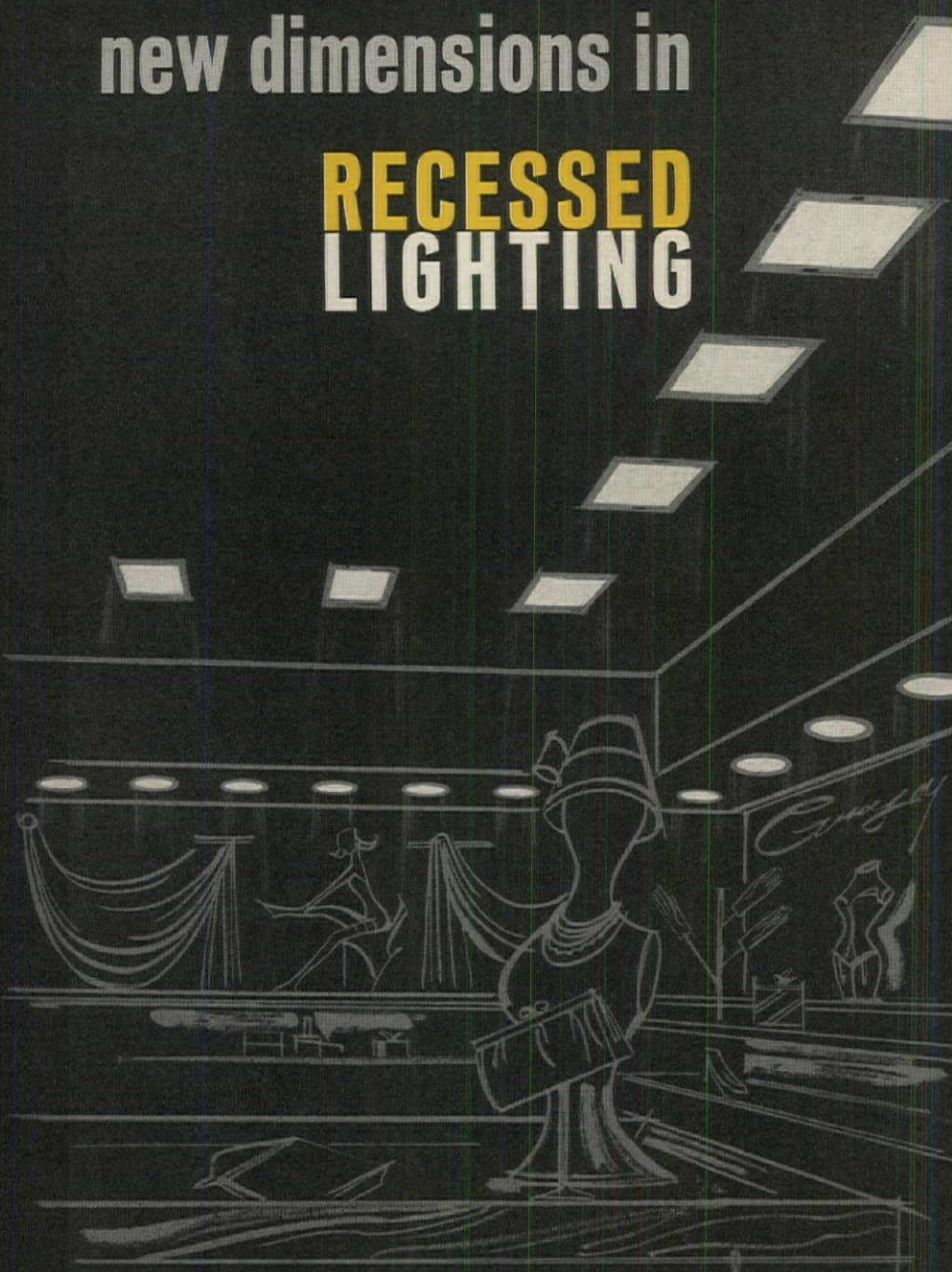
ROLSCREEN®

on PELLA WOOD CASEMENT WINDOWS is the original inside screen that rolls down, up and out of sight.

Joining mullions for angular or circular bays can be made in any angle. 30°, 45° and 60° mullions are standard items. The design versatility of PELLA WOOD CASEMENT WINDOWS is expressed here in the bow arrangement and its harmony with the PELLA WOOD TWINLITE® WINDOWS in the rest of the house. Features like self-storing screens (PELLA WOOD CASEMENTS feature the famous ROLSCREEN® that rolls up like a window shade) and storm sash—plus muntin bars that snap in and out for easy painting and glass cleaning—enable you to combine traditional styles with the most advanced window conveniences. For maximum design freedom, PELLA WOOD CASEMENTS include 18 ventilating units up to 24" x 68" glass size and an exceptional range of fixed units. For full specifications, consult SWEET'S or your nearest U. S. or Canadian PELLA distributor in your classified telephone directory. ROLSCREEN COMPANY, PELLA, IOWA.

MOE
LIGHT

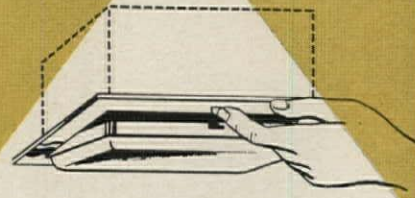
new dimensions in
RECESSED LIGHTING



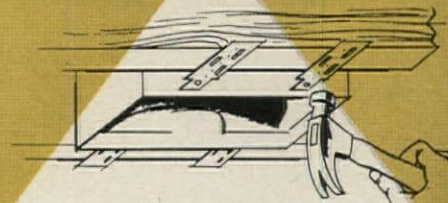
No Light Leak Frame and Trim
Reflector interlocks inside trim eliminating all light leaks. Trim need never be removed from ceiling.



Full Reflector
One piece—full size. Reflects maximum light. Alzak or Polspec finish.



Push Latch
Releases glass easily without tools for relamping and cleaning.



Installs Quick and Easy
Housing completely assembled. No screws or nails needed with self-locking bar hangers and finger-tip adjustment.

FEATURE ENGINEERED FOR EXACTING ARCHITECTURAL SPECIFICATIONS

Moe Light is the new dimension in Recessed Lighting, as they have 65 variations in type, trim and glass, which permit complete architectural flexibility. They have been engineered and laboratory tested for maximum illumination efficiency and job-tested for simplified installation.

Examine the features shown here . . . then add the additional advantages of prewired housings for all electrical codes . . . commercial units with Alzak reflectors and 14-gauge steel . . . competitive prices . . . these all combine to assure your specifying the best, when you choose Moe Light. Now you can secure *all your recessed lighting needs* from *one source*, Moe Light. Consult with a representative for complete details.

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Moe Light Division, Dept. MAR-9
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- Please have your sales representative call.
- Please send me your new free catalog of MOE Light Recessed Fixtures.

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SEE SWEET'S 1961 ARCHITECTURAL FILE FOR COMPLETE SPECIFICATIONS



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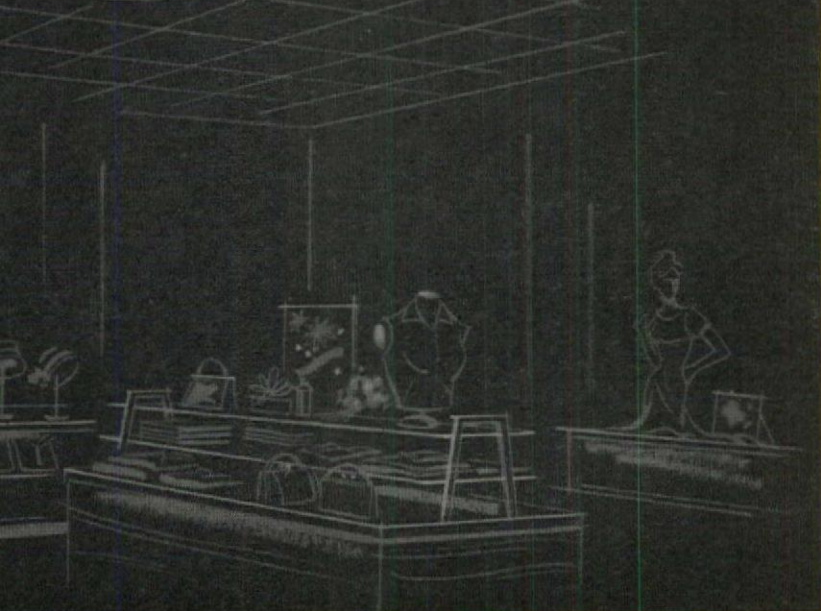
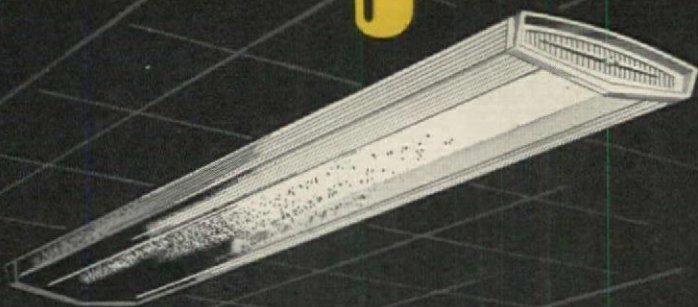
FREE! NEW TECHNICAL CATALOG

Specifications, coefficient and candle power tables, section and plan views, trim details. Complete technical data on the entire new line.



The World's Largest Single Source of Lighting for Home, Industry and Commerce.

BENJAMIN



DISCRIMINATING DIMENSIONS IN LIGHTING

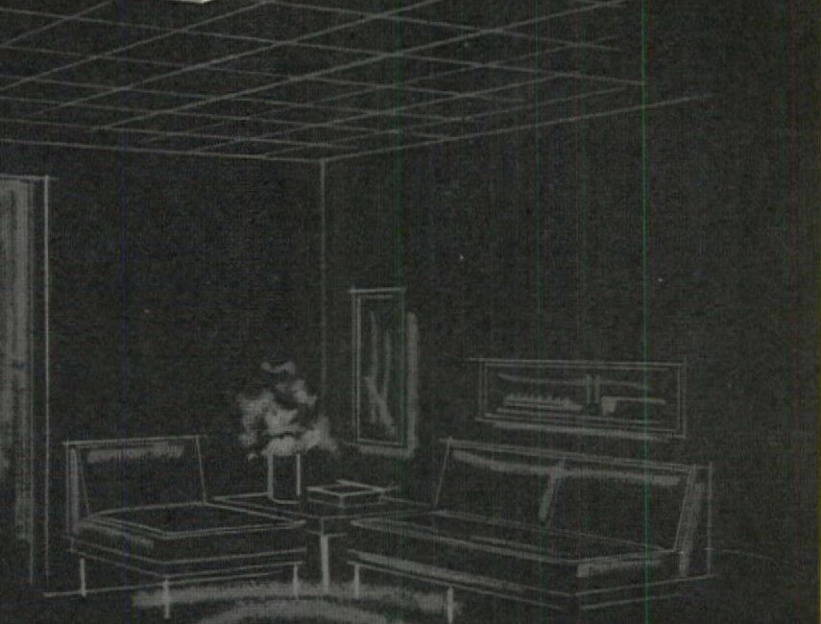
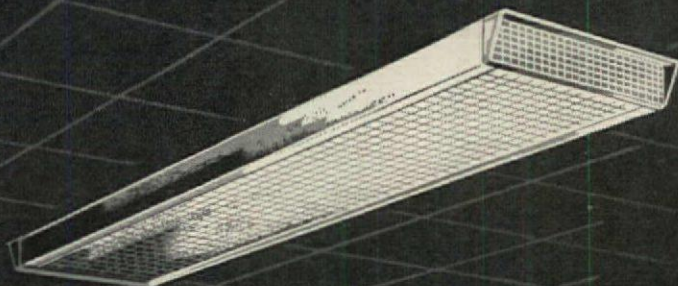
We're proud to offer two of the most distinguished designs available in the market today. Benjamin know-how has combined superior engineering and maximum lighting efficiency in smart, slim fluorescent fixtures, that add the note of distinction to any office or commercial installation. Dramatically decorative . . . competently functional.

No visible metal supports. Can be mounted singly or in continuous unbroken line. Variety of light-diffusing lenses for any purpose. Two or four lamp. Forty-eight inch lengths.



The incomparable **CORONADO**

Here is the latest development in controlled lighting—3 in 1 lens—snap-in wiring channel—only 2½" deep—two types of lens. Designed for surface mounting for all types of commercial lighting—offices, schools, banks and other interiors that require high quality illumination, realistically priced.



The distinctive *Catalina*

Today's most copied commercial fixture. Its beauty of design and universal adaptability make it the number one choice of architects and consulting engineers. Selected by contractors for its ease of installation. In either prismatic lens or plastic louvers, this unit has no equal.



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- Please have your Lighting Specialist call
- Please send me your new folders on the
Catalina and Coronado

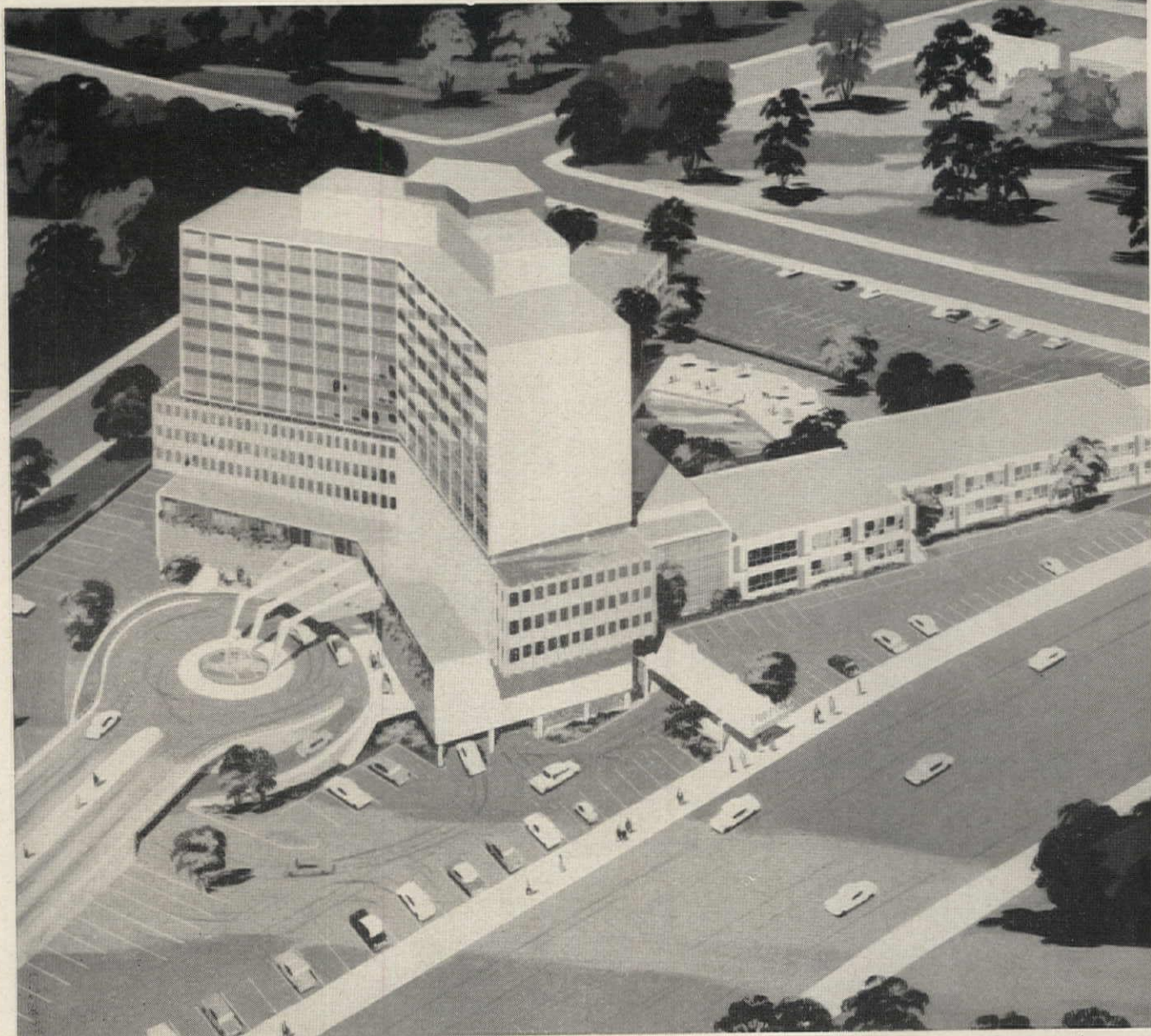
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Golden Triangle Motor Hotel, Norfolk, Va. Architect: Anthony F. Musolino. Consulting Architects: Morris Lapidus, Kornblath, Harle & Liebman. Consulting Mechanical Engineer: Counts & Lawrence. Mechanical Contractor: Hicks & Ingle.



Guests dial the weather all year 'round in this fabulous hotel-motel equipped with Crane Fan Coil units.

Personalized comfort in any season. That's what Norfolk's luxurious Golden Triangle hotel-motel gives guests in each of its 400 rooms, and saves money too.

Crane Fan Coil Units heat, cool, take little space. Never interfere with radio or television reception. They're truly economical.

Cost less to install because there is no expensive ductwork needed.

Each unit contains a heat transfer coil, motor and from one to four quiet blower fans. It's the cleanest comfort there is. Hot water is used for winter heating... chilled water for summer cooling. You can turn them


off in unoccupied rooms...to keep costs down.

Smartly styled Crane Fan Coil Units can be installed either recessed or free standing. For full details see your regular contractor or your Crane representative. Or write direct to Crane Co., Plumbing-Heating-Air Conditioning Group, Box 780, Johnstown, Penna.

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OF HOME AND
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VALVES AND PIPING
ELECTRONIC CONTROLS
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CREATE THE DESIGN...

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Manufacturing and warehousing building constructed at Logan, Ohio, for Metalbestos Division, William Wallace Co. of Belmont, California, leading manufacturer of gas venting equipment.

A-M Precast Concrete Components

American-Marietta's precasting and prestressing factories supply such structural units as concrete wall panels, roof and floor systems, beams, columns and foundation grade beams. With these components it is possible to provide an infinite variety of architectural designs—and construct buildings in record time.

Architects, builders and owners are impressed with low original costs and maintenance savings of A-M precast concrete building units. For complete information contact your nearest American-Marietta office or write direct to:



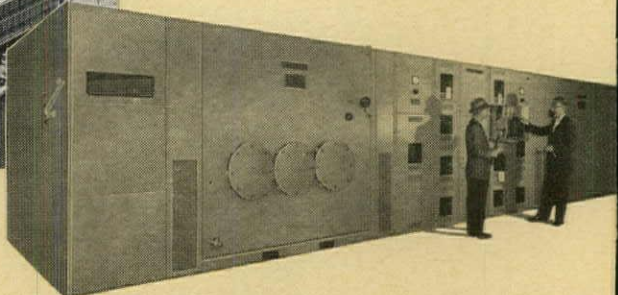
AMERICAN-MARIETTA COMPANY
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Square D--wherever

COBO HALL, world's largest, occupies 16 acres of Detroit's civic center. It provides 400,000 square feet of exhibit area. Its 10,000 KVA of power is distributed and controlled by Square D equipment which includes 11 substations (one of them is shown at right), 37 control centers, 28 switchboards, 550 panelboards, 19,000 feet of lay-in duct.



EL SAN JUAN INTERCONTINENTAL
 One of the Caribbean's most beautiful resort hotels. Square D equipment distributes and controls the electricity throughout this modern structure. ABOVE—Square D control center centralizes all motor control for air-conditioning lobby, offices, dining rooms, night club and casino. Square D feed-in duct brings power from substation.



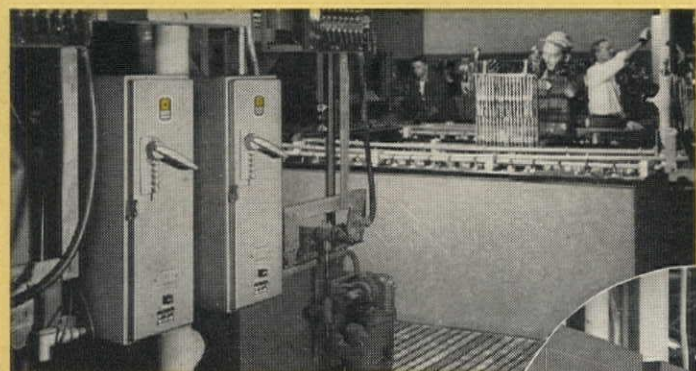
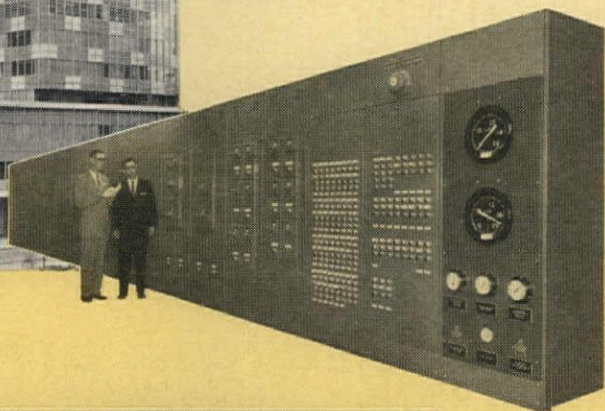
SQUARE D COMPANY

electricity is distributed and controlled



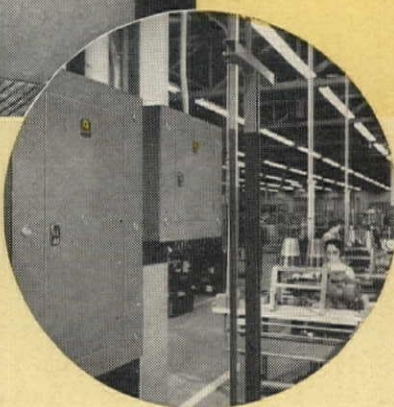
KROGER BUILDING

Its 29 stories contain more floor space under one roof than any other office building in Cincinnati—over 500,000 square feet. *Square D* equipment is on duty throughout this beautiful building. **BELOW**—a *Square D* switchboard which handles a multitude of protection, distribution and measuring functions. Panel in foreground visually reports entire system's performance.



AUTOMATIC ELECTRIC

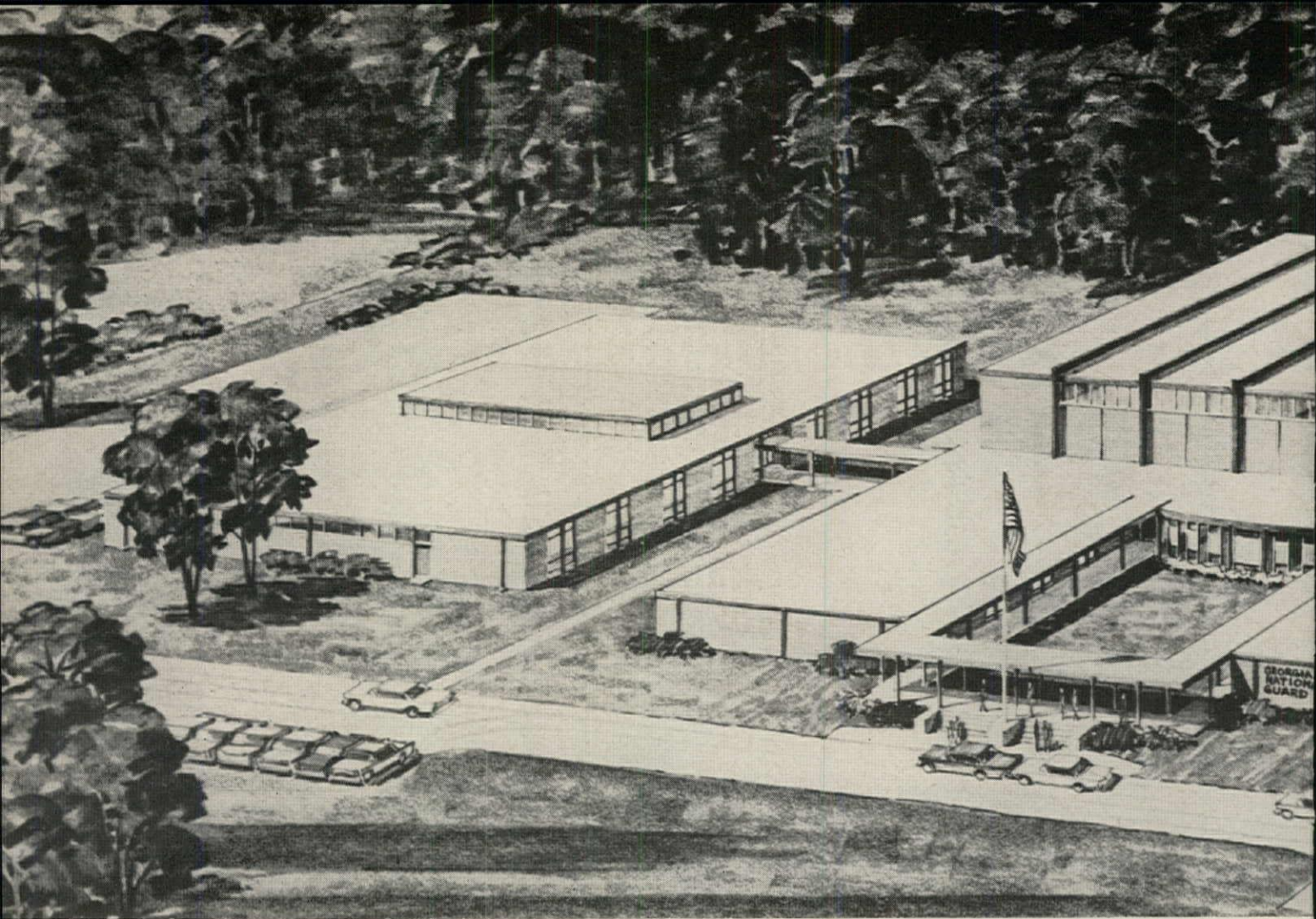
This 1,520,000 sq. ft. plant, located at Northlake, Illinois, replaces 17 multi-story buildings—outstanding example of more capacity per square foot through straight-line production design. *Square D* equipment plays an important part in many key operations. **ABOVE**—*Square D* combination starters in plating department. There are hundreds of them serving dozens of departments. **RIGHT**—*Square D* lighting panelboards (hundreds of them) are used throughout the plant and offices.



A *Complete* LINE OF ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT

- ADJUSTABLE SPEED DRIVES
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EXECUTIVE OFFICES • PARK RIDGE, ILLINOIS



Plastic design of Georgia armory cuts weight of steel frame 15 per cent

Rigid-frame bents spanning 120 feet set new U. S. record for longest plastic-designed clear span

The Georgia National Guard Armory in Savannah, scheduled for completion late this summer, includes three steel-framed buildings linked by covered walkways. The central structure contains two headquarters and administration wings, and a column-free drill hall which will seat 5,000 when used as a sports arena. The two flanking buildings are each large enough to hold four company-size units.

Frames are outside of buildings

Seven 120-ft-long, rigid-frame bents, 20 feet center-to-center, span the drill hall. Clear height is 30 feet. Each of the 15-ton bents was fabricated from 33 WF 152 lb sections, giving a depth-span ratio of 1:44. Eight-inch purlins are framed into the bottom of the wide-flange sections, to expose the major portion of the frame outside the building.

The architects also derived an aesthetic as well as a functional use of the steel frame in the flanking

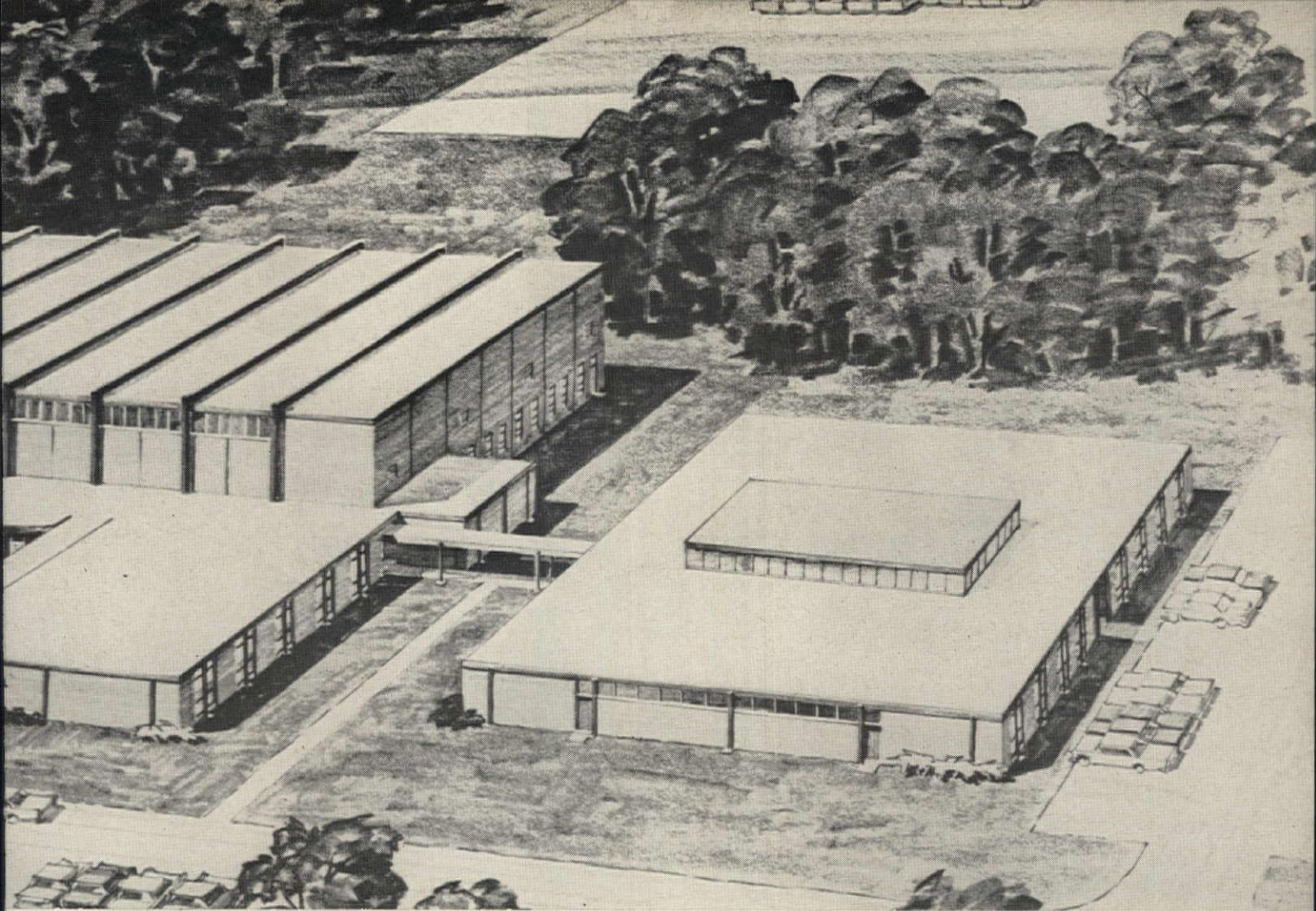
buildings by exposing the columns. These support 12-inch channels which act as a fascia, and 12-inch light beams which frame the roof.

15 per cent savings in steel

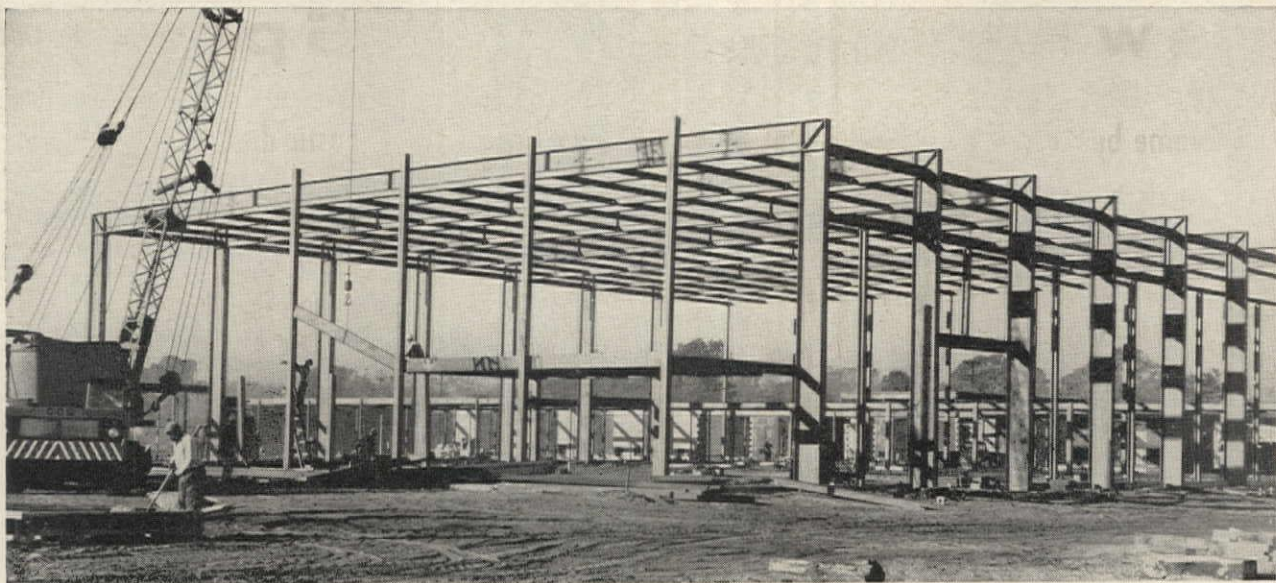
By using plastic design, the architects were able to reduce by 15 per cent the amount of structural steel needed to frame the buildings, as compared with the requirements necessary under the elastic method.

Steel design by the plastic method is a new development in design technique, and generally results in a more efficient structure with less steel required to achieve the same strength. It also saves on the cost of engineering, since it demands less engineering time on the part of the designers.

If you would like a copy of a 10-page AISC booklet on "Supplementary Rules for Plastic Design and Fabrication and Rolled Beam Properties for Plastic Design," write to us at Bethlehem, Pa.



Steel is used extensively throughout the Georgia National Guard Armory, not only as a structural system, but also as frames for windows, canopies, and glass curtain walls. *Architects and Engineers:* Thomas-Driscoll-Hutton. *General Contractor:* Hugh Jackson. *Steel Fabricator:* Owen Steel Company. *Steel Erector:* Steel Erectors, Inc. The major portion of the 310 tons of structural and miscellaneous steel was supplied by Bethlehem.



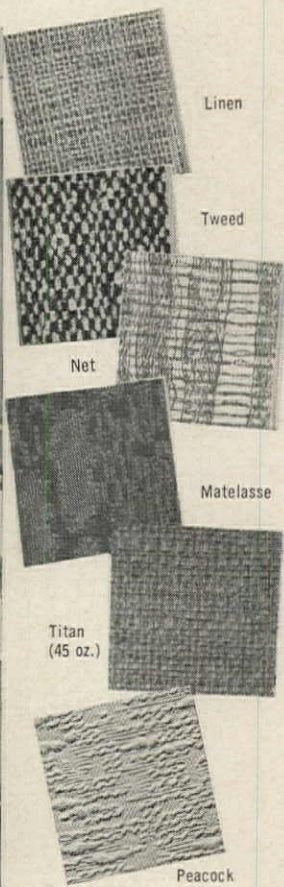
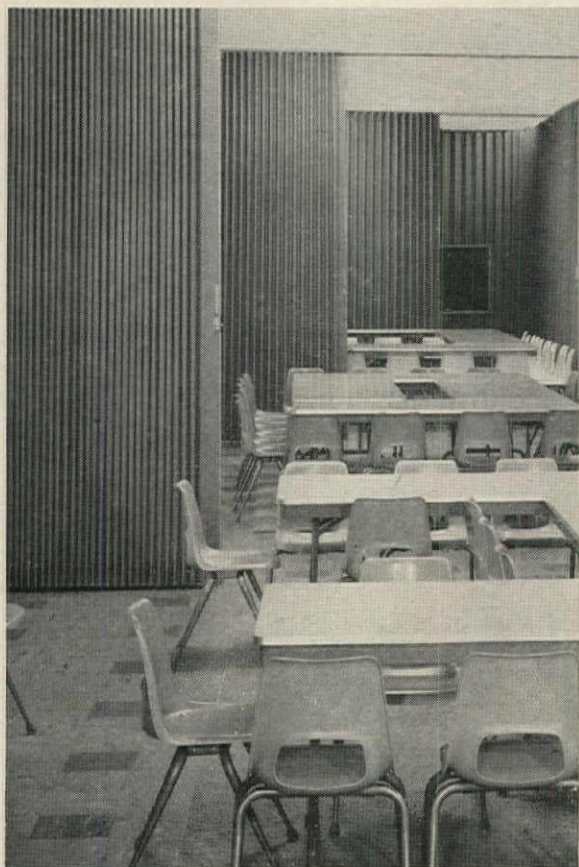
Light weight of plastic-designed steel frame minimized difficulties created by poor subsoil conditions and led to economies in foundation construction.



BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
Export Sales: Bethlehem Steel Export Corporation

BETHLEHEM STEEL





The Record Reports

continued from page 264

sity of Washington—\$800; John Anton Berg, Tempe, Ariz., Arizona State University—\$500; Gary D. Forbush, Salt Lake City, Utah, University of Utah—\$800; and Fred Maxwell Babcock, Pocatello, Idaho, University of Utah—\$800.

The National Board makes this, the eighth such grant for scholarships, in recognition of the importance of the architect in the proper design of buildings.

Kansas State Awards First Master of Regional Planning

Kansas State University has awarded its first master of regional planning to George P. Miller. He is the first to complete requirements for the degree, which was authorized by the Kansas Board of Regents in 1959. The degree is offered on an interdepartmental basis but it is coordinated by the department of architecture and allied arts.

"The degree is unique to K-State in two respects," according to Murlin R. Hodgell, associate professor of architecture and regional planning and major adviser for the graduate degree. "It requires two years of graduate work beyond the bachelor's degree (most master's degrees require only one year), and it is a change from the specialization of many master programs. The regional planning degree consists of a series of broadening courses as well as a core curriculum. The professional program develops from this broad base."

The interdepartmental nature of the degree permits majors to receive their undergraduate degrees in architecture, civil or architectural engineering, landscape design or in related social sciences. They also study in these areas, adjusting their programs individually to help overcome undergraduate deficiencies for planning.

Program policies are decided by an interdepartmental committee. The chairman of the committee is the head of the department of architecture and allied arts because much of the core curriculum is taught in that department.

The degree is general because planning involves a coordination of

continued on page 278

NEW SUPER— Soundguard X-8 FIRST in SOUND REDUCTION and FIRST in BEAUTY

The new Super-Soundguard Foldoor X-8 provides the greatest sound reduction of any steel frame single folding partition in the 8-1/2" profile class. Average attenuation for 9 frequencies is 35.8 db. Tested to ASTM Std. E90-55 by Geiger and Hamme of Ann Arbor, Michigan.

Beauty is inherent in all Foldoor installations. Decorator fabrics available in a wide selection of colors and textures.

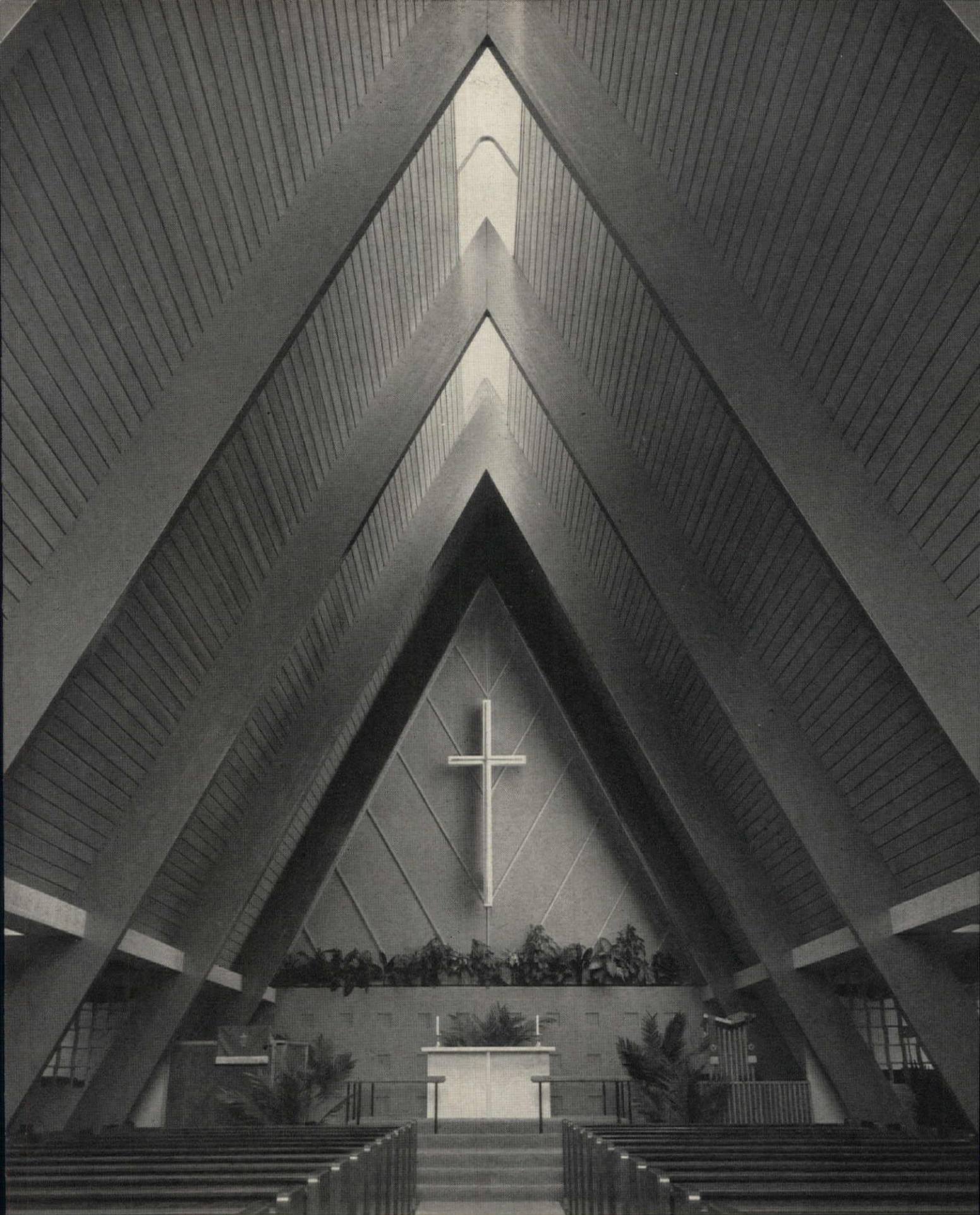


A dramatic new concept in customized grillework for institutions, offices, homes. Sculptured styrene, factory fabricated in a number of complete systems . . . ready to install. Limitless design possibilities — space dividers, screens, door accents, etc. Available in metallic or regular colors. For interiors and exteriors.

Practical and handsome, Foldoor fabrics meet the most rigid fire codes, shrug off wear, stay bright and beautiful for years to come.

See your Foldoor distributor for Super-Soundguard specifications, sound test results, and fabric samples—or mail this coupon.

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Please send complete information on:		
<input type="checkbox"/> SUPER- SOUNDGUARD Specifications	<input type="checkbox"/> FILIGRILLE grillework	<input type="checkbox"/> Have job in planning, please call
NAME _____		
FIRM _____		
ADDRESS _____		
CITY _____		STATE _____



Architects: John Richard Hellman and Robert E. Wilson, Jr., Falmouth, Mass.

LEE MEMORIAL METHODIST CHURCH, NORWICH, CONN.

A specially designed continuous Wasco Skydome surmounts the deeply pitched roof of this church sanctuary, enabling the congregation to see the open sky above while preserving an atmosphere for quiet contemplation below. The side aisles are enclosed by solid brick walls, yet receive evenly diffused, glare-free daylight through standard self-flashing Wasco Skydomes — molded of Acrylite®, the shatterproof, weathering plastic. Wasco welcomes other opportunities to combine daylighting with advanced architectural ideas. Write our Custom Engineering Department.



WASCO SKYDOMES

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CYANAMID

AMERICAN CYANAMID COMPANY
5 BAY STATE RD., CAMBRIDGE 38, MASS.



NEW! Pilot-lighted directory on a new style G-E Master Selector Switch shows instantly which of 12 circuits are ON. Also has tiny locator light (permanently ON) that permits reading the directory and operating the switch in the dark.

From General Electric—new Remote- increase lighting convenience in

In homes, you provide step-saving convenience when you specify this modern low-voltage control system. All important lights can be controlled from a single location; and additional switches per light can be installed at surprisingly low cost.

In commercial buildings, G-E Remote-Control switching can reduce installation costs, make it easier to relocate office partitions, help lower the

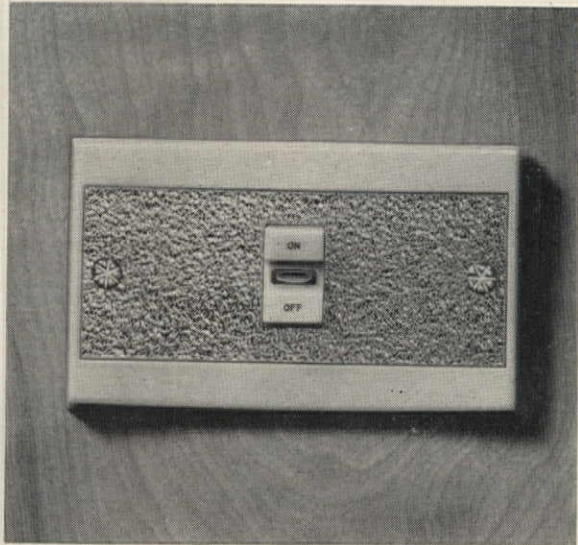
cost of operating and maintaining lighting circuits.

And now, with this new, more complete line of General Electric switches, you have greater flexibility than ever before in designing a remote control system to your specific needs.

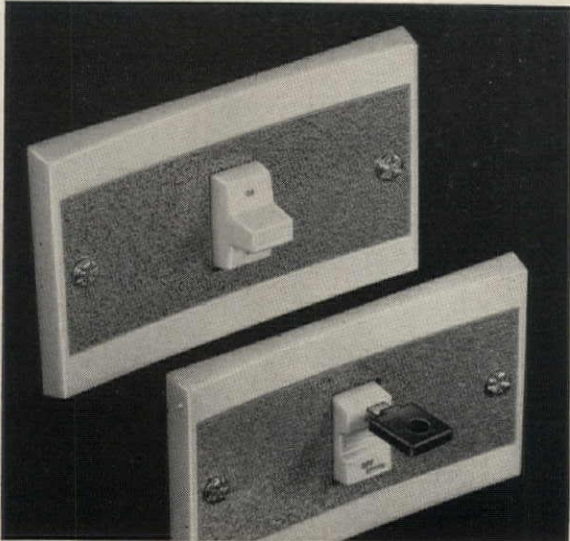
There's a new standard, push-button Remote-Control wall switch, well marked for ON and OFF — plus a *locking* type — plus a *trig-*



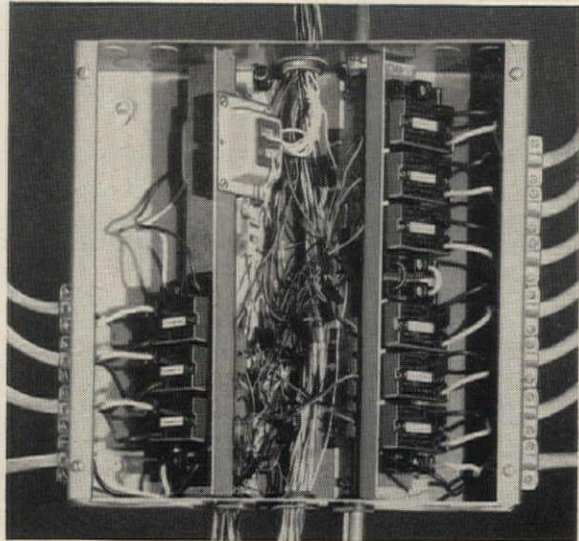
NEW! Switches that are easy to find in the dark. Now G-E Remote-Control wall switches are available with or without built-in locator lights.



NEW! Switches with built-in red pilot light. This new type of G-E Remote-Control switch is just the thing for controlling "hidden" lights.



NEW! Trigger and locking types. If your customers prefer an up-and-down "trigger" to the standard G-E Remote-Control push button, they can have it. You can suggest the locking type to prevent children from operating dangerous power tools.



NEW! "Plug-in" relay box. Provides quiet operation, easier tracing and changing of circuits if needed. It impresses customers—simplifies your wiring. A bus bar connects relays to line voltage, automatically, as they're plugged in — to give you a neat, orderly installation.



Control Wiring Switches for homes and commercial buildings

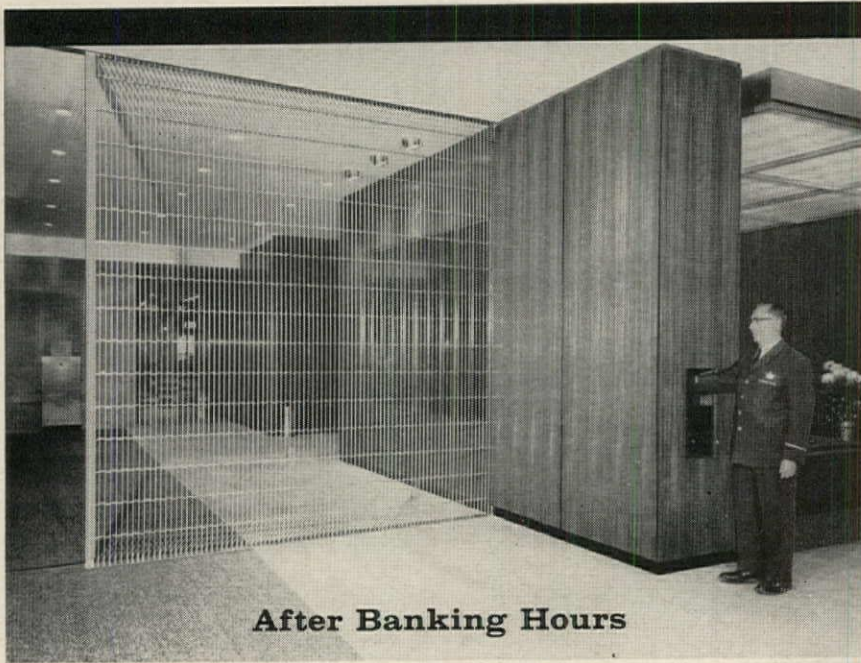
...e. And each is available *non-lighted*, *locator-*
lighted, or *pilot-lighted*.

In addition, there's the new pilot-lighted Master
Selector Switch — extension switches — plus an
interchangeable line.

For detailed information, call your nearest G-E
distributor — or write to General Electric
Company, Wiring Device Dept., Providence 7, R. I.

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Cookson Stainless Steel Grille Stands Guard for Harris Trust

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Full Protection Plus the Compatible Architectural Look

Attractive, custom-made Cookson Grilles are adaptable to a wide variety of standard and special applications. You can specify a *side-coiling* grille, such as the one shown here, or the *overhead rolling* type; made in stainless steel, galvanized steel or aluminum, with sturdy 5/16" diameter rods joined by pre-assembled, straight-line connecting links; and you have a selection of five types of operation—from manual to push-button automatic.

Exclusive features include pressure-applied bar-end caps that prevent rods from snagging or jamming in guides or brackets; wool-pile inserts on both faces of the guide that eliminate metal-to-metal contact, insure cushion-quiet operation.

And you can count on The Cookson Company for those important innovations of design and development that satisfy the individual requirements of architects, owners and contractors. See our catalog in Sweet's . . . or write for your personal copy to: The Cookson Company, 1525 Cortland Avenue, San Francisco 10, California. Sales and service in principal cities.



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278 ARCHITECTURAL RECORD September 1961

The Record Reports continued from page 274

engineering, architecture, government, municipal law, economics, sociology, geography, geology and many other fields related to urban life. A planner must recognize the important interrelationships of these areas to his own profession and be concerned for "what, where, when and why," leaving the details of "how" to other professionals.

"The program is building faster than was expected," Professor Hodgell observed. Although no special effort has been made to publicize the regional planning degree, this fall 15 majors are expected and five will take courses as minors.

Mr. Miller, the first to receive the degree, completed his course work in January and since then has been working on his thesis, "The Historical Aspects of Community Development in Kansas".

New Institute Secretary Appointed by R.A.I.C.

The appointment of Maurice G. Holdham of Ottawa, as secretary of the Royal Institute, has been announced by Harland Steele, president of the Royal Architectural Institute of Canada. Mr. Holdham joins Institute headquarters following nearly 33 years of service with the Royal Canadian Air Force. His appointment fills the position left vacant by the death of the late Leonard Fallis.

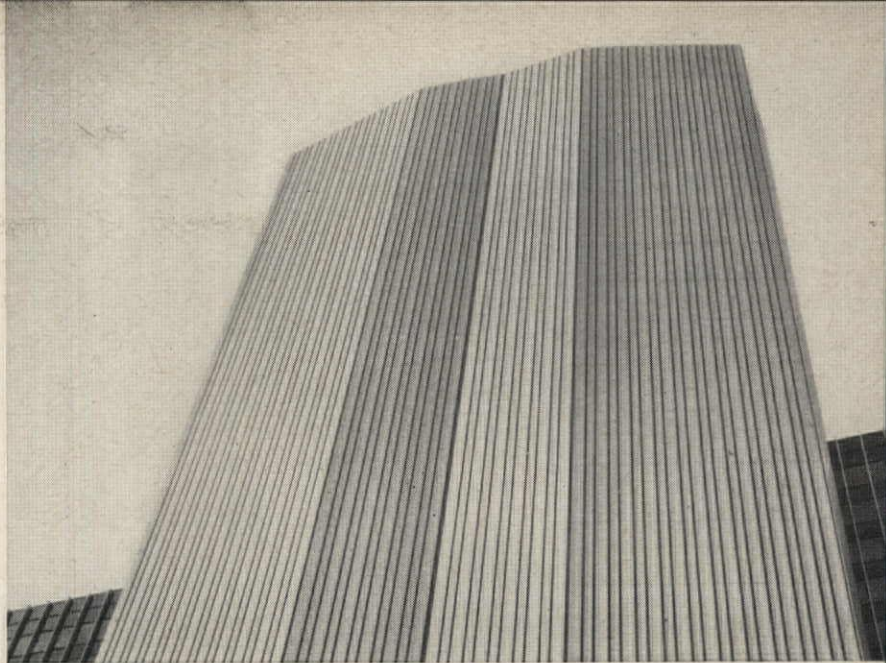
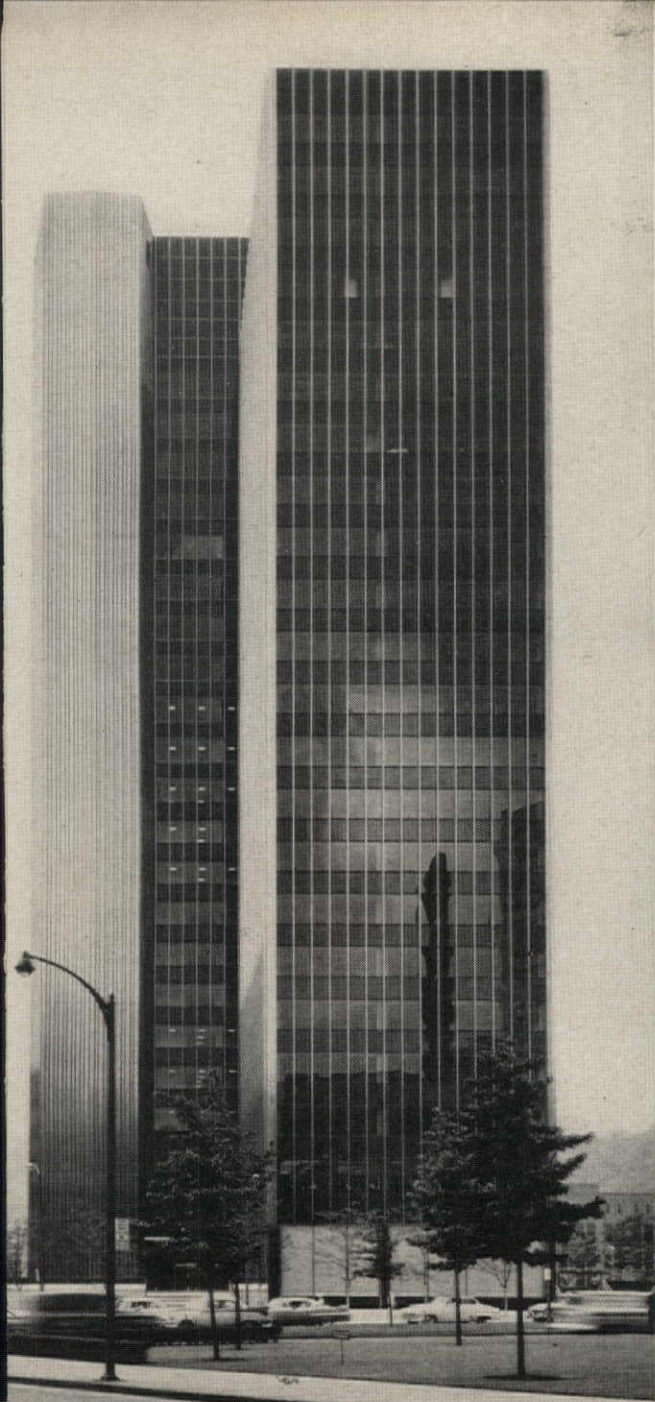
Florida Architecture Wins Graphic Award

One of three top winners in Mead Papers' second Grand National Award of Excellence in graphic arts competition was *Florida Architecture-Architecture International*.

Its editorial advisory board composed of prominent architects throughout the state of Florida, the volume was cited for its "incomparable printing and breathtaking color photography" as well as its "excellent translation of ideas within the bounds imposed by the format."

Florida Architecture-Architecture International is produced by McMurray Printers and Printing Inc. for Florida Architecture, Inc.

more news on page 282



From any angle, Nickel Stainless mullions and external service tower give this new 22-story building top-to-bottom beauty. Interesting design note: colored Nickel Stainless strips are used on the service tower for strong vertical emphasis.



Owner: The Equitable Life Assurance Society of the United States • Architects: Harrison & Abramovitz • General contractor: George A. Fuller Co. • Curtain wall fabricator and erector: Limbach Co.

New building keeps full floor space on every level with outside service tower of Nickel Stainless Steel

In Pittsburgh's new Four Gateway Center Building, The Equitable Life Assurance Society of the United States gets 400,000 square feet of virtually uninterrupted floor space. All 22 stories are left uncluttered, thanks to an external service tower that houses all elevators, mechanical and electrical equipment.

The windowless service tower, completely sheathed in Type 302 Nickel Stainless Steel, gives a strong vertical emphasis. This is accentuated by Type 302 Nickel Stainless mullions that run top to bottom on the main building in combination with colored glass.

This new building shows how architects can

use the versatility of Nickel Stainless Steel to effect their own ideas of modern design. Here are four reasons why architects choose this gleaming metal.

Competitive in cost. Its high strength-to-weight ratio means that lighter sections can be used, generally at an initial cost competitive with ordinary building metals.

Easy to maintain. Nickel Stainless is probably the easiest of all architectural metals to keep clean. It resists pitting from the atmosphere, and its surface stays so smooth that rainfall alone helps keep it clean.

Lasting good looks. High corrosion resist-

ance means long-lasting beauty for the life of the building. And Nickel Stainless resists unsightly staining from adjacent materials, such as other metals, brick, or mortar.

Easy to fabricate. Nickel Stainless forms and fabricates easily. It punches, shears, and welds readily. New roll-forming methods can often mean important fabrication economies.

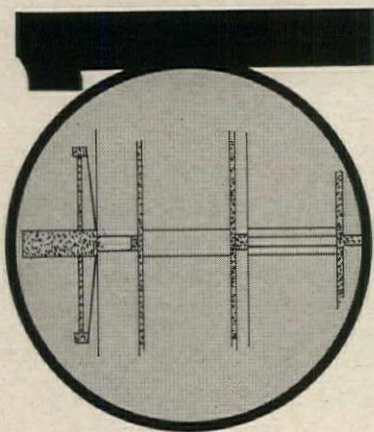
More information about Nickel Stainless Steel? Write for the 32-page booklet, "Architectural Uses of the Stainless Steels."

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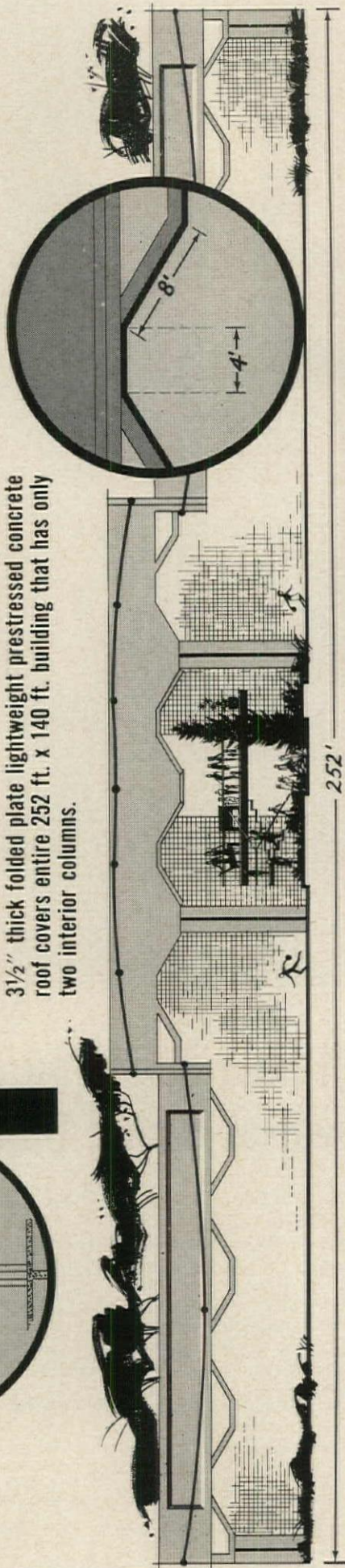
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NICKEL MAKES STAINLESS STEEL PERFORM BETTER LONGER



POST-TENSIONED PRESTRESSED CONCRETE BEAM HOLDS ROOF OF 42,500 SQ. FT. BOWLING ALLEY!

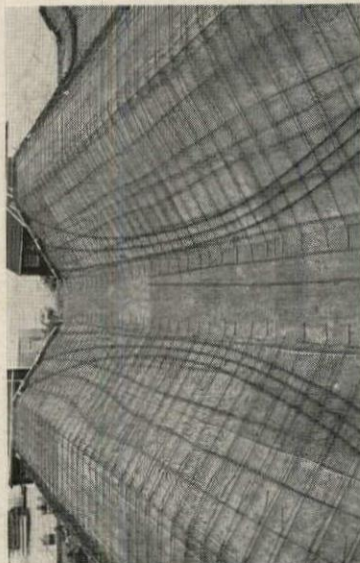
3 1/2" thick folded plate lightweight prestressed concrete roof covers entire 252 ft. x 140 ft. building that has only two interior columns.



Three cast-in-place post-tensioned, prestressed concrete beams tied together with Prescon stressing tendons into one long unit make possible the unique structure of a 48 lane bowling alley that has no support columns in the lane area.

The Buccaneer Bowl in Corpus Christi, Texas was constructed at a cost of only \$8.40 per square foot using a concrete roof and support beam prestressed by the Prescon System of post-tensioning. This price includes a partial basement, a mezzanine restaurant, observation deck and a luxurious lobby—all air conditioned. The cost of the folded plate and the supporting beams was \$1.36 per square foot of area.

Forms built of 4' x 8' plywood sheets ready for pouring of folded plate roof. Stressing tendons provide strength for 70' span.



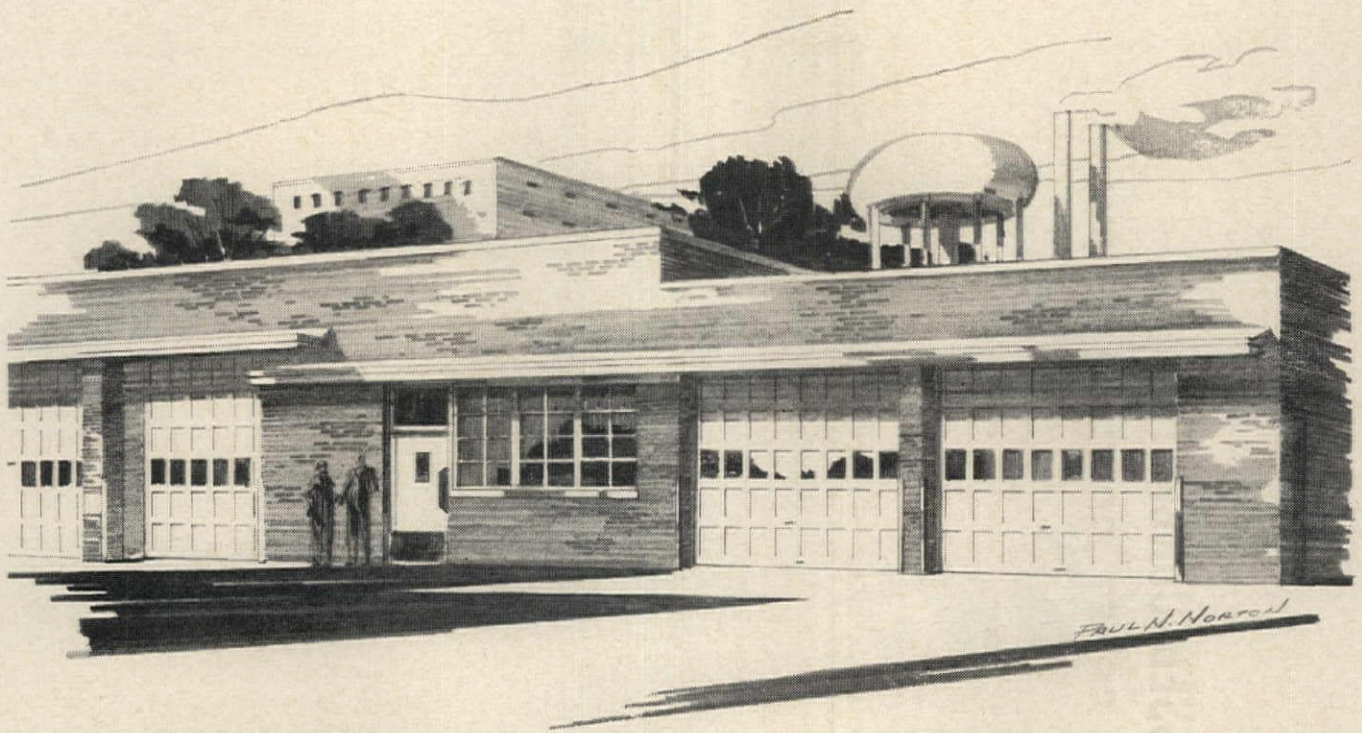
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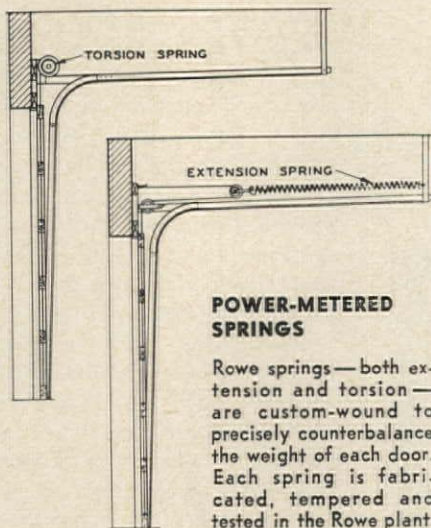
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continued from page 278

C.H.P.C. Report Finds New Housing Approach

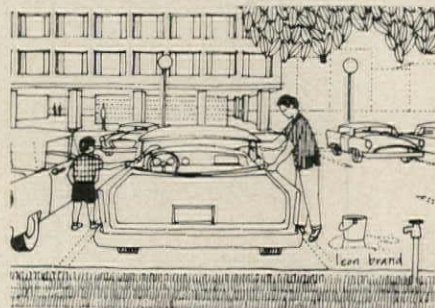
A new approach to the design of low-rent public housing is revealed in a new publication of the Citizens' Housing and Planning Council of New York, Inc. Entitled "Housing Design: A Social Theory," the 32-page report was written by Council consultant Elizabeth Wood, former executive director of the Chicago Housing Authority, under a grant

from the Phelps-Stokes Fund.

The new approach is based on a theory of what kind of social structure is desirable in a project and how to use design to get it. According to the study, such a theory would be expressed almost exclusively in the design of the space outside the dwelling units—public spaces: corridors, lobbies, grounds and the non-dwelling facilities and buildings.

The social theory of housing begins with the needs of people, the author

suggesting five categories of needs that must be served outside the dwelling: need for active exercise; need for sunshine and fresh air; need to get "out"; need to go somewhere; need to do some household chores better done outdoors, such as washing the car.



The average public housing project, charges Miss Wood, serves these needs without richness or imagination, with the result that "resources for leisure time activities . . . are more limited than in the slums."

Four principles to guide the architect in design for social structure are suggested: 1) design for visibility, so that tenants seeing their neighbors, accept them, thereby diminishing the impact of one or a few undesirable families; 2) design for loitering in lobbies and in areas between buildings as a form of recreation; 3) design leading to the easy formation of informal groups, made possible by facilities calling for group use and by purposeful arrangements of benches and ground equipment; and 4) design for social controls, through which widespread acquaintanceships are promoted and a general recognition of a community of feeling about the project among tenants, with the result that tenants themselves take care of the property.

Among the recommended design features to encourage rather than deter freedom of action and tenant-to-tenant communication are: spacious exterior corridors, glass-enclosed, well-lighted lobbies suited to recreation or lounging, playgrounds for children of different ages located so mothers can exercise control, areas where teenagers can gather.

"Design," says the report, "can facilitate the social fabric out of which a tenant organization grows."

The illustrated report is available at \$1.00 a copy from the Citizens' Housing and Planning Council of New York, Inc., 20 W. 40th St., New York 18.

more news on page 286

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Illustrated below is Haws Model 77 as installed in corridors of the new Tidewater Oil Building, Los Angeles, California. (Architect: Claud Beelman, A.I.A., and Associates.) It is semi-recessed in brilliant marble walls, adjacent to the elevators. Haws Model 77 is a classic of good design.



See Haws in Sweets File—or write for the complete Haws Catalog.

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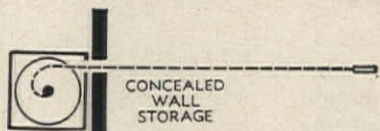
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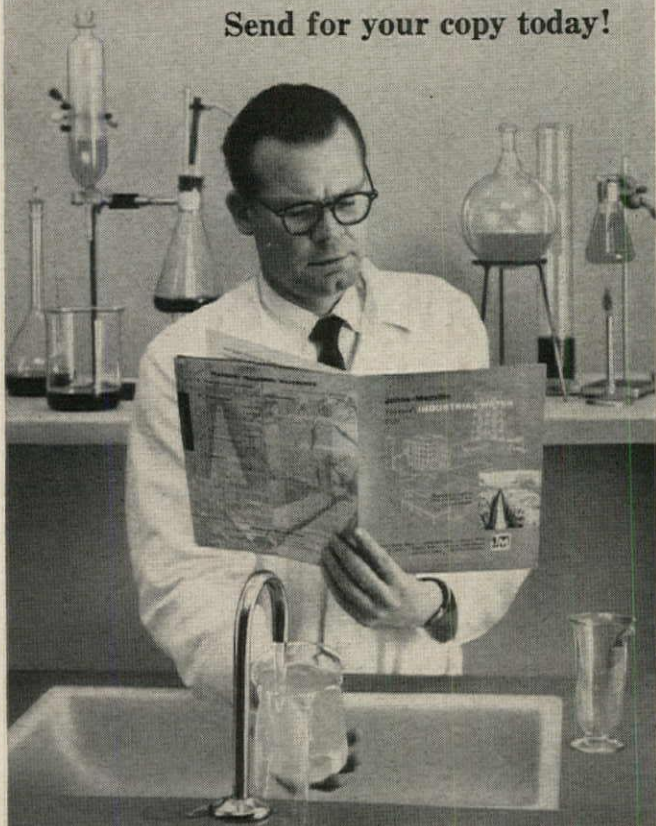


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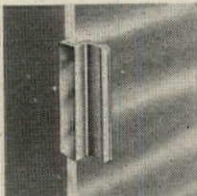
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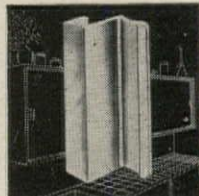
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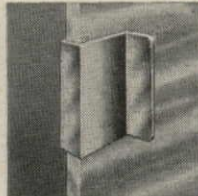
These new pulls are carefully designed to give lifelong beauty and service. Each fulfills all the necessary requirements for easy operation, clean and handsome appearance, ease of installation and freedom from maintenance worries.



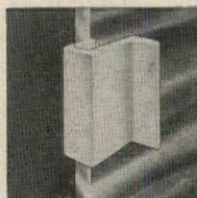
GP-14 pull for butt jam. Extruded aluminum, anodized finish. Spring tension holds to taped edge. In 2 3/4" or 6' lengths.



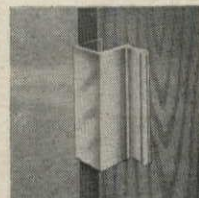
GP-15 pull for recessed jam. Extruded aluminum, anodized finish. Spring tension holds to taped edge. In 2 3/4" or 6' lengths.



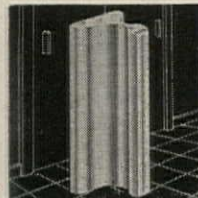
GP-16 pull of extruded aluminum, anodized finish. Snaps in place on taped edge. In 2 3/4" or 6' lengths.



GP-17 pull of hi-impact plastic. Standard color light gray. Spring tension holds to taped edge. In 4 7/16" and 6' lgths.



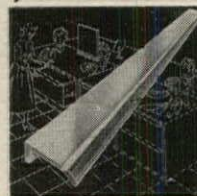
WP-18 Pull for 3/4" doors. Extruded aluminum. Fastens with screws in back. In 2 3/4" and 6' lengths.



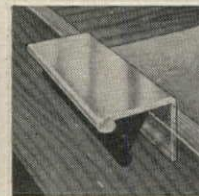
WP-34 Pull for panel doors. Extruded aluminum, anodized finish. Mounts easily. In 2 3/4" and 6' lengths. Other colors available.

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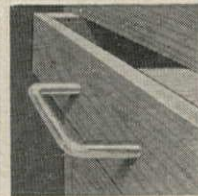
Here is a family of beautiful drawer and door pulls that answers all the problems for commercial furniture and cases. Many unique effects can be achieved... they install easily and quickly... they're sturdily designed to give years of trouble-free service.



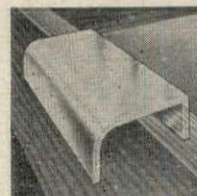
DP-40 Drawer pull. Extruded aluminum with anodized finish. In 3 7/8" and 6' lengths. Other colors available.



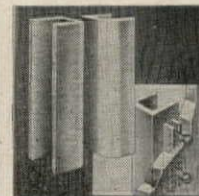
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The Record Reports

continued from page 282

"House of Freedom": Experiment in Housing for Elderly

The "House of Freedom," an experimental demonstration home for the elderly, was opened at the White House Conference on Aging in January. Built in downtown Washington, D.C., by the Douglas Fir Plywood Association in cooperation with the National Retired Teachers Association and the American Association of Retired Persons, "Free-

dom House" had as its purpose focusing national attention on the specific housing needs of the elderly. It was shown to demonstrate what can be done in a single family dwelling unit. The sponsors felt it would stimulate better low-cost housing programs by private builders and public agencies.

The house was designed by D.F.-P.A. staff architect Robert B. Waring. Architectural consultant was Professor Alexander Kira, assistant

director, Housing Research Center, Cornell University, Ithaca, N.Y. Providing 888 sq ft of living space plus 392 sq ft in the garage and attached hobby room, the design of the house is characterized by a central courtyard. Windows around the court allow the owners to completely open its interior if desired. Carefully planned areas of glass, combined with an interior ceiling which follows the roofline in the living areas, and doors and hallways 6 in. wider than normal are intended to give a sense of spaciousness.



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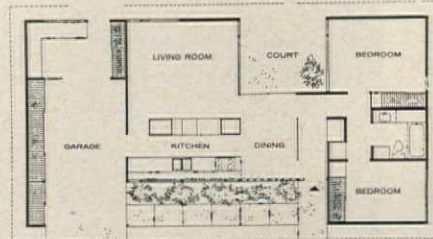
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Floor plan of Freedom House

Features designed to make the house easy to maintain are: no window glass higher than 6 ft 8 in. from floor level; pull-down light fixtures to simplify bulb changing; easy-care floor and wall surfaces inside and out; and a sit-down kitchen.

Other features are: no changes in level; electrical outlets 18 in. from floor; light switches and doorknobs a convenient 36 in. high; master light switches at both entrances and in master bedroom; high and uniform light levels; bathroom equipped with tub-seat and grab-bars; nonskid surfaces on all floors.

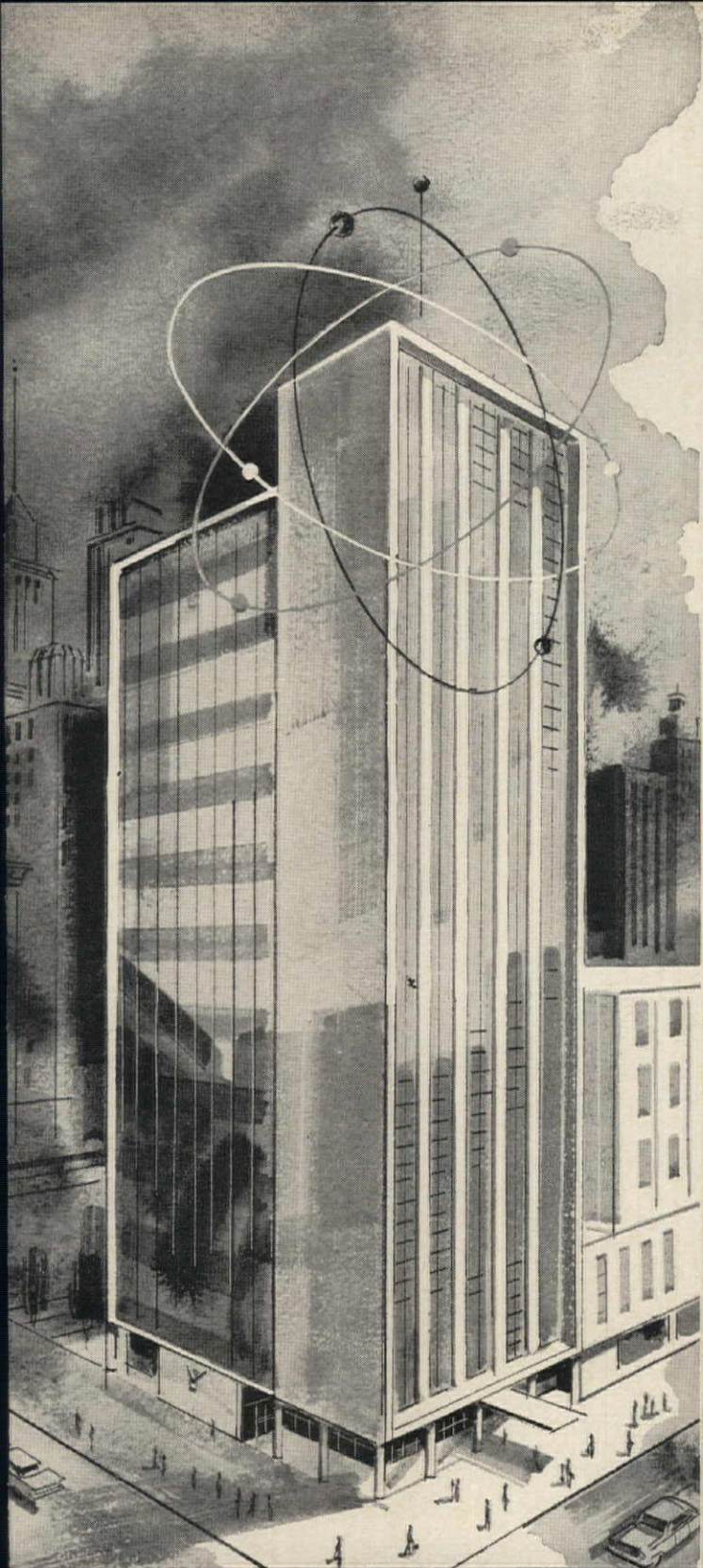
It is said that House of Freedom is capable of a large number of architectural variations and of being combined as a duplex, "fourplex" or as a unit in row or tract housing.



"Fourplex" variation: Freedom House

The cost of the house is about \$9000, plus land, but according to those who produced the house, it should be possible to build it for less. Some of the finishes used in the demonstration house are more expensive than necessary, and the architectural

continued on page 291



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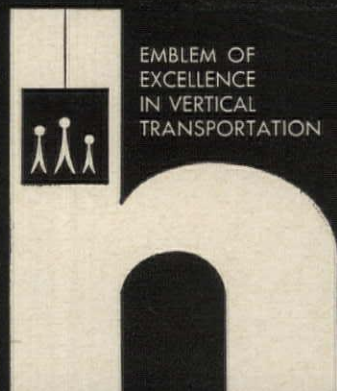
* *Haughton's advanced program in elevator systems research and engineering, with specific emphasis on the creative application of electronic devices and instrumentation for betterment of systems design and performance. Registered in U. S. Patent Office.*

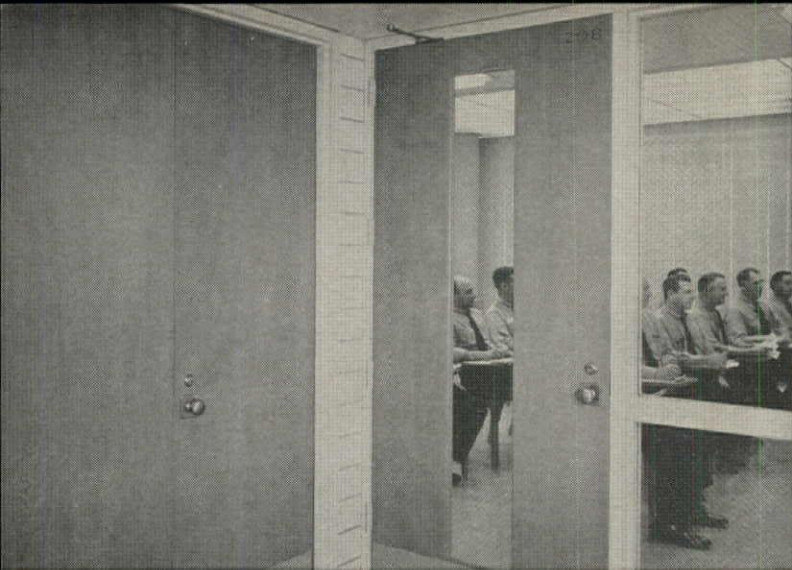
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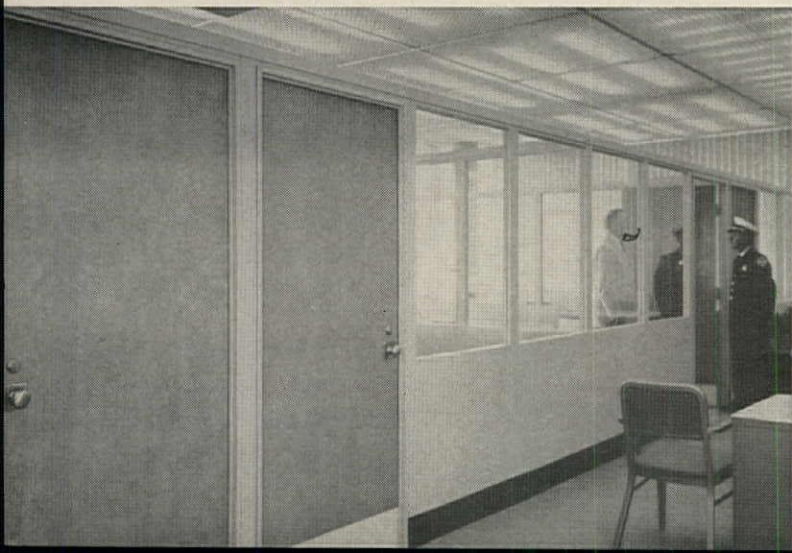


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WRITE FOR POWER SCAFFOLDING and "ROOF RAILER"
brochures, engineering data and installations.

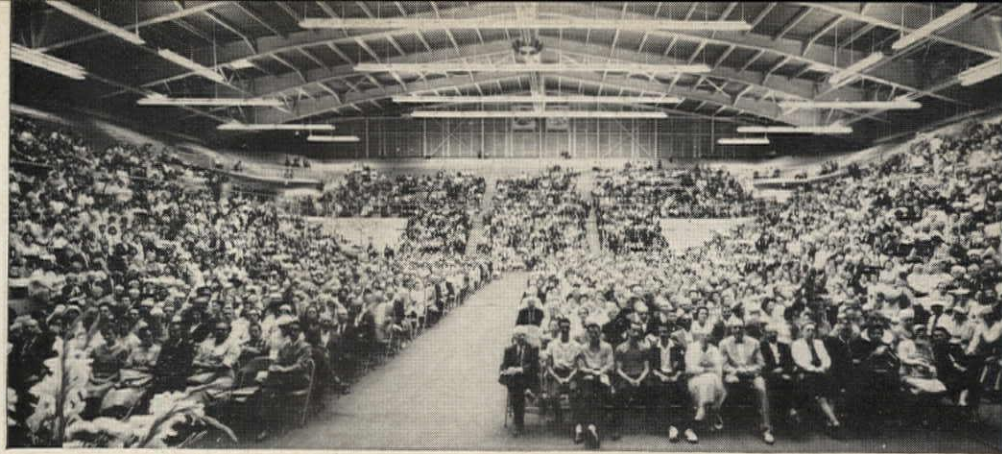


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ANDERSON, INDIANA

Architect: Arthur B. Henning,
Anderson, Ind.



SEATS OVER 8000 PEOPLE *when open.....*

87% of seating area recovered when closed!

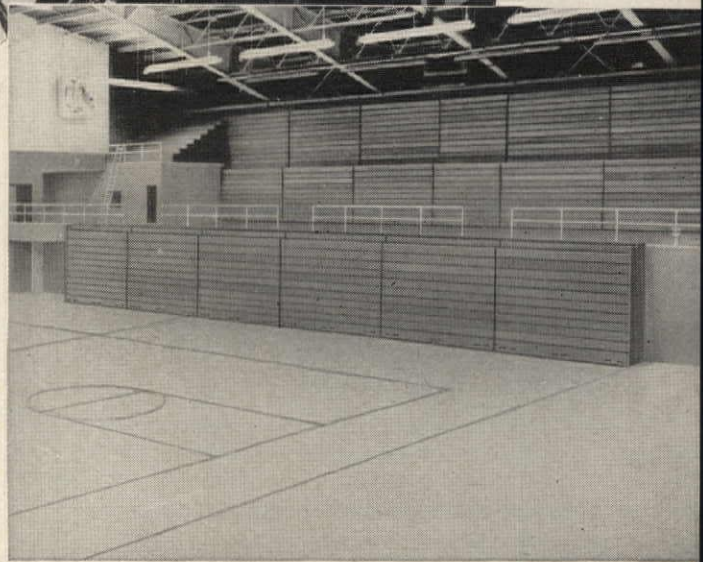


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This Medart installation occupies nearly 22,000 square feet of floor space when opened and seats 8100 people! When closed, 19,000 square feet are restored for normal daily use.

Huge installations like this become thoroughly practical because of Medart's floating telescopic seat supports and interlocked twin rollers under each upright. Time and effort for opening and closing are cut to a minimum. Complete safety is insured by the free-standing steel understructure which will support over 400 pounds per lineal foot of seat row. Wood members add even more strength. Staggered dual-angle uprights distribute weight evenly over floor area—not on casters, walls, diagonal braces, other stress-bearing devices.

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Medart Telescopic Gym Seats are available with 10½" or 11½" row rise and 22" or 24" row spacing.

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RAULAND-BORG CORPORATION

3535-R Addison St., Chicago 18, Ill.

The Record Reports continued from page 286

style is more costly than a simple version. It probably would be possible to reduce the cost to about \$8000 if the carport and hobby room were eliminated and if the roof treatment were adapted to trussed rafters. This would vary with local costs.

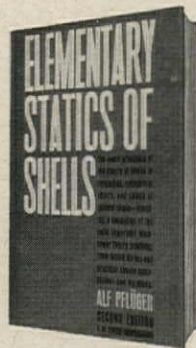
Construction techniques studied and recommended in this house can reduce on-site labor to a minimum. The basic plan is adaptable to a number of cost and time-cutting plywood building techniques, e.g. the builder fabricated entire plywood wall sections in the demonstration model and then simply tilted them into place. Other methods are panelization, in which walls, floors and roof can be assembled from pre-framed components of specific thickness and types of plywood; componentization, in which even larger "building blocks" go together at the site after being assembled under factory conditions. There are four basic alternates in floor construction, all utilizing the large size and strength of full-size plywood sheets, and all more economical and more practical than old-fashioned methods. They are: a method in which pre-framed 4 x 8-ft panels are simply fastened in place over girders 4 ft apart; 2.4.1 Tongue-and-Grooved panels, 1 1/8-in. thick plywood that acts as both subfloor and underlayment over the same girder system; stressed skin panels, "sandwiches" of two plywood layers, with heat ducts and lumber framing between; and conventional plywood subflooring and underlayment, which was used on the demonstration model.

Almost 5000 people inspected the house during the 3-day conference. Following its enthusiastic reception, Donald A. Jaenicke, D.F.P.A. special projects director, said, "It's obvious there's a big, diverse market here . . . for the tract builder . . . for the small local builder. It's also obvious that the market exists everywhere and that many people in the 55-plus age bracket can pay for what they want."

An "encyclopedia" of information on retirement housing that includes study plans for House of Freedom is available by writing to Douglas Fir Plywood Association, Tacoma, Wash.

more news on page 298

Now available for the first time in English ELEMENTARY STATICS OF SHELLS Second Edition



by Alf Pflüger

Translated by Ervin Galantay

Here is a simple and methodical introduction to shell design. Newly translated, this compact work is designed to meet the urgent demands of practicing engineers and architects.

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An illustration is the 11-story \$4,500,000 Blair Building, now under construction. This handsome addition to the Chicago skyline will serve both as a general office building, and as Chicago headquarters for the John W. Blair Company. Office space totals 175,714 sq. ft. The interior features Devoe Velour Flat and Semi Gloss Enamels.

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Courtyard scene at new home offices of Leo A. Daly Company, Omaha, Nebraska. This unusual building was custom-designed by Leo A. Daly Company for the working needs, c

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"I like the way this unit automatically adjusts itself to varying loads. I really can't think of an easier system to maintain," says Fred Lodes, Stationary Engineer, shown here at the 80-ton, gas-operated Carrier absorption unit, Leo A. Daly Building, Omaha, Nebraska.

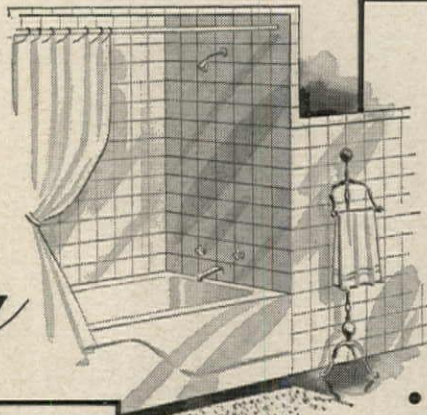
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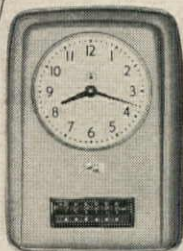
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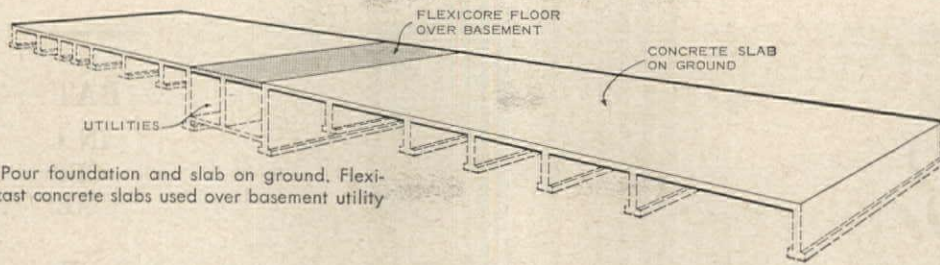
And Its Affiliate

RESTORATION COMPANY

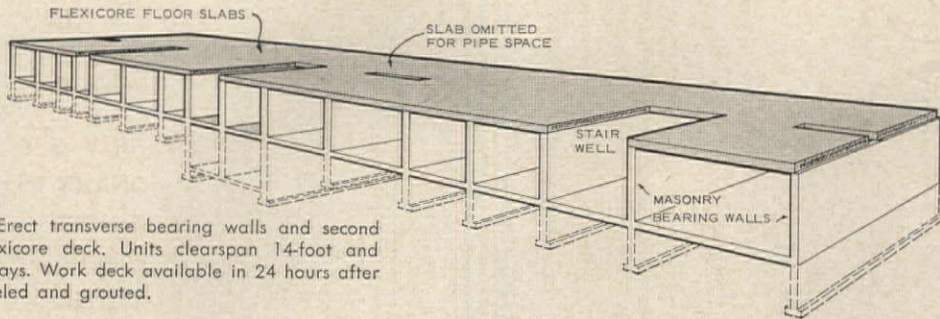
1223 Syndicate Trust Bldg.

St. Louis 1, Missouri

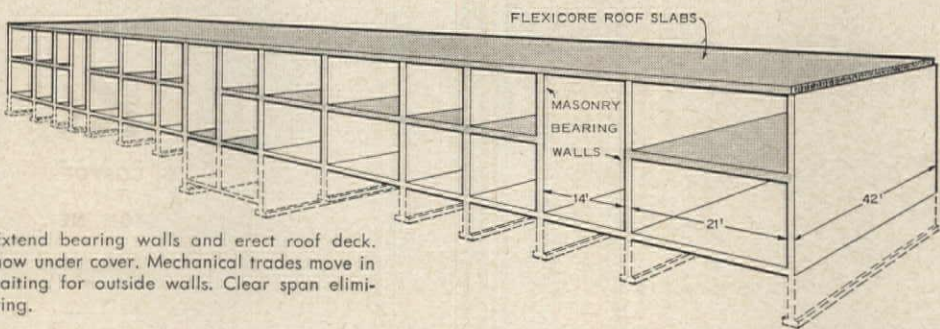
NATIONWIDE SERVICE



STEP 1. Pour foundation and slab on ground. Flexicore precast concrete slabs used over basement utility rooms.



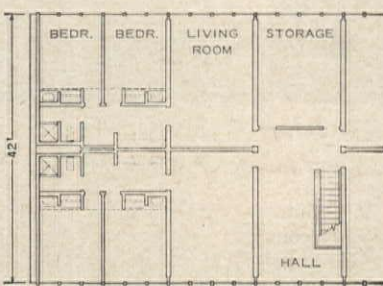
STEP 2. Erect transverse bearing walls and second floor Flexicore deck. Units clearspan 14-foot and 21-foot bays. Work deck available in 24 hours after slabs leveled and grouted.



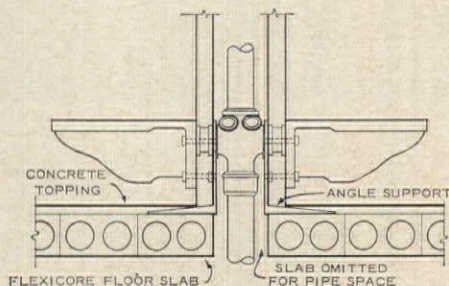
STEP 3. Extend bearing walls and erect roof deck. Building now under cover. Mechanical trades move in without waiting for outside walls. Clear span eliminates shoring.

Skidmore, Owings and Merrill, Architects—Engineers

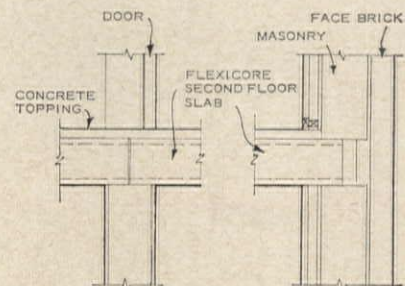
How Air Force Academy Got New Buildings Under Cover Quickly



TYPICAL PLAN SECOND FLOOR



DETAIL—PIPE SHAFT



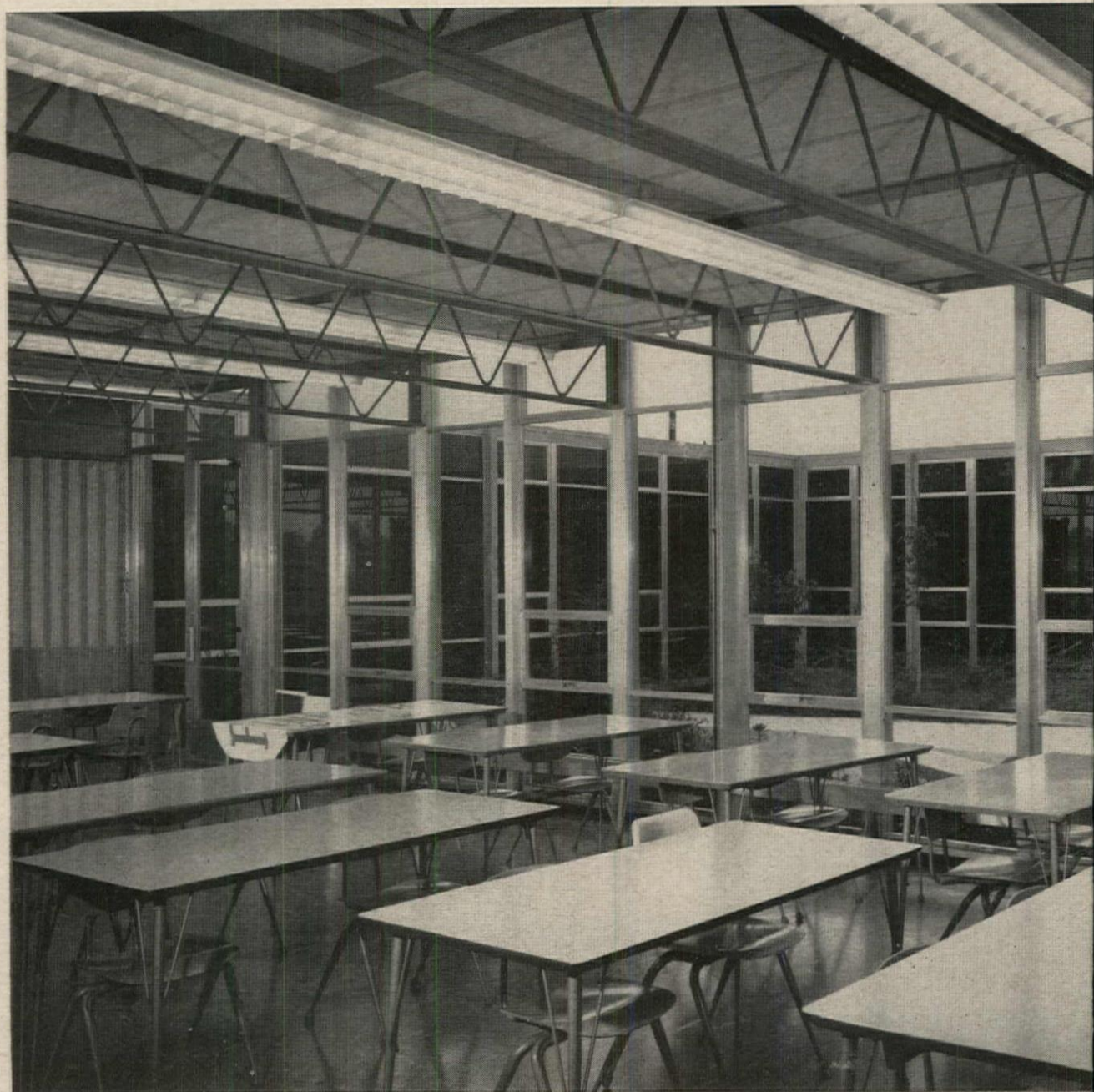
INTERIOR BEARING WALL END BEARING WALL



The Bachelor Officers' Quarters and Visiting Officers' Quarters at the new Air Force Academy have precast Flexicore floor and roof decks because they provided fast erection, a fireproof structure and a reasonable cost.

For more information on this project, ask for Flexicore Facts 84. Write The Flexicore Co., Inc., Dayton, Ohio, Flexicore Manufacturers Association, 297 S. High St., Columbus 15, Ohio, or look under "Flexicore" in the white pages of your telephone book.





Plenty of Pittsburgh Polished Plate Glass means more natural light, less eyestrain for Finneytown High pupils.

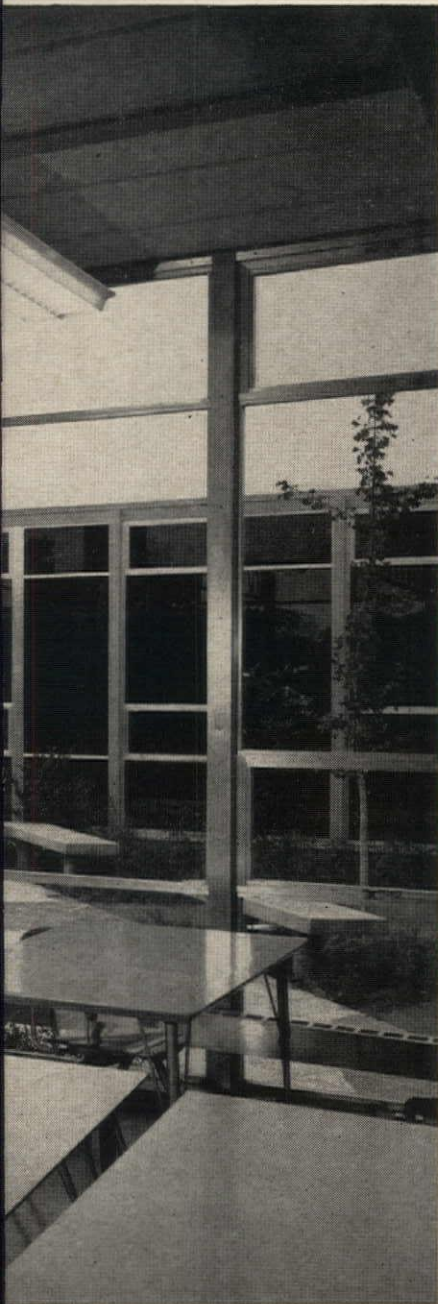
This school was designed with eyesight

Wherever you look around the Finneytown High School in Finneytown, Ohio, there's glass—PPG Glass that lets in *plenty* of natural light, adds an extra measure of beauty to the buildings, and provides an ideal learning environment.

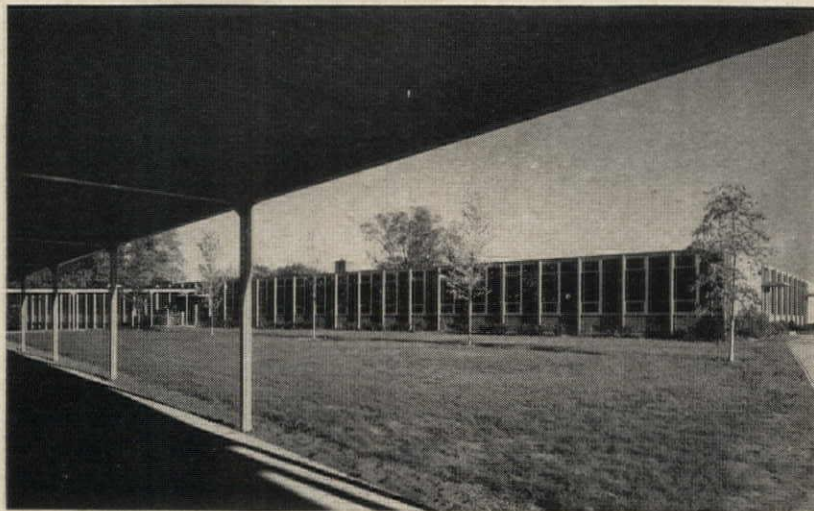
Two PPG Glass products play a big part in making this school the bright, spacious place that it is: Pittsburgh Polished Plate Glass and PENNVERNON® GRAYLITE™ 14 Glass. Polished Plate Glass is used in areas that demand maximum light transmission where natural light is essential. PENNVERNON GRAYLITE is used where glare is a problem. GRAY-

LITE 14 is heat-absorbing glass that has a pleasant neutral shade which is undetectable to occupants. It does not change outdoor colors, yet substantially reduces glare that can be so hard on the eyes. It helps keep the school cooler and more comfortable in warm months, too.

Inside and out, this is a modern, attractive school building . . . as beautiful as it is functional . . . thanks to glass from PPG. For more information on PPG products, write Pittsburgh Plate Glass Company, Room 1162, 632 Fort Duquesne Blvd., Pittsburgh 22, Pennsylvania.

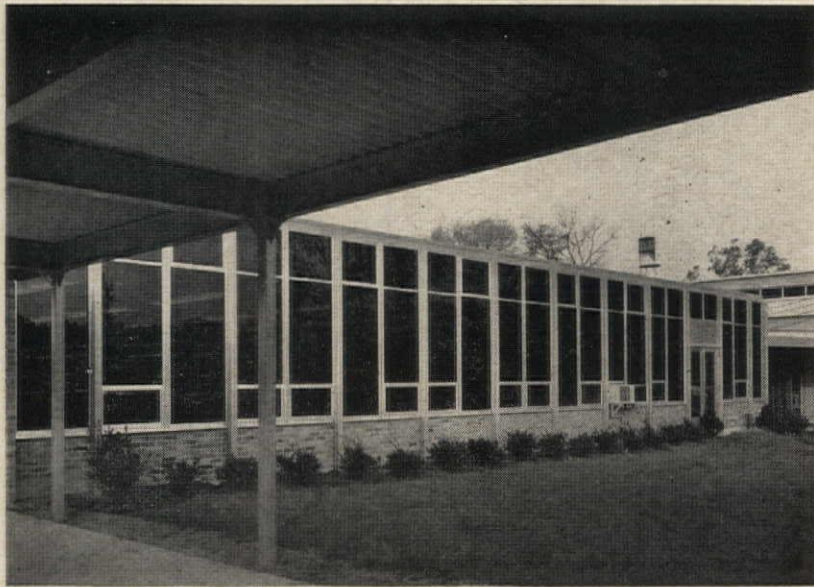


Finneytown High School, Finneytown, Ohio
 Architect: *Woodie Garber & Associates, Cincinnati, Ohio*
 Contractor: *Holt & Reichard, Norwood, Ohio*



Pittsburgh Plate Glass products enhance the appearance and help make the Finneytown school a pleasant place to attend.

PENNVERNON GRAYLITE 14 reduces the sun's glare and helps make this school a cooler and more comfortable building during the warm months.



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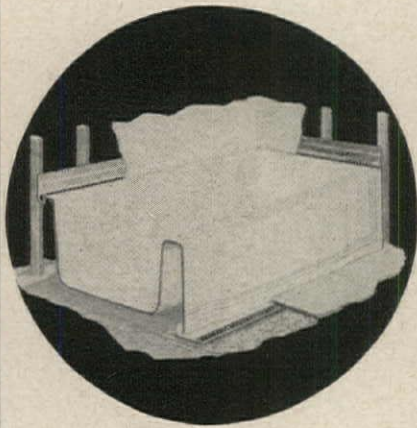
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 Plumber Builder

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City Zone

State

The Record Reports

continued from page 291

Ford Foundation Grants: Creative Arts Studies

The Ford Foundation is again offering a limited number of fellowships to assist persons not regularly associated with academic institutions to undertake or complete studies in the creative arts. Letters of application for consideration in this third year of the fellowship program should be submitted before Oct. 16.

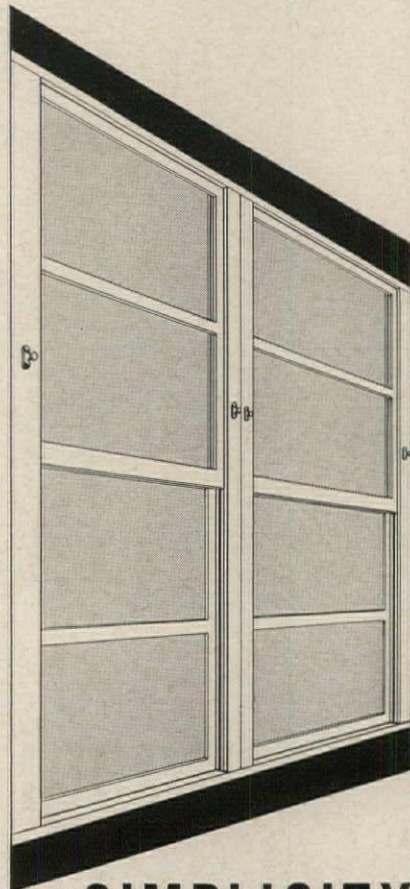
Part of the broader Ford Foundation program in Humanities and the Arts which explores needs and opportunities in music, the theater, the visual arts, literature, the dance and other creative fields, the fellowships are for research and study. They are not designed to support advanced training, artistic creations, performances, or any projects not requiring research or study. In reviewing applications primary attention will be directed not to the art concerned but to the individual applicant and the potential significance of his contribution to others interested in the field.

Fellowships will not be made for consecutive periods of less than three months, and generally not for a period longer than one year. The amount of each fellowship will vary in relation to the applicant's estimate of cost, but in general will not exceed \$7500 for a 12-month period.

The fellowships for Studies in the Creative Arts are available to U.S. citizens who are not regularly members of academic faculties eligible for consideration under other fellowship programs designed to assist scholarly research and publication. Eligible for consideration are: creative artists wishing to undertake particular studies useful to others in their fields; curators, directors, conductors, and other persons associated with non-academic institutions in the arts, such as museums, theaters, and orchestras; and critics or laymen with particular interest in surveying artistic subjects.

For further information write The Ford Foundation, Fellowship Program for Studies in the Creative Arts, 477 Madison Ave., New York 22.

more news on page 306



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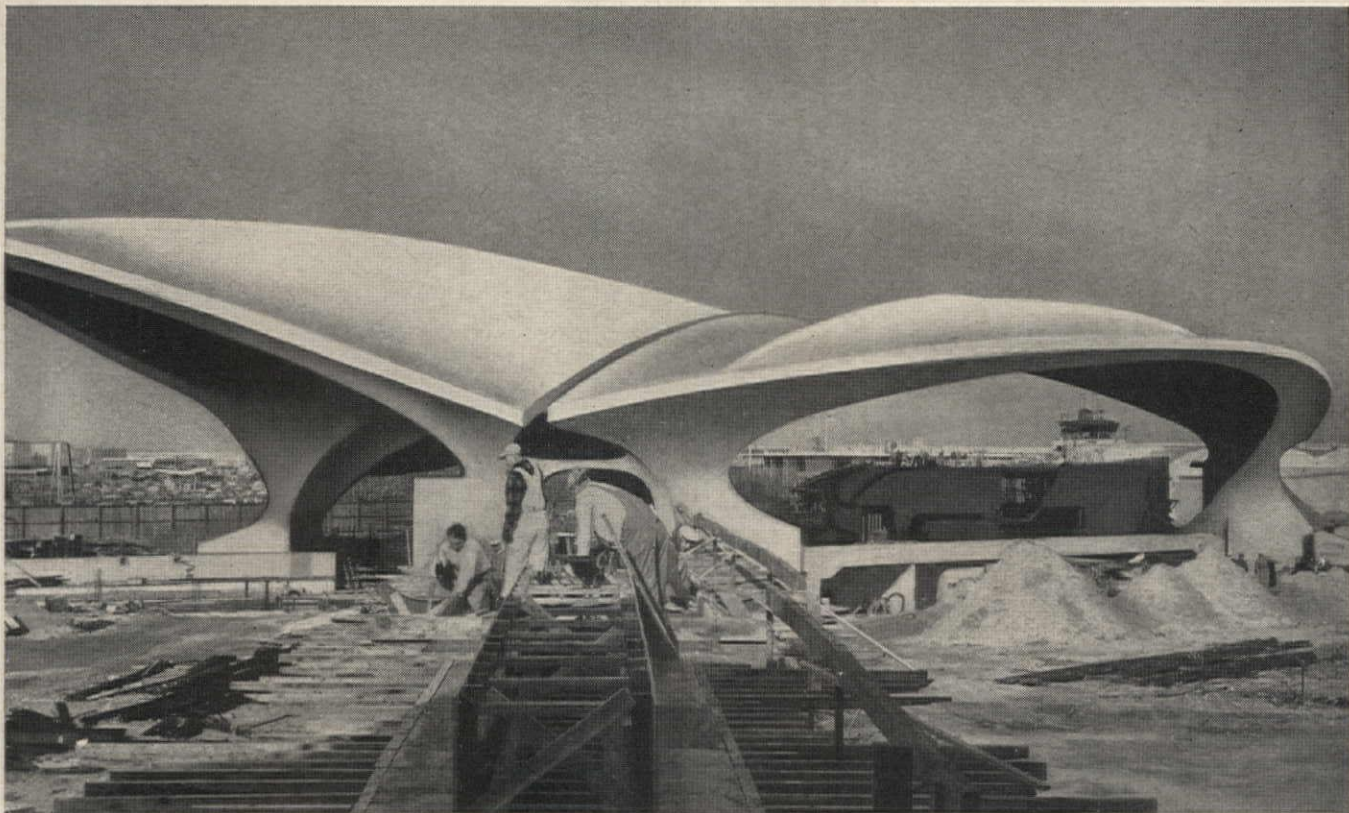
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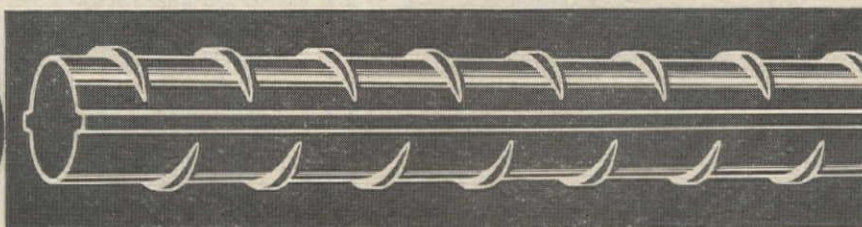
Imagine what You can create with **REINFORCED** **CONCRETE**

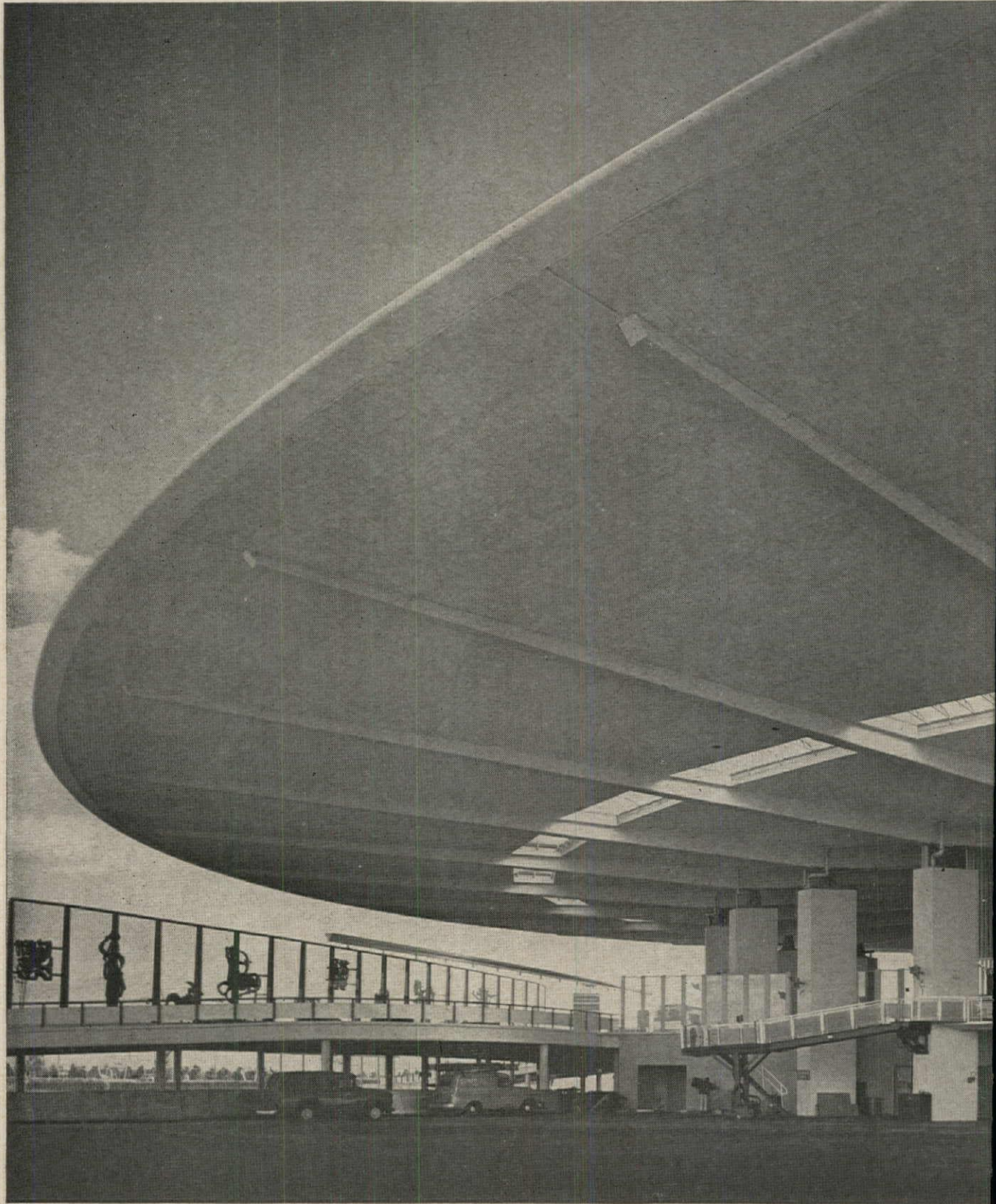
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New Pan American World Airways Passenger Terminal, New York International Airport.

Architects and Engineers: Tippetts-Abbett-McCarthy-Stratton, New York.

Associated Architects: Ives, Turano and Gardner.

General Contractor: Turner Construction Company.

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frees design from conventional flashing limitations,
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45,000 square feet of Saraloy 400 roof flashing provide hundreds of *permanent* moisture seals for this ultra-modern air terminal. Among the many critical flashing problems solved by Saraloy 400 were: sealing 875 acute and obtuse angles created by almost inaccessible junctures of structural steel beams and purlins; flashing steel-to-concrete joints and lining scupper holes.

The design of the terminal's elliptical cantilevered roof produced 144 different odd shapes and angles where beams, purlins and equipment housing shells meet. Flashing with conventional materials would require that each seal be specially cut and custom-fitted, often to match curved contours. The labor costs for installing metal flashing would have been prohibitive. Because Saraloy 400 could be quickly and easily cut and formed on the job, labor costs were about 25% less than the cost of installing conventional flashing materials. And each seal is permanent.

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Saraloy accomplishes difficult flashing
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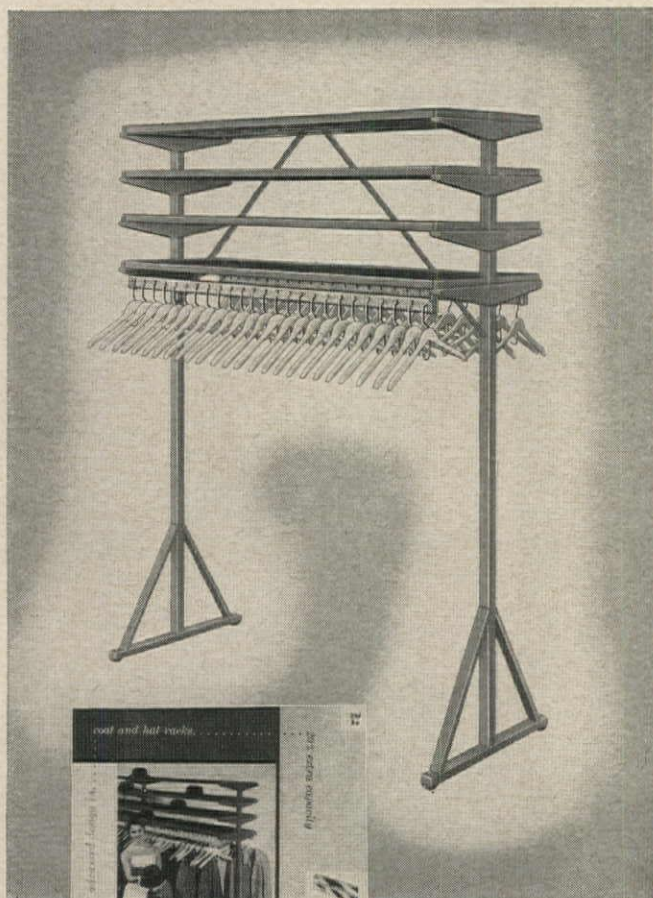
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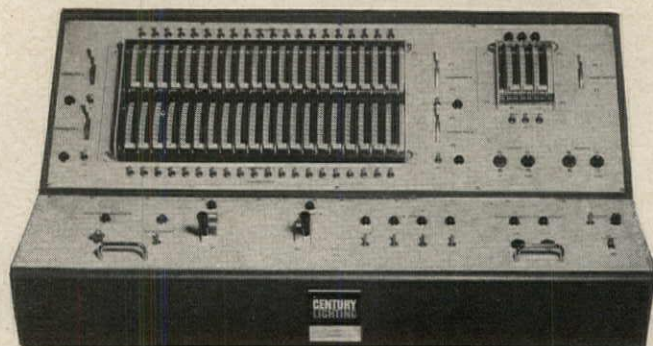
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Get complete details from your building materials dealer, consult Sweet's File, or write Marlite Division of Masonite Corporation, Dept. 905, Dover, Ohio.

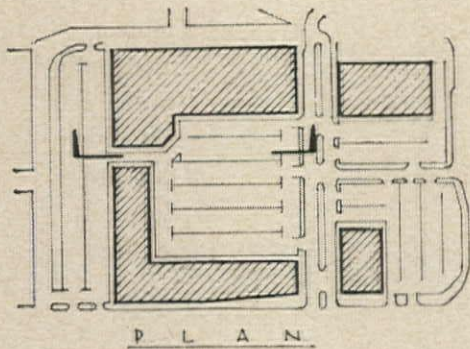
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DIVIDEND ENGINEERING

FORECASTS A \$30,500 SAVING ON EQUIPMENT AND \$2,250 IN YEARLY OPERATING COSTS AT NEW SHOPPING CENTER, NEW ORLEANS, LA



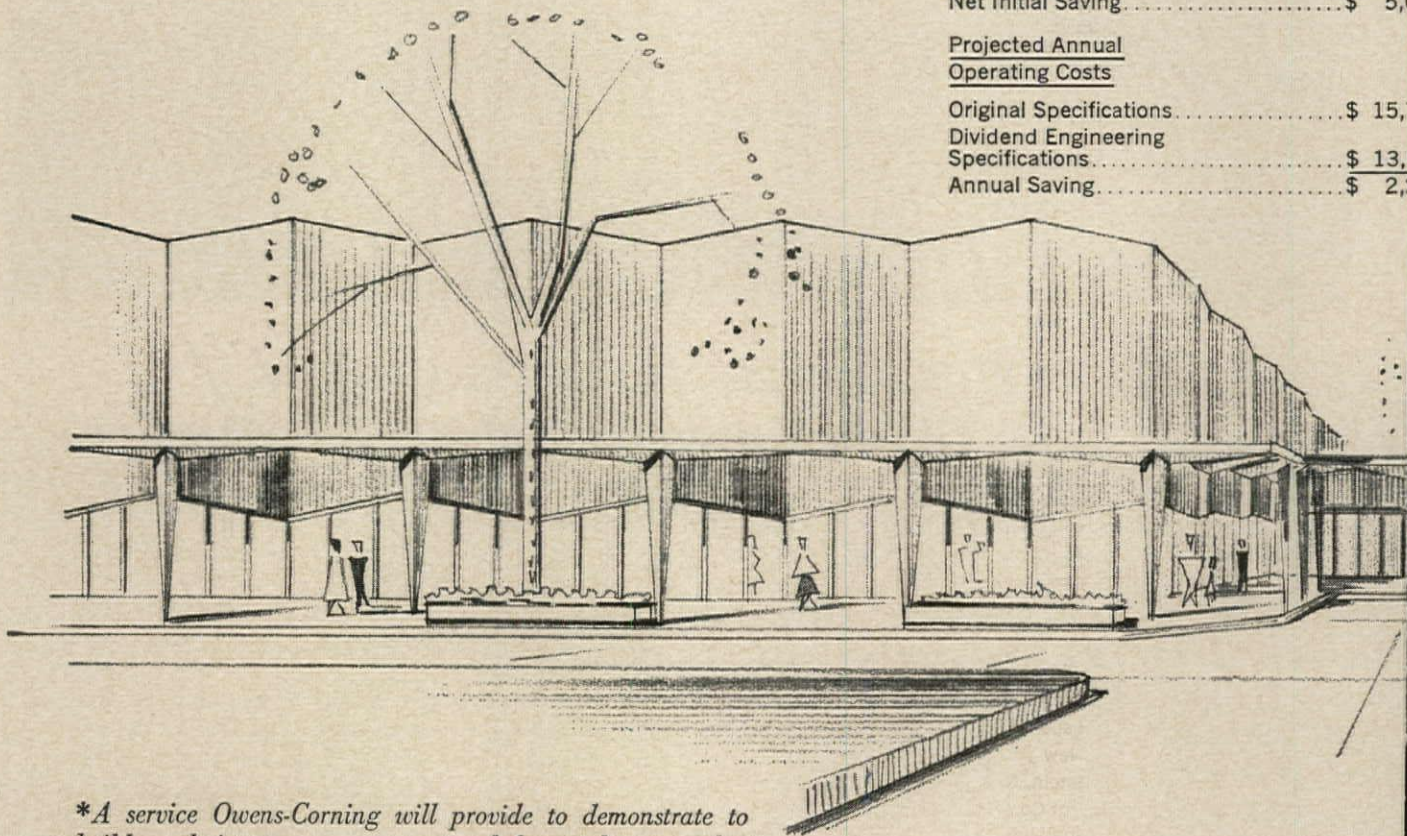
DIVIDEND ENGINEERING DOLLAR-SAVING PROPOSAL

Cost of Heating & Cooling Equipment

Original Specifications.....	\$277,000
Dividend Engineering Specifications.....	\$246,500
Predicted Saving.....	\$ 30,500
Additional Insulation Cost (in place).....	\$ 25,000
Net Initial Saving.....	\$ 5,500

Projected Annual Operating Costs

Original Specifications.....	\$ 15,750
Dividend Engineering Specifications.....	\$ 13,500
Annual Saving.....	\$ 2,250



**A service Owens-Corning will provide to demonstrate to builders, designers, management and financial groups that optimum use of Fiberglas materials can result in reduced initial and operating costs and improved building performance.*

A \$25,500 INVESTMENT IN ADDITIONAL INSULATION PREDICTS THESE SAVINGS:

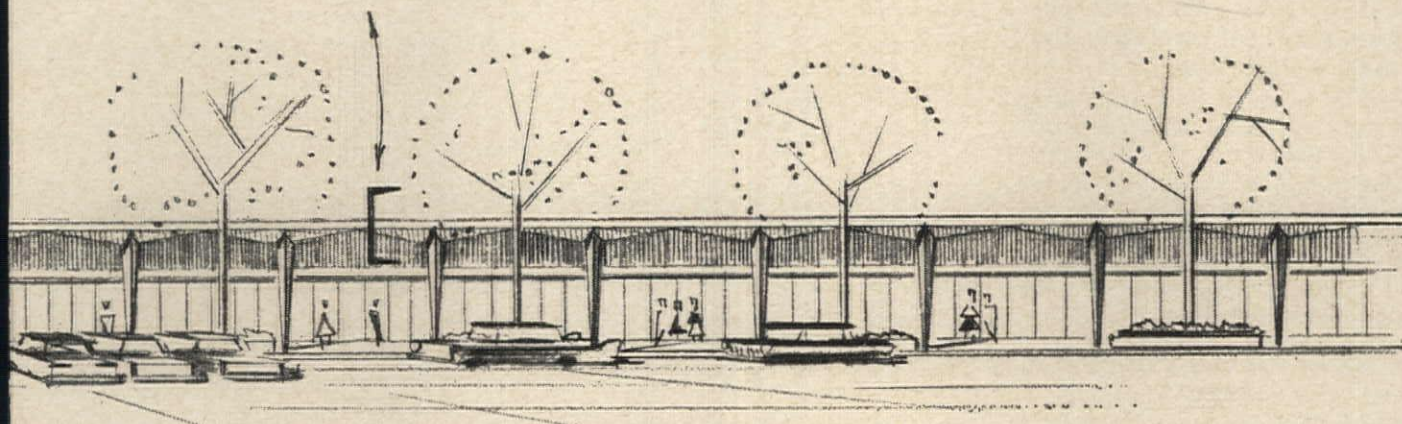
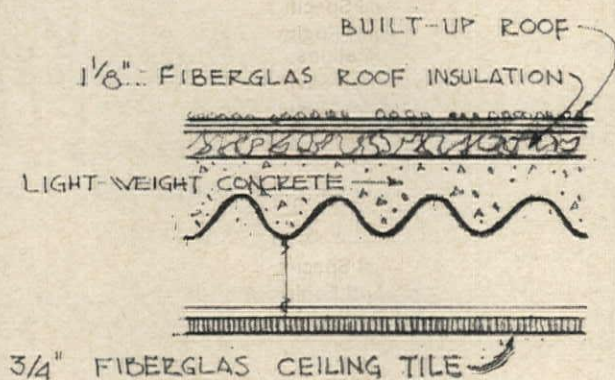
\$30,500 ON HEATING-COOLING EQUIPMENT

Original specifications called for a light-weight concrete roof slab and Fiberglas Perma Ply[†] Built-up Roofing. A Dividend Engineering analysis forecast that installing 1 1/8" of Fiberglas Roof Insulation at a cost of \$25,500 would reduce the equipment cost by \$30,500—a \$5,000 net saving to the owner.

\$2,250 FORECAST SAVINGS IN ANNUAL OPERATING COSTS

Dividend Engineering calculations also forecast a \$1,361 saving in power for cooling, and another \$889 in heating costs.

Let us show you how Dividend Engineering forecasts a high return on the owner's investment, and makes the benefits of year-round air conditioning economically feasible for more and more industrial and commercial buildings. Just talk to your Fiberglas representative, or write: Owens-Corning Fiberglas Corp., Industrial & Commercial Division, 717 Fifth Ave., New York 22, or Santa Clara, California.



CARROLLTON AVENUE SHOPPING CENTER, NEW ORLEANS, LA.—HEATED AND COOLED

Architect: Curtis & Davis and Associated Architects & Engineers, New Orleans and New York City.

Mechanical Engineer: H. C. Goldstein, New Orleans.

General Contractor: Gervais Favrot Co., New Orleans.

Fiberglas products used in this installation: Perma Ply Built-up Roofing; Roof Insulation; Ceiling Board; Duct Insulation.

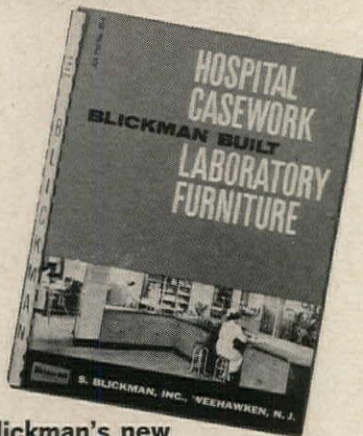
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The Record Reports

continued from page 298

New Drawing Society Plans Program

The Drawing Society, a national foundation of art collectors, artists and museum curators, was formed last fall to inspire public interest in the art of drawing and to encourage high standards of draftsmanship among American artists, designers and architects. Its first president is James Biddle, head of the American Wing at the Metropolitan Museum of Art.

John Harris, of the Royal Institute of British Architects, is a member of the National Committee which includes directors and curators of 23 major museums in 15 cities.

The Society's program was inaugurated by a series of grants to American museums for the purchase of drawings.

Over the next six years, the Society plans to present a series of exhibitions entitled, "The Uses of Drawing," to explore the function of drawing in architecture, stage design, illustration and decoration.

"This emphasis on the uses of drawing," Mr. Biddle commented, "reflects our conviction that drawing is not only an independent art form, but the foundation of all visual arts."

Meeker Granted Danish Government Fellowship

David O. Meeker Jr., a principal in the architectural firm of James Associates, Indianapolis, Ind., has been granted a fellowship by the Danish government for a year's advanced study and research at a graduate school of the University of Denmark in Copenhagen.

The fellowship was one of three such granted Americans this year by the Danish government. Mr. Meeker will do advanced research in educational techniques for religious education and prepare a report for the Danish Ministry of Education in addition to his own program of study.

A graduate of Yale University, Department of Architecture, Mr. Meeker serves on the Architects Advisory Committee of the Metropolitan Plan Commission.



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Complete specification data sheets on request Section A pages 9-10/9a-10a

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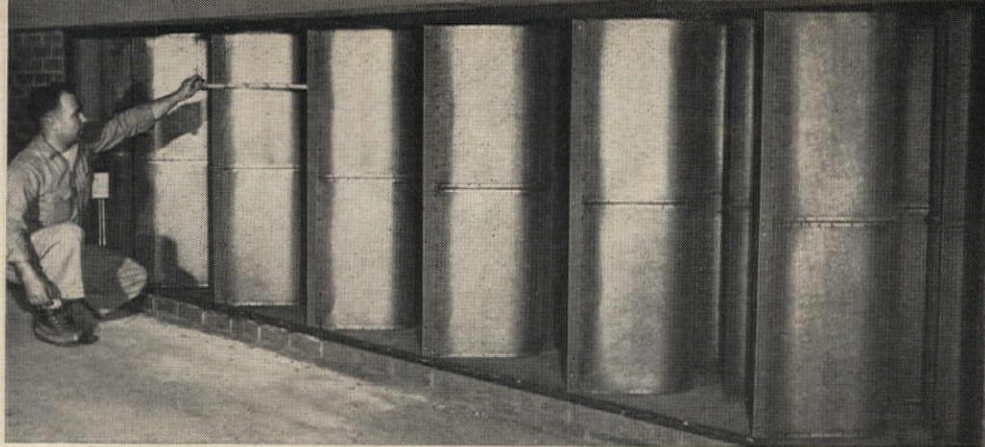
Only star performers in this arena

Because of the persistence of business and civic leaders, skillful engineering, and close cooperation of material suppliers, Pittsburgh can now boast of the world's largest dome and the only one that *moves*. The dome is as high as a 12-story building, 415 feet in diameter, and it's supported by a 1,400-ton steel tripod that holds the eight-leaved roof like a hand holding the top of a cap. Six of the eight leaves are free to roll back and let in a view of the sky. For theatrical performances, a section of 2,100 seats can be raised hydraulically to uncover a 114' by 130' stage . . . another first.

On the opposite page are three examples of how careful planning and quality building materials from Koppers helped the Public Auditorium Authority insure permanence and star performance from its world-famous Arena. They show how Koppers products can also give *you* greater design flexibility because they protect the basic construction materials. And this greater flexibility and permanence are frequently possible with lower initial costs and lower maintenance cost.

Architects: Mitchell & Ritchey, Pittsburgh, Pa. *Owner:* Public Auditorium Authority of Pittsburgh and Allegheny County. *Executive Director:* Edward Fraher. *Resident Consulting Engineer and Superintendent of Construction:* H. Rey Helvenston, Pittsburgh, Pa.





Sound traps keep the fans quiet

The auditorium's powerful ventilating system moves 130,000 cubic feet of air per minute—and to stifle the roar of the high-powered fans, the engineers installed 118 AIRCOUSTATS,[®] designed and manufactured by Koppers. The AIRCOUSTATS are located in the ductwork of air intakes and in the 24 huge metal pylons which discharge heated or cooled air into the

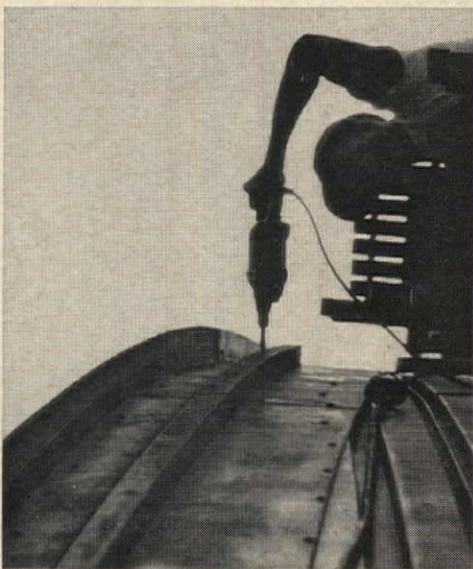
auditorium. AIRCOUSTATS' scientific sound-trap design muffles all frequencies of fan noise—but doesn't block the smooth passage of air. AIRCOUSTATS are economical. They're easy to install in new or existing ductwork and are permanent, trouble-free, sturdy, dust-free, and fireproof. For more information on completely quiet air circulation, check the coupon.

Pressure-treated wood provides light, strong, permanent anchor

Wood—one of the *oldest* construction materials, proved to be the *best* material for the vertical nailing strips that anchor the dome's stainless steel sheets. Wood is light, yet is strong enough to hold screws that attach the batten assemblies and prevent blow-off of the stainless steel sheets. Wood also provides insulation and prevents condensation within the blanket insulation. To make this wood as permanent as the roof itself, the 90,000 lineal feet of 2-by-2's were pressure-treated by Koppers. A chemical preservative was forced deep into the wood fibers where it gives permanent protection against moisture and decay.

In addition, WOLMANIZED[®] pressure-treated lumber was used in the promenade deck expansion joints. NON-COM^{*} fire-protected wood was used to attach corkboard insulation for damping the vibration of the air-handling equipment. Check the coupon for information about wood that is pressure-treated for permanence.

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Coal-Tar Waterproofing Pitch protects rooms under exposed promenade deck

An open, 50-ft.-wide walkway with a view of the Golden Triangle encircles the base of the dome. Thousands will walk on this promenade deck, which serves as a roof for exhibit and

meeting rooms below. To keep this section absolutely dry at all times, workmen applied a coat of Koppers Coal-Tar Pitch over the reinforced concrete base. Then, after a layer of rigid insulation, came five more applications of Coal-Tar Pitch with alternate layers of tar-saturated fabric and felt. Over this waterproofing, the patterned concrete walking surface was placed. The multi-ply membrane under the concrete walking surface prevents water penetration, spalling of concrete, and rusting of reinforcing steel. In fact, Coal-Tar Pitch is such a waterproof material that it is often used on roofs that are permanently flooded. Check the coupon for details on Koppers Coal-Tar Pitch for Built-Up Roofs and waterproofing.



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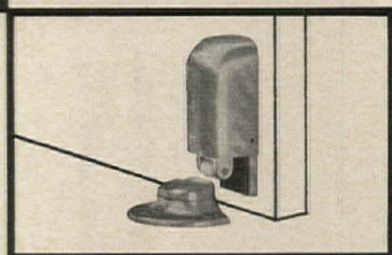
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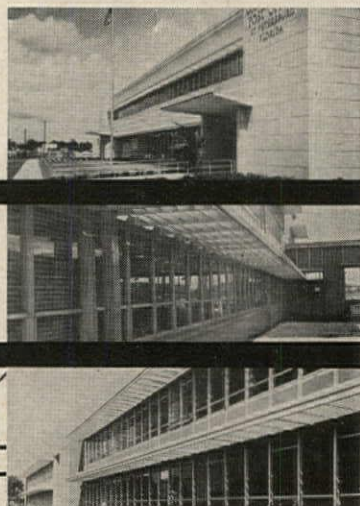
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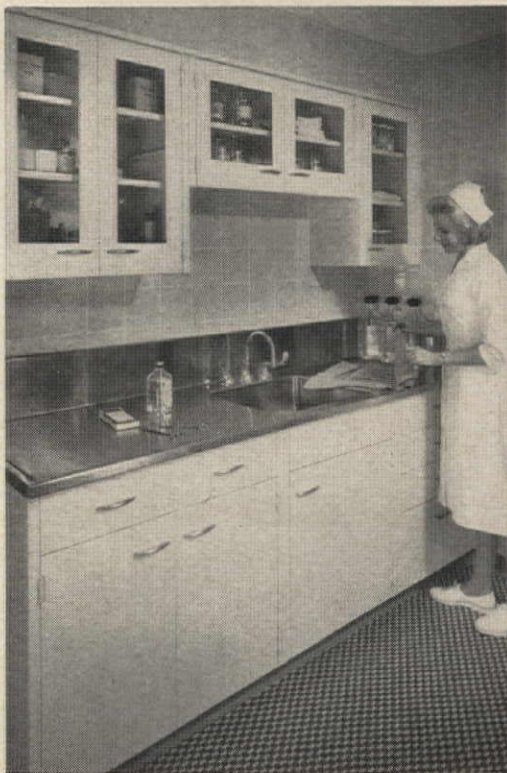
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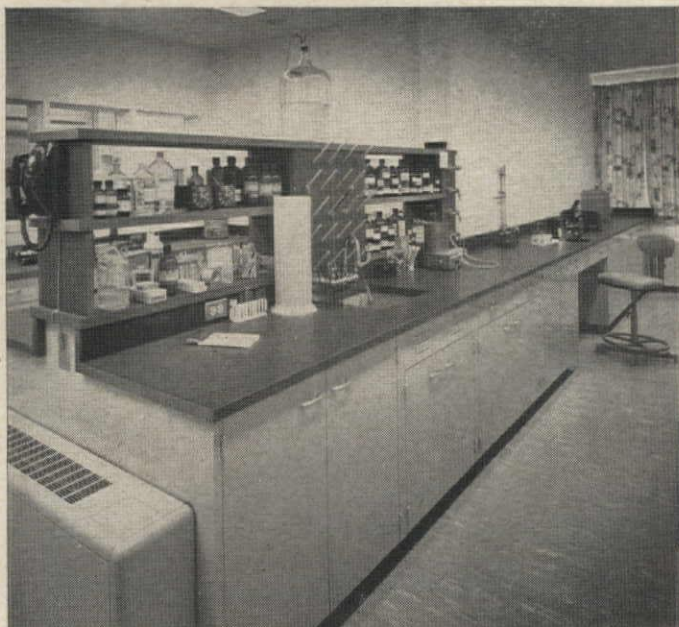


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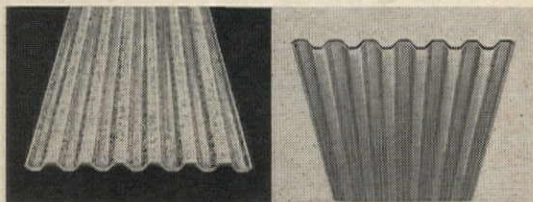


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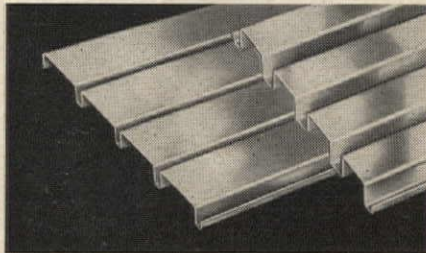
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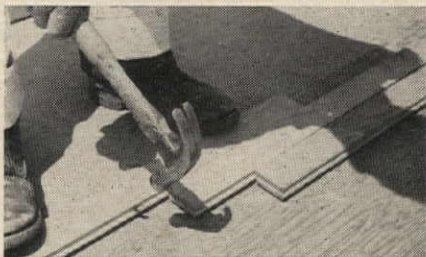
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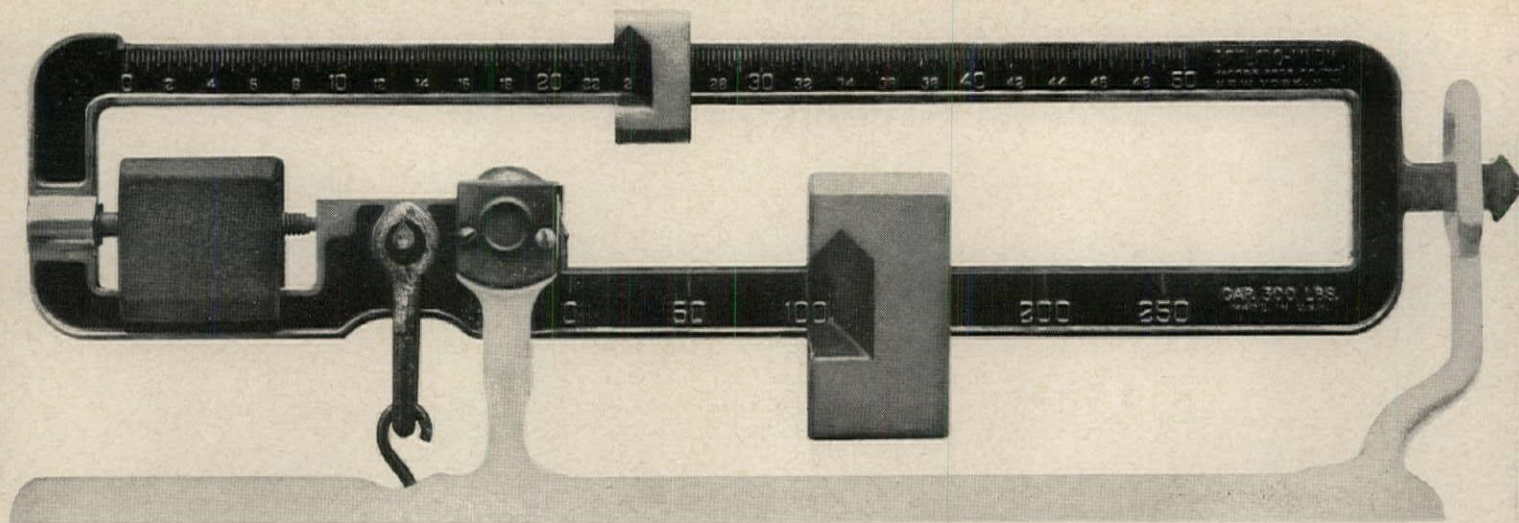
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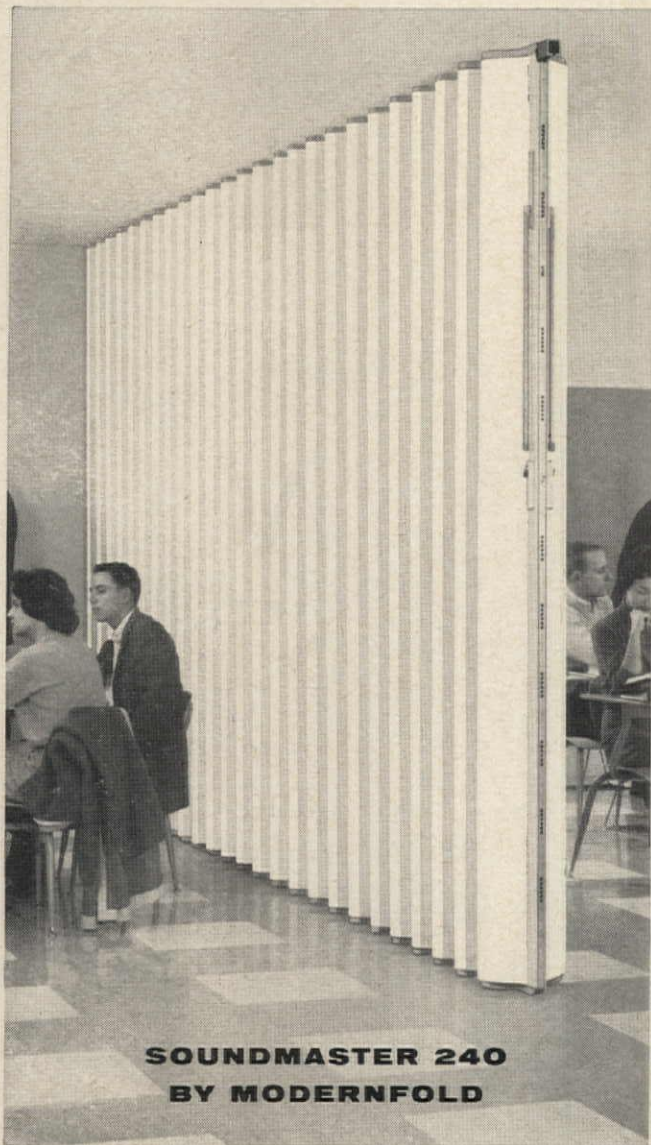


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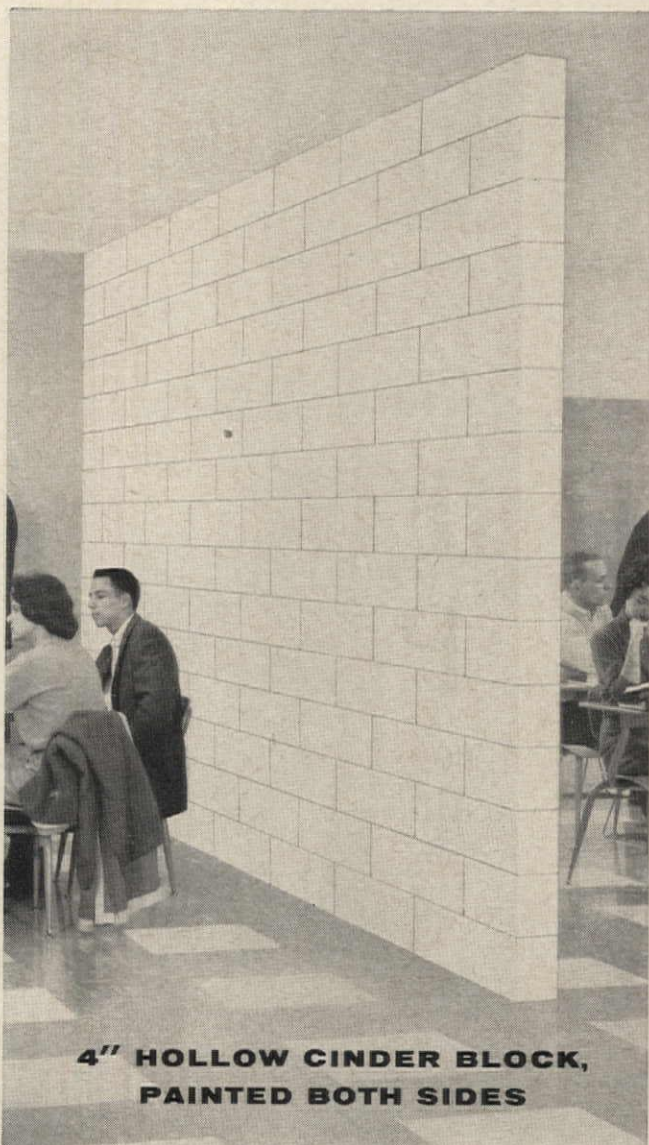
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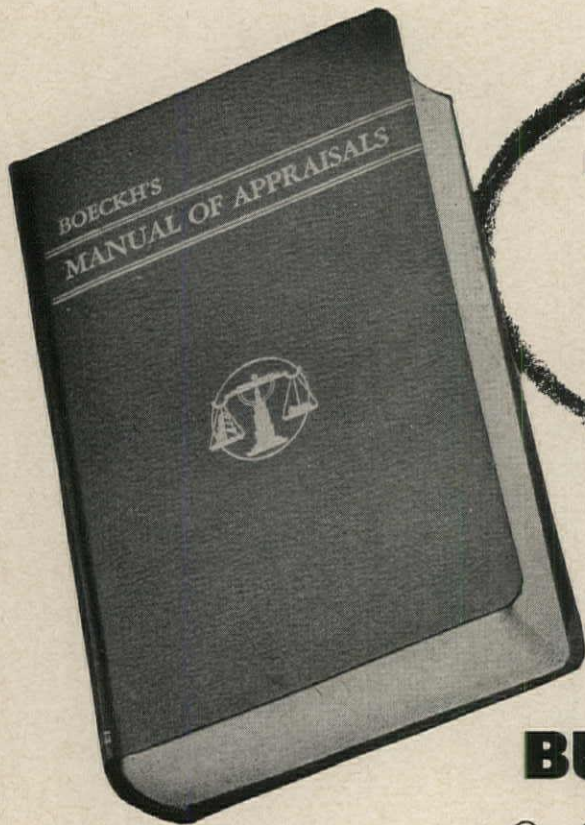
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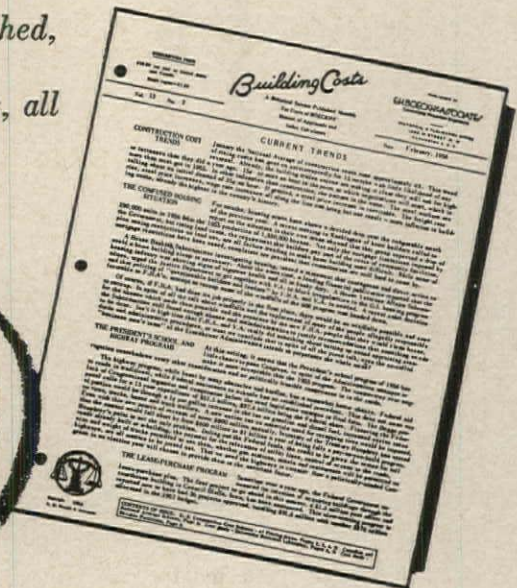
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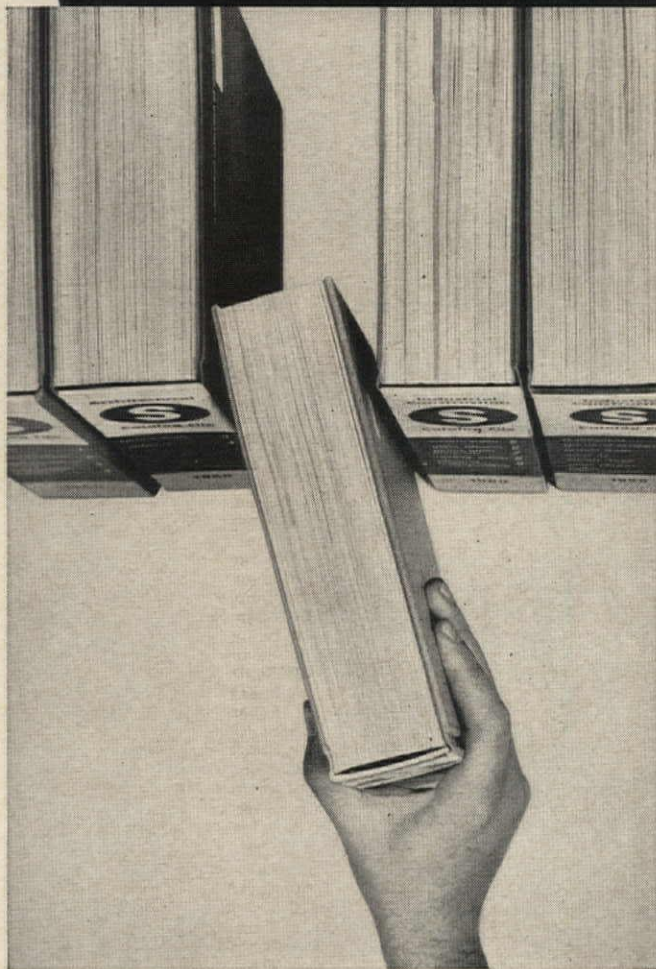
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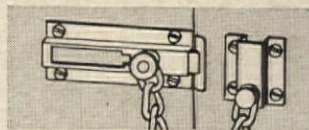
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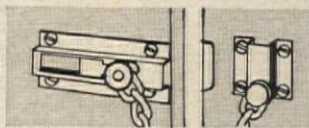
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