FORUM

Architectural Forum / the magazine of building / March 1959

NOTHING

'BEATS'

Jummitville

QUARRY TILE

Quarry Tile by Summitville is as durable as it is handsome. Only frostproof, acid-resistant quarry tile can offer such versatility, beauty and low, low maintenance costs.

> Inside and out, quarry tile can take a beating. It offers a lifetime of resistance to wear, weather and heavy traffic.

Summitville Quarry Tile is available in six beautiful, natural earth colors that harmonize with any color, any texture. For the full Summitville Quarry Tile story, including sizes, colors, textures and patterns contact your local ceramic tile contractor . . . You'll find him listed in the Yellow Pages or, write direct to . . .

BLAZED QUARTY TILE Summitville 10 VENEER JE VENEER JE VENEER JE VENEER JE VENEER JE VENEER JE VENEER

MEMBER . TILE COUNCIL OF AMERICA

Architectural Forum / the magazine of building / March 1959

ART OF ARCHITECTURE

The importance of good connections 94

Two old buildings at the University of Pennsylvania are joined by a modern classroom wing that respects its neighbors and the streetscape—a criticism.

Flexibility on a grand scale 100

A synagogue in St. Louis doubles its seating capacity at the push of a button.

Ottawa's modern city hall 106

Canada's capital city has a new municipal center that tries to establish a modern image of government character—and achieves considerable success.

Six stores of distinction 112

Outstanding examples of new design trends in display and merchandising.

The venerable Dakota 122

Built in 1879 this grandame of apartments is one of New York's best preserved buildings and one of its most prized addresses—a gallery.

An elegant cabin 136

A meticulously crafted house in the woodlands of exurban New York.

BUSINESS OF BUILDING

The conservative carpenters 102

The most hidebound building trades union is also the most aggressive.

ACTION on rental housing 120

The realistic policies suggested in a recent ACTION report would encourage private apartment building and the clearing of blighted urban areas.

Density by design 130

A proposal for a new kind of residential district for city and suburb.

TECHNOLOGY

Prestressed concrete: the big stretch 142

Developed into a big industry by the booming highway program, prestressed concrete is flexing its muscles for the benefit of architecture generally.

Building on the moon 148

Research in lunar construction has produced a spate of bubble buildings.

5 News A ten-year forecast of building activity

- 53 Projects
- 65 People
- 77 Forum
- 91 Editorials
- 150 Ideas A new department devoted to ingenuity in the building arts.
- 163 Products
- 173 Books
- 177 Excerpts
- 223 Abroad
- Cover: Design by Ray Komai based on the plan for a proposed housing project (story, page 130).
 - 80 Editorial, subscription, and advertising data.
 - 228 Advertising index.

VOLUME 110, NUMBER 3

Published monthly by TIME INC. 9 Rockefeller Plaza, New York 20, N.Y. Entered as second-class matter at New York, N.Y. and at additional mailing offices. Subscription price \$6.50 a year. © 1959 TIME INC. All rights reserved. If you are looking for a new and less costly way to specify acoustical ceilings where a two-hour rated floor-ceiling assembly is required, it will pay you to read these facts:

New acoustical ceiling given two-hour fire rating by Underwriters' Laboratories

New Armstrong Acoustical Fire-Guard is the first two-hour acoustical ceiling tile. It eliminates the need for intermediate fire-stops—saves construction time—lowers building costs.

Take a good look at the floor-ceiling assembly on the opposite page. It can mean significant savings in both construction time and money in nearly every new commercial or institutional building in the country.

Underwriters' Laboratories, Inc., (in its report #4177-1) stated that this floor-ceiling assembly, utilizing Armstrong Acoustical Fire-Guard ceiling tile, "will afford two-hour fire protection against the passage of flame or dangerous transmission of heat." It also reported that this system, when tested, protected bare steel joists for a period exceeding six hours.

Saves money

Armstrong Acoustical Fire-Guard eliminates the need for costly intermediate fire-stops. Previously, it was necessary to (1) utilize reinforced concrete construction, or (2) spray steel structural members with an insulating material, or (3) suspend a lath and plaster fire-stop to which the acoustical ceiling tile could be applied.

Saves construction time

Armstrong Acoustical Fire-Guard is installed by a completely dry method. No costly delays are necessitated by "wet" operations. No extra moisture is introduced into the building.

Available in two designs

Armstrong Acoustical Fire-Guard is now available in two attractive perforated designs: Full Random and Classic.

Offers choice of construction

Assembly shown at right is minimum acceptable construction. Use of heavier steel joists or thicker concrete or suspension of the system from 11/2'' plasterer's channels hung below structural members would logically be permissible.

For complete information about Armstrong Acoustical Fire-Guard, call your Armstrong acoustical contractor, your nearest Armstrong district office, or write to Armstrong Cork Company, 4203 Rooney Street, Lancaster, Pennsylvania.

Armstrong ACOUSTICAL CEILINGS

Details of Armstrong Fire-Guard Suspension System on opposite page. The main runners are installed on 12" centers and are attached to the bar joists (or suitable carrying channels such as 1½" plasterer's channels) with galvanized clips placed at nominal 4' intervals. Clip splines are snapped into the main runners. The acoustical unit is supported on all four corners by the flange on one side of the tile and the kerf on the other side of the tile, resting on the snap-in clip spline. Border tiles are supported by annular nails which are inserted in border splines and fastened into nailing channels.

ARMSTRONG ACOUSTICAL FIRE-GUARD CEILING SYSTEM



THE VAST MAJORITY OF THE NATION'S FINE BUILDINGS ARE SLOAN EQUIPPED



ITY TAKES BOLD FORWARD

· Located in an expertly landscaped 28-acre park ped with 300 seats. Adjoining it is a large cafeteria, bordering the cascading, power-producing Spokane River, is the new Headquarters Office and related service facilities of the largest private electric utility in the Pacific Northwest. These new structures, which replace aging buildings strewn about Spokane, are close to the center of the company's ten scattered power dams. The main building in the \$7.6-million group is a 5-story building enclosing offices by double glazing and blue glass spandrels. A glassed-in corridor connects this building and a large auditorium equip- ity and economy.

private dining rooms and long lounge areas. On the opposite side of the office building, another corridor leads to the huge Central Service Building. From these buildings, where efficiency prevails, workers enjoy long scenic views up and down the winding river. The handsome buildings in Spokane's biggest and most distinguished post-war project are ultramodern outside and inside, and are completely equipped with SLOAN Flush VALVES, famous for efficiency, durabil-



1959 construction outlook improves. FORUM's tenyear building forecast: \$630 billion.



1950 51 52 53 54 55 56 57 56 59 1959: FORUM estimate

FORUM'S REVISED 1959 FORECAST

(Expenditures in millions of dollars)

		Foreca	st	
PRIVATE BUILDING	1958	1959	±%	
Nonresidential	8,720	8,475	-2.8	
Industrial	2,443	2,100	-14.0	
Commercial	3,561	3,500	-1.7	
Office buildings,				
warehouses	1,986	1,800	-9.4	
Stores, restaurants;				
garages	1,575	1,700	7.9	
Religious	863	900	4.3	
Educational	567	600	5.8	
Hospital; institutions	610	650	6.6	
Residential (nonfarm)	17,884	19,150	7.1	
Public utilities	5,554	5,700	2.6	
			_	
Total Private*	33,947	35,150	3.5	
PUBLIC BUILDING				
Nonresidential	4.622	5,025	8.7	
Industrial	370	375	1.4	
Educational	2.877	3.000	4.3	
Hospital; institutions	401	450	12.2	
Military	1,235	1,400	13.4	
Residential	832	1,000	20.2	
Highways	5,350	6,200	15.9	
Sewer: water	1,388	1,500	8.1	

*GRAND TOTAL 48,980 52,150 6.5 * Minor components not shown, so total exceeds sum of parts.

Total Public* 15,033 17,000

13.1

Last October, FORUM's economic consultant, Miles L. Colean, forecast a new record of building spending in 1959a \$51.6-billion total that would mark the first year ever that spending for new construction exceeded \$50 billion. Now, based largely on the better-thanexpected early showing of residential building (housing starts were at a rate of 1.4 million in January), FORUM has raised its estimate of construction spending this year, and figures that such spending will be at least half a billion dollars higher than originally expected, probably winding up at \$52.1 billion, or 6.5 per cent higher than in 1958. (For FORUM's latest ten-year building forecast, see page 7.) Since cost increases this year are not expected to exceed 2 per cent, 1959 should also set a new mark for the physical volume of building-probably about \$37 billion (1947-49 dollars) as compared with \$35.7 billion in 1955, the previous record year.

New residential building, which was the brightest spot for all private building last year (1.1 million starts), has started 1959 with a booming 32 per cent gain over January 1958, and the most recent figures on federal appraisal requests, insured mortgage applications, and residential contract awards indicate a sturdy spring for home builders. Thus, FORUM has revised its forecast on spending for new dwelling units upward by \$750 million, to \$14.5 billion for this year. FORUM anticipates new starts of 1,250,000 units this year, compared to 1,201,700 last year. This, plus some small upward readjustments in commercial and industrial building, more than offsets a downward revision of \$500 million in the estimate of spending for private utilities (to \$5.7 million).

Although the outlook for industrial and commercial construction is not so bleak now as it seemed last October, both these areas of building will show a decline in activity for this year as a whole. Commercial construction will total about 1.7 per cent less than in 1958, due to an anticipated 9.4 per cent decline in office building; industrial construction, meanwhile, will decline another 14 per cent from the 1958 level, which was itself 31 per cent below 1957. But business spending for capital plant may pull out of its nose dive this year. Martin Gainsbrugh, chief economist for the National Industrial Conference Board, predicted last month that capital investment would begin to climb later this year and perhaps offset any declines that might show up as "demand for housing ebbs from the current or prospective peak rates, as the impetus from the inventory sector wears off, and as federal outlays stabilize or even drop modestly."

The only other major revision FORUM has made in its forecast for 1959 is in highway construction, where recent difficulties with the federal Highway Trust Fund and slower payments to states will probably mean a lower level of activity than was anticipated last October. Nevertheless, highway building will still be at a record level of around \$6.2 billion this year, a rise of 15.9 per cent above last year.

And despite the lower estimate for highway construction, other public building will be somewhat higher this year than originally anticipated, adding up to a new record of \$17 billion for all public construction, a rise of 13 per cent over 1958. There is a big carry-over of public housing activity from last year, which indicates a 20 per cent increase in such building this year. Hospital and other institutional construction, which rose 14 per cent last year, will probably rise another 12 per cent this year, and military construction, with a growing emphasis on missile installations, will rise about 13 per cent this year.

What action Congress takes on highways and home building will, of course, have an important effect on the total volume of construction spending, for these two areas are particularly sensitive to federal direction and assistance. (For a report on the outlook for building legislation, see page 7).

It now appears that enough money will be available to finance the anticipated level of construction. The price of money, however, may continue to move up somewhat in the months to come. Investment in apartment building should be stimulated somewhat by expected increases in the maximum ceiling on interest rates for FHA-insured continued on page 7



mortgages on apartment projects. The rate is expected to be raised from its present $4\frac{1}{2}$ per cent to a maximum rate of 5 per cent. FORUM estimates that around 190,000 multifamily rental units will be built this year, the highest number since 1950.

Lending support to FORUM's upward revision of its 1959 forecast was the 10 per cent rise in spending for new building in January, relative to January 1958. Besides the 28 per cent climb in residential construction, most types of nonresidential building scored better-than-seasonal gains. Building of stores and restaurants climbed 12 per cent, church building 7 per cent, and private educational building was up 9 per cent. However, these gains were more than offset by the continuing weakness in industrial construction (off 37 per cent from January 1958), and office building construction, 8 per cent below last January's level.

Public building continued its rise in January, gaining 15 per cent over January 1958. Top gains were in highways (up 24 per cent), military building (up 21 per cent), and public housing (up 54 per cent).

Congress pushes broad building measures

Never in recent years has the construction industry been able to look forward to such bounty as the 86th Congress seems intent on granting it this year. Last month, with the session less than seven weeks old, these building proposals were in various stages of Congressional consideration:

An omnibus housing measure providing over \$3 billion in federal grants continued on page 9

FORUM's ten-year forecast: \$630 billion of new building

As the construction industry moves strongly into its first \$50-billion year (see page 5), it can also look ahead to a decade in which spending for new building will probably total a whopping \$630 billion. By 1968, according to FORUM economist Miles L. Colean, spending for new construction will reach \$75 billion a year, a rise of 53 per cent above last year's mark. This predicted percentage increase, moreover, is much less than the 74 per cent rise in building in the past decade (see page 5). It would be about the same magnitude as the increase during the building boom of the twenties.

However, FORUM's projections for the next decade may be too modest. They are based on the conservative assumption that productivity will improve no more in the next decade than it has on the average in the years since World War II. They also assume that population will increase at the relatively moderate 1955-57 rates, and by 1968 reach only 207 million persons, compared to the present 175 million. Should population expansion pick up to an average of 10 per cent better than the 1955-57 level, it might mean that the U.S. would contain nearly 220 million persons by 1968, with coincident larger demands for housing and other building.

Some sectors of construction will advance much more rapidly than the 53 per cent increase predicted for all building. Industrial building, for example, which is now far below its peak levels of 1956-57, is expected to rise 117 per cent in the next decade, and by 1968 should be booming at a rate of \$5 billion a year in new expenditures. The building of stores,

restaurants, and garages will also show higher-than-average expansion, rising about 76 per cent by 1968 to \$2.8 billion a year. Nonresidential construction as a whole will rise considerably more (66 per cent) than private residential construction (45 per cent). Annual spending for new dwelling units should rise about 42 per cent. One big reason for the greater percentage rise in nonresidential building than residential is simply that nonresidential building did relatively poorly in 1958-the base year for the new forecast. Private nonresidential building last year dropped nearly 9 per cent from its 1957 level.

Public construction will generally show more expansion than private building in the next decade (see "The \$285-billion challenge," January 1959). Only public housing is expected to show any decline in the next decade, probably about a 4 per cent drop as military public housing and federally assisted low-rent public housing are tapered off. Highway construction will continue to boom, and by 1968 will total \$9.5 billion a year, a rise of 77 per cent above last year's level. School building should rise at least 51 per cent-and could gain even more if the federalaid programs now being discussed are passed by Congress. Hospital construction, already lagging behind needs, will rise 75 per cent, and building of administration and service facilities 51 per cent by 1968.

This long-range forecast naturally assumes that there will be no war or major depression. It also assumes that construction spending in the next decade will maintain its traditional relationship to gross national output (i.e., around 10-11 per cent of GNP). This conservative assumption sets aside the likelihood of significant change in transportation, urban patterns, and building technology itself, which are already shaping the pattern of construction. As any or all of these trends gain momentum, construction should well expand its already vital role in the national economy.

THE NEXT DECADE IN BUILDING



Marriott Motor Hotel muffles traffic roar with neoprene gaskets The problem of traffic roar from a heavily traveled six-lane highway confronted the architects of the Marriott Motor Hotel in the nation's capital.

Neoprene gaskets were specified by the architects to help solve the problem. Channels of soft resilient neoprene gaskets were used to cushion air-spaced double-paned windows. Neoprene extruded gaskets with hollow cores were fitted to doors to absorb both sound and vibration. The problem of noise was eliminated so completely that today even nearby freight trains clatter along unnoticed by occupants inside the rooms.

You can solve problems involving soundproofing by specifying neoprene gaskets for windows and doors and at the same time keep them moisture-proof and weather-tight. If you want time-tested facts about the properties of neoprene, write for "Neoprene Gaskets for Curtain Walls," Elastomer Chemicals Dept., E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Del.





(Above) For the Marriott Motor Hotel in Washington, D. C., sound-tight, weather-tight neoprene gaskets were used to help combat noise.

(Left) The motor hotel's double-paned windows were cushioned with neoprene.



Better Things for Better Living . . . through Chemistry

RUBBER

SYNTHETIC

NEOPRENE HYPALON® VITON* ADIPRENE®

*Trademark for Du Pont Synthetic Rubber

(Extreme Left) Neoprene gaskets, fitting into rabbeting in 2¾" thick doors, proved effective in absorbing outside noise. and loans for various housing programs was passed by the Senate, and a slightly more costly bill moved to the floor of the House.

▶ A \$465-million airport construction bill passed the Senate.

▶ Two school building bills were introduced. The Administration bill would increase school building by about \$3 billion in the next five years at a cost to the federal government of about \$300 million in the same period. In another bill, Democrats are asking \$1.1 billion in federal grants in fiscal 1960, growing gradually to \$4.7 billion a year by fiscal 1963, with funds to be used either for teachers' salaries or construction.

▶ A public works program was introduced by Representative Albert Rains (D, Alabama). It would guarantee a steady \$1 billion a year for local projects (e.g., sewers, roads, parks, public buildings) with a \$1billion-a-year stand-by fund for use in time of recession.

Although it is still uncertain how far President Eisenhower will go in opposing these various spending programs, he has so far been unequivocal in his opposition to most of them. The Administration's own "hold-the-line"



JOHNSON

housing and airport aid proposals were badly beaten in the Senate (by votes that indicate that a veto of the much bigger Democratic proposal probably could be overridden). Meanwhile Speaker Sam Rayburn (D, Texas) and Senate Majority Leader Lyndon Johnson (D, Texas) shepherded the building measures through the various stages of law-making without exhibiting any serious breaches in Democratic leadership. And, at the same time, they worked to soften features of these bills most distasteful to the President. Johnson, after several White House conferences, successfully made strategic cuts in the housing bill (particularly \$150 million from the \$300 million proposal for direct housing loans to veterans which would affect this year's budget) without upsetting sections considered vital by the "liberals."

Rayburn's role has been equally effective. He has reportedly gotten promises from Virginia's cantankerous Representative Howard W. "Judge" Smith that building legislation will not be held up in the Rules Committee. (Last session, Smith's solid roadblock in the Rules Committee prevented any omnibus housing measure from being passed.) Rayburn first maneuvered a bill for veterans' housing loans through the Rules Committee despite Smith's outspoken dislike of the measure. The House then passed the veterans' loan program by a solid 227 to 123, indicating how the vote might go when the more important omnibus housing bill reaches the floor.

If Johnson and Rayburn can continue to tone down the more controversial elements of the many building proposals, particularly with an eye to staying close to this year's budget, the President may let such measures pass, though reluctantly. Here is the line-up on major pending legislation affecting construction.

Housing: The Senate passed, 60 to 28, a housing bill not too different in its final version from that introduced by Senator John Sparkman (D, Alabama). It calls for \$350 million a year in urban renewal grants for the next six years, with a provision that as much as \$500 million can be earmarked in any year that applications for funds warrant it. (Thus, if the flow of applications continues at the present rate, the whole \$2.1 billion in the bill could be used up in four years.) The public housing program would be extended with 35,000 new units for fiscal 1960 and another 16,000 spread over the next three fiscal years. (This does not take into account the already-existing backlog of around 80,000 units still not built from past years' authorizations.) Also, local housing authorities would be given more autonomy to handle their own operations, with less direction from the federal Public Housing Administration. FHA terms on mortgages would stay as they are (\$20,000 maximum, for 30 years), and the agency would get \$10 billion in new insuring authority for the rest of fiscal 1959 and fiscal 1960. Lyndon Johnson succeeded in cutting \$100 million from the section for college dormitory and laboratory construction loans, leaving those programs with a total of \$425 million for the next four years.

As House debate on housing continued, it seemed late last month that the House measure would approximate the Senate's, and that joint conferences, under the guidance of the Johnson-Rayburn team, would quickly produce a housing measure for White House consideration.

School aid: In an effort to get something "constructive" before Congress, rather than simply argue against the Democrats' school construction proposal, the Administration introduced last month a plan to aid school construction in areas with a "proved need" for elementary and secondary schools. The federal government would, under the plan, share, on a matching basis, whatever interest and amortization costs of the bonds the municipality could not pay itself. This program would not only mean less federal aid to schools than the Democrats want, but it is less than the President himself asked in 1957, when he asked for a \$2-billion school construction aid program for four years. The Administration also introduced a college aid proposal, involving debt retirement aid of up to 25 per cent of the principal on long-term bonds of needy colleges.

The "liberal" Democrats, with backing so far from both Rayburn and Johnson, want a much broader program, which would provide \$1.1 billion in federal grants to be used for teachers' salaries or construction in fiscal 1960. This would certainly unbalance the budget this year, and it calls for a steadily expanding program until fiscal 1963 and later years, for which \$4.7 billion annually would be authorized.

Airports: The Administration, which wants to end federal aid to airport construction gradually over the next few years, is fighting hard against a bill passed by the Senate last month calling for \$100 million a year for four years in matching grants to states, plus an extra \$65 continued on page 11



ED STONE'S PALO ALTO LIBRARY

While he was in Palo Alto, California designing the Stanford Medical Center, Edward D. Stone was also asked to design a \$360,000 city library. The T-shaped building is cloaked in grillwork, and has no interior columns. This, plus glass walls and hanging gardens of flowers splashed near its luminous ceiling, gives the building an airy, free-flowing interior.

The Hand with the

uses

A.W.Faber-CASTELL

with Black Gold Graphite

Who are the men with the "golden touch"? They are the architects turning out attractive renderings and perspectives; engineers drawing plans of extensive projects; designers creating bold new shapes and forms, and draftsmen making meticulous drawings and tracings.

The one thing that distinguishes so many of them is their use of our A.W.FABER-CASTELL, the drawing pencil with the Black Gold Graphite that tests out at more than 99% pure carbon. CASTELL is truly worthy of their talents, because it is the perfect partner in their creation, helping to translate their grey matter into black matter.

These men will tell you that CASTELL is the finest pencil on earth. It has no smudgy, smeary foreign substances to give the false illusion of black. It's all pencil from tip to tip, a Pro's pencil.

Let CASTELL bless your fingers with the "golden touch" and give flight to your creative or interpretive imagination. It costs no more to use the world's finest drawing tools-imported CASTELL wood pencils in 20 uniform degrees, 8B to 10H, imported CASTELL leads and LOCKTITE TEL-A-GRADE holders with the bulldog grip. Order from your dealer today.

Choose from: # 9000 CASTELL Pencil. # 9007 CASTELL with Eraser. AW. FABER ERSTELL DRAWING REFILL LEAD 9030 # 9800SG LOCKTITE TEL-A-GRADE Holder with new functional spiral grip and degree indicating device. # 9030 CASTELL Refill Lead matching # 9000 pencil in quality and grading, packed in reusable plastic tube with gold cap. Other styles and colors of pencils, holders and refill leads.

Castell Leads and Pencils draw on all surfaces, including Mylarbased polyester drafting films. Give perfect lines, easy to erase -excellent reproduction.

BACKED BY NEARLY 200 YEARS UNINTERRUPTED MANUFACTURING EXPERIENCE - SINCE 1761

Copyright 1958



A.W.FABER and CASTELL and Co. Nuc 24

P-2

CHSTELL USA LOCKTITE TELAGRADE 9800 5G

A.W.FABER-CASTELL Pencil Co., Inc. Newark 3, N. J.



million set aside for spending at the President's discretion. (About \$63 million is scheduled for fiscal 1959.) The President himself led the opposition to the bill when he stated: "The Administration directs itself to one factor only -- improving the safety of flying . . . it is not interested in building nice, lovely administration buildings. . . . Lyndon Johnson cut the Senate program by \$100 million, and there is a provision denying federal funds for cocktail lounges, game rooms, and other "luxury facilities." Nevertheless, the airport bill is most likely of all to draw a presidential veto.

AIA convention site stirs bias controversy

In the past few weeks, the hottest topic of conversation at chapter meetings and other local gatherings of members of the American Institute of Architects has been the upcoming convention in New Orleans next summer. The reason: Negro members of AIA will be excluded, by city and state law, from all save "official" functions of the institute, and will not be able to stay at the convention hotel.

Relatively few of AIA's members are directly affected (there are only around two dozen Negro AIA members in the whole U.S.). But in AIA as a professional group there was a feeling of responsibility over a more fundamental question: why should any member be denied access to any convention affair, be it official or not? And in several chapters moves were started to ensure that the institute will, at least, never again meet in a city where any of its members might be embarrassed by local law or custom.

Early this year, Berkeley, California's East Bay Chapter passed a resolution requesting AIA "to select or hold to the selection of cities as seats of conventions only when responsible assurances can be given that all members of the American Institute of Architects will be welcome, without possibility of embarrassment because of race, creed, or place of national origin." The powerful New York Chapter's executive committee has recommended that such a resolution be passed by the chapter at its preconvention meeting in May, and chapters in Buffalo and other New York cities are reportedly in favor of it. If a resolution is approved, says New York Chapter president L. Bancel LaFarge, it will be introduced at New Orleans.

The directors of AIA were obviously embarrassed by the growing outcry against the New Orleans arrangements. President John Noble Richards, faced with carrying through as smoothly as possible arrangements that had been made long ago by the AIA Board, wrote in behalf of the Board to mollify all factions. After admitting that New Orleans has a "statute which would tend to discourage organized social activity," Richards announced the solution: simply have no organized social activity. "The 1959 convention," Richards said, "will consist of professional meetings to which all corporate members of AIA will have free access and equal opportunity of participation. . . . Ours is a professional society and it is our task to divorce professional matters-which are the sole legal purpose of the national convention-from social matters which have no place in professional decisions."

The effect of Richards' letter was quite the opposite of what he had hoped. Several powerful chapters either have endorsed resolutions similar to that of the East Bay Chapter, or are already discussing such action. And, in both New York and California, there is already growing talk of possible widespread staying away from the convention to register protest.

One AIA member who is keenly affected is Los Angeles architect Paul Williams, the first Negro ever to become a Fellow of the Institute. Williams, who is inclined not to go to the convention mainly because of its location, says simply: "I don't think the Institute should have to change its convention program just to go along with an outdated law." And he adds: "We shouldn't be belligerent about this thing, or bring up anything beyond the professional side of architecture. But if we have to change the city, I think we should. The Army and Navy have refused to play football in some places-the Institute ought to be big enough to do the same."

Off the record, AIA officials say there is no time to change to another city, that New Orleans has been committed for three years and cannot be changed. And last month, in an attempt to curb any further public airing of the controversy, AIA asked its chapters to send any further releases concerning the convention to Washington for clearance by either the executive director or public relations counsel. This promptly brought accusations that "gag methods" were being involved. Actually, LaFarge's own releases were cleared unaltered. Some AIA members hope that future conventions can be scheduled for cities with no segregation problem, and that this can be done without an array of resolutions.

New York hearings probe bias in housing

Last month, the federal Civil Rights Commission held a two-day hearing in New York City covering bias in federally aided, and other, private housing and its effects both social and economic. *continued on page 13*



NEW DESIGN FOR GRAND CENTRAL CITY

A redesigned Grand Central City building was announced last month by New York Developer Erwin S. Wolfson. The \$100-million metaland-glass sheathed building, to rise directly behind the present Grand Central Terminal, was designed by Architects Walter Gropius, Pietro Belluschi, and Richard Roth, of Emery Roth & Sons. Roth did the first design for the building (FORUM, June 1958). The building will rise 55 stories, with 2.4-million square feet of space. The original design was for a 50-story, 3-million-square-foot building. This makes it the largest commercial office structure in the world. (The RCA building is presently the largest.) The elongated octagonal-shaped tower is on an east-west axis, facing Park Avenue. Wolfson has already signed leases for 25 per cent of the building, which is to be completed by 1962.



For curtain walls, brick is best. Only brick offers structural beauty at lower initial cost with greater flexibility for imaginative building design.

Give the added beauty of permanent STASO color. Specify STASO Glazed Brick for all of your curtain wall construction.

Colors	No.	Colors	No.
Mistletoe Green	101	Turquoise	602
Slate Green	102	Horizon Blue	603
Carnation Pink	201	Platinum White	701
Raven Black	301	Flecked White	702
Canary Yellow	401	Granitone	705
Mocha Brown	501	Flecked Gray	712
Dresden Blue	601	Charcoal Gray	721

PRODUC

in Color Ceramics

Driftwood Gray... 722

CENTRAL COMMERCIAL COMPANY (Est. 1894) 332 South Michigan Avenue, Chicago 4, Illinois

Permanent Beauty

Significantly, it was the first serious tilt at the problem of bias in housingparticularly federally aided housingin nearly a decade, and comes on the heels of recent statements by top federal housing officials denying any federal responsibility for ensuring equal opportunities for all races and creeds. Many of the 36 witnesses who testified backed a special Presidential commission to ensure that federal housing agencies deny any form of federal housing assistance for housing where discrimination is practiced or permitted. Earl B. Schwulst, chairman and president of the Bowery Savings Bank, and chairman of the private Commission on Race and Housing (FORUM, December 1958), said flatly: "Racial segregation is probably nowhere more complete than in the federally assisted new private housing developments. The federal agencies, public housing excepted, have made no significant attempt to ensure the availability of federal housing benefits on equal terms to all Americans."

Charles Abrams, until last mon'h head of New York State's Commission against Discrimination, suggested to the four commissioners holding the hearings that "a wise administrative policy" could enforce nondiscrimination in federally aided housing, without going to Congress for new legislation. Many witnesses decried the present federal policy of neutrality toward segregation in housing practices. Schwulst pointed out: "Formal neutrality has the practical effect of supporting existing practices."

New zoning plan proposed for New York City

New York City's Planning Commission last month proposed a complete revision of the city's scrambled, outdated (1916) zoning ordinance. Prepared by the architectural firm of Voorhees, Walker, Smith & Smith, the \$150,000 study advocated, among other things, "a high degree of design freedom." For instance, the plan sets floor-area ratios (total floor area of building related to the size of building lot), which would allow builders to make economical use of their space without resorting to the strange cubism of multiple setbacks that present zoning has created. One thing the plan provides is that towers can cover 40 per cent of a building lot Among the mass of other proposals, which were developed out of zoning laws in many other large cities as well as some of the most advanced notions of architects and planners, is one that requires open space in large-scale residential buildings, similar to the F.A.R. for commercial structures. This requirement would mean that apartment developers will have to keep specified land areas open, relative to the bulk of their buildings.

Besides setting down detailed building requirements, the report establishes some over-all criteria for future development. Most important, the whole plan is designed for an eventual maximum population of 11 million persons (vs. 7.8 million now) which is well below the 55 million that could live (or the 250 million persons that could



MANHATTAN'S HOTEL ZECKENDORF

William Zeckendorf, who already has a considerable reputation as a real estate speculator, last month announced what may well be his biggest gamble ever. He plans to build a 2,000-room, \$66-million hotel in the block next to Radio City Music Hall, and across the Avenue of the Americas from the Equitable Life Assurance Society building and the Time-Life building, both now under construction. It will be the first new notel built in Manhattan since the Waldorf-Astoria in 1931, and is scheduled to be completed by 1961. Also included in the 48-story building will be six floors (240,000 square feet) of office space, which will probably be occupied largely by a number of men's apparel shops and firms. Prudential Insurance Company will own the land, and has made a mortgage for the hote!. Architects are Harrison & Abramovitz who also designed the Time-Life building.

work) in New York City under present law. City Planning Commission head James Felt hopes to present the zoning overhaul to the Board of Estimate sometime next fall, and meanwhile will continue to study the proposals. Felt says that even after the new ordinance is passed, it will be "five or ten years" before any physical change would be noted in the city, but adds that "there will be some good effects almost immediately—such as stopping excessive conversion of apartments into one-room units."

Briefs

Architects won a first round in their battle to get tax relief on savings put aside for retirement plans. The House Ways & Means Committee last month approved a measure which allows selfemployed persons to defer federal taxes on 10 per cent of the income placed in a retirement fund (up to \$2,500 a year). After retirement, taxes would be paid, presumably at much lower rates. The Treasury opposes the measure, says it will cost \$365 million a year in lost tax revenues.

Fifty per cent more architects will graduate from New York, New Jersey, and Connecticut schools of architecture in 1968 than graduated last year, according to the New York Chapter of the AIA. There were 230 degrees awarded last year (14 per cent of the nation's total) and the same schools plan to graduate at least 345 architects a decade hence. (This is, coincidentally, about the same percentage increase expected for total new building by 1968 —see page 7).

ACTION announced last month a significant change in its approach to urban problems. President James W. Rouse said that ACTION (American Council to Improve Our Neighborhoods) will start assigning staff members to work on specific urban renewal projects in selected cities. ACTION's present program of education on the broad problems of urban redevelopment will be continued while the new program is tried on a five-year basis.

Webb & Knapp's first loss since 1952 was revealed—though not defined— in the annual report of Alleghany Corporation, which holds about \$20 million in promissory notes of William Zeckendorf's real estate company plus warrants to buy W & K common. END

TOUGHEST of all vinyl wall coverings



Loveliest of All! Decorator-Designed!

Beauty with strength! No other vinyl wall coverings deliver as much tough-up-front protection as economically as Fabron and Permon. Each <u>dominates its field in abrasion resistance and in vinyl thickness</u> for specific wall-abuse situations! Costs no more — saves you much more! FABRON...TOUGHEST for <u>ordinary</u>-abuse areas. Permanently plastifused in 3 layers*: 1) close-woven fabric base for easy hanging, 2) pure vinyl Bakelite Krene film printed with light-fast colors, 3) crystal clear top vinyl film for permanent color protection. PERMON...TOUGHEST for <u>heavy</u>-abuse areas. Biggest payload of vinyl protection in the industry! Thick vinyl film, colored through and through, plastifused to heavy fabric for super damage resistance. Complete selection includes printed textures that produce embossed, 3-dimensional effects — without deep ridges to retain dirt! Slashes costs to 75%.



*A Toscony Process

FABRON and PERMON provide the highest abrasion resistance known. Write for comparative laboratory test reports.

FREDERIC BLANK & COMPANY, INC. . 295 Fifth Ave., New York, N.Y. . Established 1913



Concrete Masonry Needs Concrete Protection

Tests for a year determine ideal masonry waterproofing for the new University of San Diego

To choose the correct material to protect the concrete structure of this architectural masterpiece, a testing panel was erected upon which various types of waterproofing materials were applied. The materials were exposed for a year to weather conditions to determine durability and effectiveness.



Just off the Press

Immaculate Heart Seminary, University of San Diego

- Architect Edgar V. Ullrich
- Contractor L. J. Ninteman Construction Co. Inc.

THOROSEAL, a cementitious coating, was selected for its waterproofing, texture and color control qualities. THOROSEAL was applied by gun and trowel over metal lath and masonry surfaces.

The finish coat of THOROSEAL was tinted to match the campus color scheme.



Meetan urgent request by the Women's Conference...

with In-Sink-Eratora garbage disposer for any home you design

Because delegates to the 1958 Women's Conference on Housing chose the garbage disposer as the appliance most wanted of a long list of preferred home features . . . you may want to specify disposers in the homes you design. These facts may help you make your choice:

(1) In-Sink-Erator, maker of the first disposer, is the recognized specialist, offering a unit to meet the desires of any family . . . and the requirements of any home.

(2) In-Sink-Erator's known quality and exclusive features assure operating efficiency and long, trouble-free service.

For complete information, see our catalog in Sweet's architectural file; see your plumber; or write, wire or phone In-Sink-Erator Mfg. Co., Dept. AF-93, Racine, Wisconsin.











Model 17, lock-cover



Modern Building Uses Radiant Ceilings...

International Minerals and Chemical Corporation selects Burgess-Manning Radiant Acoustical Ceiling for new Administrative and Research Center

The group of buildings recently occupied by International Minerals and Chemical Corp. in Skokie, Illinois represents 15 years of careful planning. It consists of six connected buildings, of modern design and construction, located on a broad plaza adjoining a forest preserve and is one of the show places of this Northwest Chicago suburban industrial area.

Designed by Perkins and Will of Chicago, for maximum employee comfort as well as operating efficiency, the buildings are comfort conditioned with Burgess-Manning Radiant Acoustical Ceilings. Utilizing radiant energy from the ceiling for heating purposes, all convection type radiators are eliminated from the curtain perimeter walls.

This radiant energy heating provides uniform room temperatures from floor to ceiling. Virtually instant response to changing outdoor conditions is another of the advantageous features of Burgess-Manning Radiant Acoustical Ceiling as used at this installation.

In the summer, cool water is circulated through the ceiling coils, causing the cooled aluminum ceiling panels to absorb 40% to 50% of the sensible heat and helping maintain comfortable room conditions. Water temperatures, during the cooling cycle, are kept above the dew point to avoid condensation.

With the elimination of radiators, base board convectors, etc., maximum usable floor space is obtained, and, since the entire radiant ceiling, including suspension grid, coil and acoustic insulation, is only a little over 3 inches in depth, a substantial saving in building height can be effected.

It is quite appropriate that this care-

Write for descriptive Burgess-Manning Catalog No. 138-2F



New administrative and research center of the International Minerals and Chemical Corporation at Skokie, Illinois.

fully planned, modern and efficient building should use the most modern and efficient method for institutional and commercial structures—the Burgess-Manning Radiant Acoustical Ceiling.

Basically Simple Construction of Burgess-Manning Radiant Acoustical Ceiling

This isometric drawing illustrates the compact assembly of the four primary parts of the ceiling and the relatively simple, easily erected construction.

A standard $1\frac{1}{2}$ " channel suspension grid(1), supports the water circulating coil (2), made from prefabricated headers to which $\frac{1}{2}$ " laterals are welded. The perforated aluminum panels(3), are fastened directly to the coil. These panels are finished in easily maintained baked enamel. A sound absorbing blanket is laid over the channel grid. The whole assembly is only a space-conserving, $3\frac{1}{8}$ " in depth.

ating

Coolin



A typical view showing the Burgess-Manning Radiant Acoustical Ceiling installed in a general office area.



BURGESS-MANNING COMPANY



Architectural Products Division 5970 Northwest Highway, Chicago 31, III. oodard

The swing to Wrought Iron

Yes-there's a very definite swing. And it's easy to see why. Wrought iron-Woodard wrought ironhas style. It is economical. And it requires the minimum of maintenance. the installations we have made in the past year or so:

Here are some of

HOTELS

Estate Good Hope Hotel Croix, Virgin Island Empress Hotel Atlantic City, N. J. North Park Hotel Chicago, Ill. Statler Hilton Hotel New York, N.Y. Briggs Hotel Detroit, Mich. Benjamin Franklin Hotel Philadelphia, Pa. La Concha Hotel San Juan, Puerto Rico Sheraton Park Hotel Washington, D. C. Warner Hotel Virginia Beach, Va. Beverly Hills Hotel Beverly Hills, Cal. Hotel Sahara Las Vegas, Nev. Sutherland Hotel Chicago, Ill. **Biloxi McArthur Hotel** Biloxi, Miss. Villa Capri Motor Motel Austin, Texas Sailfish Motel St. Simons Island, Ga. Washington Motel Washington, D. C.

HOSPITALS

Wilmington General Hospital Wilmington, Del. Whittaker Memorial Hospital Newport News, Va. Veterans Administration Hospital Topeka, Kansas St. Vincent's Hospital Erie, Pa. North Kansas City Hospital Kansas City, Mo. Misericordia Hospital Bronx, N.Y. Mercy Hospital Scranton, Pa. **Coronet Nursing Home** Brooklyn, N. Y. Methodist Hospital of Brooklyn Brooklyn, N. Y. **Passavant Nurses Home** Chicago, Ill. Alliance City Hospital Alliance, Ohio Mansfield General Hospital Mansfield, Ohio SCHOOLS & COLLEGES

University of Cincinnati Cincinatti, Ohio De Pauw University Greencastle, Ind.

Syracuse University Syracuse, N.Y. Aeta Tau Alpha Fraternity Iowa City, Iowa University of Chicago Chicago, Ill. American University Washington, D. C. Mennonite Biblical Seminary Elkhart, Ind. Lake Erie College Mentor, Ohio Kentucky Military Institute Lyndon, Ky. Western Illinois University Macomb, Ill. Eastern Illinois State College Charlestown, Ill. University of Akron Akron, Ohio Ferris Institute Big Rapids, Mich. Delta Gamma House Berkeley, Cal.

Radcliffe College Cambridge, Mass.

Sacred Heart Convent Indianapolis, Ind. **Marquette University** Milwaukee, Wisc. University of Wisconsin Madison, Wisc.

CLUBS

Mapledale Country Club Dover, Del. **Beverly Country Club** Chicago, Ill. Arlington Park Jockey Club Arlington Heights, Ill.

Hampshire Country Club Mamaroneck, N. Y.

Black River Country Club Port Huron, Mich.

South Shore Country Club Chicago, Ill.

Mountain Ridge Country Club West Caldwell, N. J.

Blairmont Country Club Altoona, Pa.

Fresh Meadow Country Club Great Neck, N.Y. Hinsdale Golf Club

Hinsdale, Ill.

Diplomat Country Club Hollywood-by-the-Sea, Fla.

EMBASSIES & CONSULATES

Khartoum, Sudan Panama City, Panama Dhahran, Saudi Arabia Dakka, Pakistan Dakar, French West Africa Asmara, Eritrea, Ethiopia

Write us for information. Complete catalogue sent upon request.

LEE L. WOODARD SONS OWOSSO, MICHIGAN NEW YORK CHICAGO BOSTON LOS ANGELES SAN FRANCISCO DALLAS

no problem with

THURSDAY



OVERHEAD concealed DOOR CLOSERS

THE REAL PROPERTY IN



fits in 3" square with room to spare (inside dimension of head jamb)

head

overall only 2⁷/₈" x 2⁷/₈" x 17" long

The most compact of all concealed overhead door closers. Ideal for installations where modern shallow head jambs are specified.

ALL the controls are built-in...

1. two closing speed adjustments

The closing speed from open to approximately 15° is controlled by one adjustment and the latch speed from 15° to closed position by another.

2. hydraulic shock absorber (back check)

At approximately 80° a hydraulic resistance starts to slow down or check the opening action of the door. Hydraulic back check optional.

3. spring cushion door stop

Door is "cushion stopped" at choice of any one of four factory-set positions 95°, 110°, 125°, or 140°. Stop removed for wider openings to 160°.

4. built-in door holder

Where specified—built-in to hold door at choice of 85°, 90°, 100°, or 110°.

Three sizes for center hung and butt hung installations.

9100 west belmont avenue • franklin park, ill. full of



DUMB WAITERS BOOK LIFTS MONEY LIFTS RECORD CARRIERS



Since 1888 designers and builders of electrical and hand operated dumb waiters for hotels, restaurants, clubs, banks, libraries, warehouses, factories, institutions.

COMPLETE DATA IN SWEET'S ARCHITECTURAL FILE 330

D. A. MATOT, Inc. 1535 W. ALTGELD STREET · CHICAGO 14, ILLINOIS

elevated aluminum flooring

ELAFLOR* OPENS UP NEW DESIGN



Provides a strong, elevated, fire resistant floor with free access to cables, air conditioning ducts, air and vacuum lines, telephone lines, etc. Elaflor ...designed for computer rooms ... business machine areas, etc. gives you these advantages plus the durability of extruded aluminum and the beauty of the floor covering of your choice.

POSSIBILITIES

Write for free Elaflor literature and installation examples *Pat. App. For

E.

Friendship International Airport, Box 506 Glen Burnie 2, Md.

to Architects

See Sweet's Architectural File for full information on our unique, patented-construction carpets available in carefully selected distribution.

Send the prepaid postcard in Sweet's for our Decorator Folder color-swatched in all qualities.

DURALOOM CARPET MILLS, INC.

Lehighton, Pennsylvania

OFFICE...CLOTHING STORE...BUILDER'S SHOWROOM ...

In this elegantly appointed office, the floor is Armstrong Custom Vinyl Cork Tile. So, too, is the wall surfacing in the richly patterned Driftwood Design. Office in Seagram's Building, NYC. Office architects: J. Gordon Carr & Associates.





Nowadays, architects can choose from a wide variety of resilient floors. Armstrong is in the unique position of making all types. So, an Armstrong Architectural-Builder Consultant has no bias toward any one type of flooring and can make impartial recommendations for any interior. He can also get you special assistance from the Armstrong Research Center and Bureau of Interior Decoration. Call him at your Armstrong District Office or write to Armstrong Cork Company, 1503 Rooney St., Lancaster, Pa.

the flooring spec: (Armstrong CUSTOM VINYL CORK TILE



EASY CARE By using Custom Vinyl Cork Tile in this smart men's store (one of the firm's ten), the owners are assured of a spotlessly good-looking floor every minute. The durable vinyl coating makes maintenance easy and economical, eliminates the special care cork tile often needs. And in bad weather during business hours, tracked-in dirt and water can be quickly mopped up. Broad-street's, Fifth Avenue, New York City.



LONG WEAR In this handsome permanent showroom, a home prefabricator displays many different building components side-by-side. Armstrong Custom Vinyl Cork Tile—with its natural luxury—provides an appealing and versatile background. It's highly resistant to indentation from stationary and moving loads and will give many years of excellent service. Pease Display Center, Pease Woodwork Company, Hamilton, Ohio.

design features

As its name implies, Armstrong Custom Vinyl Cork Tile combines the natural beauty of cork and the functional advantages of vinyl. An exclusive Armstrong process fuses a thick layer of clear vinyl to the top of a cork mat. This permits the use of much larger pieces of cork than are used in other types of cork tile. The distinctive appearance of this new cork tile creates a feeling of unusual luxury in any interior, commercial or residential. Two stylings are available: the gentle "Natural Design," and the emphatic "Driftwood Design." The latter won an AID First Design Award for 1957.

technical data:

composition: transparent vinyl resins fused with cork surface resistance: excellent for grease and alkalis ease of maintenance: superior

underfoot comfort and quiet: very good

static load limits: 125 lbs. per sq. in.

recommended uses: over suspended subfloors and on grade when Armstrong specs are followed

gauge: 1/8"

size: 9" x 9"

design effects: Natural Design 1005 (see floors in accompanying illustrations) and Random Driftwood Design 1006 (see wall in office picture on facing page)

	ARMSTRONG FLOO		
area to see a superior	oncrete, minimum area 1		
20¢ - 35¢	35¢ - 45¢	45¢ - 60¢	
Linoleum Tile	Linoleum Tile	Vinyl Corlon .070"	
Asphalt Tile 1/8" (A,B,C,D)	Asphalt Tile 3/16" (C,D)	Linoleum .125"	
Asphalt Tile 3/16"	Asphalt Tile 1/8", 3/16" (greaseproof)	Cork Tile 1/8"	
(A,B) Linoleum .0625"	Linoleum .125" Battleship	Excelon Tile 1/8" (Vinyl Asbestos)	
	Cork Tile 3/32"	(VINYI ASDESIOS)	
	Excelon Tile .0625" (Vinyl Asbestos)		
60¢ - 70¢	70¢ - 90¢	90¢ and over	
Vinyl Corlon .070" (Hydrocord Back)	Vinyl Corlon .090" (Hydrocord Back)	Custom Corlon Tile 3/32",	
Rubber Tile 1/8"	Rubber Tile 3/16"	(Homogeneous Vinyl) 1/8"	
Cork Tile 3/16"	Custom Corlon Tile 3/32", 1/8" (Homogeneous Vinyl)	Custom Vinyl Cork 1/8" Opalesg Vinyl Tile 1/8"	
Linotile 1/8"	Cork Tile 5/16"	(Homogeneous Vinyl)	

NORTON ELECTRIC DOOR OPERATOR

R



New

A new device to make self-opening doors practical for any building!

N

0

Many advanced features provide longer, more trouble-free life at lower costs...This operator can be installed without halting traffic thru door.

The field of usefulness for Automatic door operators has been greatly widened by the introduction of this improved electro-hydraulic device, already thoroughly service-proved in the field. It is particularly suitable for remodeling because normal traffic is virtually unimpeded during installation ...no expensive building alterations or additions ...no big holes dug under the door ... no air or hydraulic trunk lines to install and no compressors.

Other advantages make the NORTON ELECTRIC DOOR OPERATOR equally desirable for new construction. Among them are the following:

- Can be had in the surface-mounted type as illustrated or concealed models.
- Availability of both regular and parallel arms permits twin door installations with both opertors indoors.
- Concealed hydraulic door closer permits manual operation of doors in case of power failure.
- Door can be held open as desired...normal operation resumes at the flick of a switch.
- Fast emergency service together with periodic inspection and expert repairs are assured every user.
- Costs less, fully installed, than any competitive device.

These and other advanced features make the NORTON ELECTRIC DOOR OPERATOR an asset for a wide variety of buildings and businesses in which such devices were considered impractical heretofore. Send today for full information on typical installations. No obligation. Just mail the coupon.



NORTON DOOR CLOSER COMPANY Division of The Yale & Towne Manufacturing Company Box AF-39A, . Berrien Springs, Michigan
Rush me full information about the new Norton Electric Door Operator.
Name
Title
Firm Name
Address
City & ZoneState
Interested in 🔲 surface type 🛛 concealed type
For immediate use future use



Here are 5 of the 18 reasons why it pays to pick Chrysler Liquid Chillers



Cooling for comfort? Or cooling a process? Only Chrysler Airtemp SW Liquid Chillers offer so many exclusive engineering advantages. Take the hermetically-scaled radial compressor, for example. You get:

- Floating power. Rubber-in-sheer suspension absorbs vibration. Noise is gone . . . and so are vibration-caused service headaches.
- Direct drive. No belts, no pulleys, no seals to break down. You get greater efficiency, less noise from a more compact package.
- Positive lubrication. Exclusive pressure pump is sealed in a bath of oil. Moving parts get constant lubrication for long, trouble-free life.
- (4) Crankcase heater. Prevents refrigerant from condensing and diluting lubricant. Oil stays clean . . . and always ready to flow.
- Sealed-in motor. Dust-proof for longer service life. Directly connected to dynamically balanced crankshaft to cut weight and operating costs.

The rest of the 18 reasons? They include innerfin direct expansion chiller, automatic control panel, easier installation and . . . But why not get the complete story from your local Chrysler Applied Machinery and Systems sales office. Or write: Airtemp Division, Chrysler Corporation, Dept. W-39, Dayton 1, Ohio.



FIRST WITH THE FINEST IN AIR CONDITIONING



NEW TRUSCON "O-T" STEEL JOIST now designed to 20,000 PSI working stress

Truscon "O-T"[®] Series "S" (Shortspan) Steel Joist now is offered in balanced design —in balance with all other sturctural elements. As a member of the Steel Joist Institute, Truscon now is producing the new "O-T" Joist designed to 20,000 psi working stress.

This newly-designed, more versatile, stronger joist now is being manufactured in the industry's newest fabricating plant, designed for highest efficiency.

Straight bottom chord carries to spandrels and columns. Good stability in both directions. Economical extended end. Produced in the longer 40- to 48-foot range. Number of sizes increased from 17 to 25 for more exact, predictable load-bearing.

In producing and marketing this new design, Truscon continues to exceed the rigid standards of the Steel Joist Institute Quality Verification Program—your assurance of predictable, dependable load-bearing. The new design is available now. Ready to be incorporated into your next set of

plans. Send coupon for specifications, design data.



NEW TRUSCON "O-T" STEEL JOIST is a Warren Truss fabricated of accurately cold-formed top and bottom chords and a plain round web member. Cold-formed steel sections not only make an exceptionally strong joist, but also add a pleasing appearance. Attractive extended end now is possible with this new Truscon development.

WHAT DID TRUSCON BUY FOR \$3,000,000 ? WATCH YOUR MAIL!





ARCHITECTURAL TUBING, SQUARE AND RECTANGULAR. For columns, supports, mullions, rails. Pound for pound, tubing is strongest of all structural shapes. And, square or rectangular tubing gives a handsome, contemporary architectural effect. Republic's Steel and Tubes Division pioneered the manufacture of electric resistance welded steel tubing—can supply ELECTRUNITE® in squares up to 5 inches a side . . . and rectangular sizes in peripheries up to 20 inches in various wall thicknesses. Available in local distributor stocks. Send coupon for reference data.



TRUSCON FERROBORD® STEEL ROOFDECK. Twenty-four inches wide for fast coverage, full protection of flat or pitched roofs. Available in lengths up to 32 feet, 6 inches. Roofs large areas quickly. Straight lay means that several crews can work without delay. All work is done from above. Ferrobord is quickly welded to top chords of joists or purlins. Ferrobord is light, strong, fire-resistant. Twenty-four-inch width available now. Send coupon for specs.

TRUSCON STEEL WINDOWS WITH SUPERCOAT FINISH install without painting. You get the strength of steel, avoid painting, too. Smooth, hard and glossy, Truscon's exclusive Supercoat Process gives you a steel window finish that staves off maintenance painting for many a year. No need now to sacrifice strength and solidity in window sections simply to avoid field painting costs. Supercoat—in colors—can be furnished on factory shipments of all Truscon Steel Window types for commercial, institutional, and industrial construction. Send coupon for facts.







INSTALL WITHOUT PAINTING! Steel windows finished with Supercoat need no painting when installed. No maintenance painting for years. Tests prove it.

REPUBLIC Steel

NA

Worlds Widest Range of Standard Steels and Steel Products

REPUBLIC STEEL CORPORATION DEPT. AF -6870 1441 REPUBLIC BUILDING • CLEVELAND 1, OHIO Please send information on: Truscon "O-T" Steel Joists Ferrobord Roofdeck Architectural Tubing Supercoat Finish

Name______Title_____ Firm______ Address______ City_____Zone___State____



Four-foot widths (most any length) widen the adaptability of all-aluminum Columbia louvers in both $\frac{1}{2}$ " and 1" cube cells. With rigidity and perfect alignment an integral characteristic of Columbia louvers, wider panels mean less material and less labor required for suspension systems...fewer exposed T-bars, too. Koldbond louvers never sag, crack or break...give symmetry of design as they shield. Available in soft, pastel colors created to complement decor without

dominating. You must see our louvers!

Send for your FREE COLOR SAMPLES... and/or the complete catalog of Columbia fixtures.

COLUMBIA ELECTRIC & MANUFACTURING CO. 2310 N. FANCHER WAY · Dept. F-3 · SPOKANE, 10, WASHINGTON COLUMBIA ELECTRIC CO., INC. 7900 Sovereign Row Dallas 35, Texas *Copyright applied for



MEMBER Eye Fidelity Lighting Group



IN THE MODERN HOSPITAL

EMORIAL HO



102

Hospitals present many special problems. Quality is essential, yet budgets are almost invariably low. Although sanitation is of paramount importance, modern hospitals avoid a cold, sterile appearance. When it comes to flooring, Hako meets all the critical requirements. Low in cost, Hako meets your most rigid quality demands. It is easy to keep clean and sanitary, lasts for years, and is available in a complete line of cheerful colors and patterns. For your next hospital project, be sure to specify Hako Asphalt or Vinyl-Asbestos Tile the ideal hospital flooring.

HAKO BUILDING PRODUCTS Division of Mastic Tile Corporation of America Houston, Tex. • Joliet, Ill. • Long Beach, Calif. • Newburgh, N. Y. Asphalt Tile • Vinyl-Asbestos Tile • Coronet Plastic Wall Tile

HA37



LUPTON makes individuallyregulated comfort conditioning an integral part of a curtain-wall system

Reduces installation costs 40-60% from previous airconditioning methods for all true "perimeter" buildings

Now that comfort conditioning has been combined with LUPTON curtainwall systems, you can forget about unsightly, expensive cooling towers ... bulky, space-eating ductwork and plumbing connections. The only apparatus necessary for LUPTON comfort conditioning is electrical connections.

Skilled LUPTON crews will assemble the units...giving you one-source responsibility for outside wall and inside cabinets, shelves, and comfortconditioning equipment. This eliminates the problems of specifying and coordinating these various parts. The curtain wall and comfort-conditioning system are installed together to form a complete exterior-interior wall.

Two interchangeable units

LUPTON gives you two comfort-conditioning units to work with: heavyduty for areas with a particularly heavy cooling load, and lighter-duty for average loads. Both units have the same dimensions, and can be interchanged as loads increase or decrease. All components are selected for low noise level and durability. They're precision-balanced for maximum over-all efficiency.

LUPTON comfort conditioning is designed and installed to give room-byroom control of air-conditioning, filtration, ventilation, and exhaust. These advantages, plus the space it saves, are among comfort conditioning's major rental features for building owners.

Another is lower air-conditioning costs. Because temperature is regulated from each unit by the occupant of each room, there's no costly overair-conditioning. Individual comfort control allows complete variation from room to room.

System widely flexible

With advance planning, your LUPTON comfort-conditioning system is simple to re-arrange. You can make changes in the number and location of comfort-conditioning units with ease and speed . . . at relatively small cost.

Just treat all exterior panels in a uniform manner to provide for comfort conditioning. Install as many LUPTON Comfort-Conditioning Units as you need at first. Combine them in each office with shelving, bookcases, or storage cabinets. Then, you can replace these latter units, when required, with additional LUPTON comfort conditioners.

You can also conceal or expose the air-circulating function of the panels. This feature allows you endless opportunities for variations in spandrel proportions and surface treatment.

Write today for more information about Comfort Conditioning. Explore the almost unlimited possibilities of LUPTON's newest advance in aluminum curtain-wall design and function.

LUPTON[®]

ALUMINUM CURTAIN WALLS AND WINDOWS MICHAEL FLYNN MANUFACTURING COMPANY

Main Office and Plant: 700 E. Godfrey Ave., Philadelphia 24, Pa. New York, N. Y.; Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Los Angeles, Calif.; Stockton, Calif.; Dallas, Texas. Representatives in other principal cities.



On the inside, a sill of normal depth tops the compact comfort-conditioning unit as well as its adjacent cabinets—presenting an extremely attractive decor.



On the outside, nothing protrudes. Wide separation between air intake and discharge gives faster, more efficient dissipation of heated air, prevents it from re-circulating.



One panel controls temperature, fan, and exhaust for smoke or odor removal ... allows each occupant individually to regulate comfort conditioning for his office.



Through advance planning, you can readily expand or decrease comfort-conditioning capacity, interchange units quickly, easily, and at small cost.



ARCHITECT: JOHN F. STANN: CONSULTING ENGINEER: J. B. WYBLE: BUILDER: SAM EIG





Check these facts about the 25-ton Arkla-Servel Cooler

- A compact unit, easy to install and light enough for rooftop installation.
- Costs are low for installation, operation and maintenance. No specially trained operating or maintenance personnel are required.
- Can be installed singly or in banks to fit any size installation.



"... now we're <u>cooling</u> with GAS !"

Arkla-Servel Gas Air Conditioning keeps customers cool and operating costs down at the Motel Washingtonian

"While we were planning the Motel Washingtonian, we made a complete study of all potential equipment," states Sam Eig, builder and corporation president of this modern motel near Washington, D.C. "We knew we wanted gas for cooking and heating, and after our investigation, we found gas best for *all* operations."

For air conditioning, the specifications called for Arkla-Servel gas absorptive coolers. "With our Arkla-Servel units, we have no maintenance problems," adds Mr. McKeever and Mr. Eig. "And we were able to tie them into our heating system without worrying about special housing, vibration, or noise. Our one central system cools in summer, heats in winter to provide us with a quiet, year-round economical operation." With the new Arkla-Servel gas absorptive cooler, your clients get extra—even exclusive—advantages that only a gas cooling system gives.

- High efficiency at all times—even during the light loads.
- Constant temperature control.
- Instant automatic adjustment to match actual cooling requirements.
- Dependability of fuel service at all times.

Gas absorptive cooling can put your commercial and industrial clients' heating plant on a year-round paying basis, too. For specific information, take advantage of the consulting services provided by your gas company. They have trained specialists who have been working with architects and engineers for years. Check the facts about gas and you'll see—modern gas air conditioning out-performs all other fuels. American Gas Association.

How long should a kitchen last?

A quarter-century or more-conservatively speaking-when it's built by Blickman! More than any other single factor, fine construction is the hallmark of quality equipment. Construction craftsmanship, based on exacting Blickman standards, is the difference between longevity and premature old age. Designed for efficient work flow, fewer operating personnel, low maintenance costs...these additional qualities built into Blickman equipment pay for themselves many times over in many decades of dependable service. From the start, Blickman calls on advanced, specialized engineering...unequalled metalfabricating talent...the most modern tools (acres of tools!)...and three-quarters of a century of wide-ranging experience.



Working with architect, engineer, and management from the very first stages of your volume feeding project, Blickman is able to bring to your planning team an acknowledged engineering and fabrication leadership won in installations throughout the country.

For example, when the kitchen was planned for the new Socony Mobil building in New York, Blickman worked from the first with the building team to develop a high-efficiency layout to service the cafeteria and six private dining rooms. Here you see the main cooking area whose 38-foot long combination cook's table and waiter pick-up station is separated from the Garde Manger (not shown) by a spacious aisle. Layout allows fast service of hot foods...eliminates bottlenecks...eliminates cross traffic.



The finest metal workers in the business today fabricate the famous Blickman full-rounded corners, perfect fits, literally invisible welds. From first cutting of sheet, to final polishing of complex shapes, these men preserve the unique advantages of stainless steel.

For example, in the Blickman-Built kitchens at Travelers Insurance Companies' new building in Hartford, Connecticut, the application of Blickman's unique seamless welding technique produced the completely crevice-free tops of the cook's table with well-rounded edges, bull-nosed corners, seamless tubular understructures and sanitary bullet feet -assuring years of rugged, low-cost operation.

For full information, write S. Blickman, Inc., 5803 Gregory Avenue, Weehawken, New Jersey.

Look for this symbol of quality.



BLICKMAN FOOD SERVICE EQUIPMENT

A roundup of recent and significant proposals



MULTIMILLION-DOLLAR OFFICE BUILDING AND HOTEL FOR ANCHORAGE, ALASKA

In downtown Anchorage, on a bluff overlooking Cook Inlet, ground will be broken in May for one of the largest building projects in Alaskan history. Financed by Texas wildcatter Michel T. Halbouty and builder-promoter Walter J. Hickel of Anchorage, the project includes two 11-story buildings sheathed in white porcelain and gold aluminum panels. One building will be the 200-room Captain cook hotel (left); the other, the 130,000-square-foot Hickel-Halbouty office building. Cost: \$10 million. A 300-car underground parking garage, Alaska's first, and an enclosed mall dominated by a threestory totem pole, are included in the plans drawn by Hedrick & Stanley, architects, of Houston. Completion date: 1960.

FORDHAM UNIVERSITY'S BRANCH CAMPUS AT LINCOLN SQUARE

As part of New York City's vast renewal program for Lincoln Square (FORUM, August 1958) Fordham University will fill nearly eight midtown acres with the \$25.5-million center pictured below. Six glassy, four- and five-story buildings connected around inner courts will house the university's schools of law, business, social service, education, and general studies. Anticipated enrollment: 8,000 students. Construction will start this spring. The architects for the project are Voorhees, Walker, Smith, Smith & Haines.





GRILL-SCREENED FIREHOUSE FOR SOUTHERN ILLINOIS

In Granite City, Illinois, just across the river from St. Louis, a two-story firehouse is now being built to plans that call for a second floor hung from concrete bents (to create a column-free ground floor) and a masonry screen across the façade (ostensibly to shield sleeping firemen from highway headlights). The building is the design of Granite City Architects Gabriel & Dulgeroff. It will cost about \$315,000.

LIBRARY-MUSEUM-PLANETARIUM FOR MINNEAPOLIS

The rendering at left shows the new community building now under construction in Minneapolis, Minnesota, as part of that city's lower loop development. The library will be located in the large four-story section at right, the museum

and planetarium in the dometopped wing at left. Scheduled for completion by December 1960, the 310,000-square-foot project will be sheathed with granite, gold aluminum, and glass. Cost: \$4.5 million. Architects: Land & Raugland.



KANSAS CITY APARTMENTS

Eight blocks of slums have been leveled in Kansas City, Missouri to make way for Wayne Miner Court, a lowrent public housing project designed by Kansas City architects Neville, Sharp & Simon. The project (right) includes five Y-shaped, brickfaced towers, nine and ten stories tall, surrounded by 15 two-story buildings and about 15 acres of landscaped parks. Subsidization for the 738 apartment units, which range in size from one to five bedrooms, will run about \$9 per room. To be ready for occupancy by 1961, the project will have a total area of 841,070 square feet and will cost \$9 million, excluding land.





CANAL-SIDE HILTON FOR AMSTERDAM

In the latter part of 1960, a new 11-story Hilton Hotel, faced with brick, glass, and white cement, will open beside a busy canal in Amsterdam, The Netherlands. Included in the plans are two glassed-in

gardens on either side of the main entrance, a roof garden, bar, restaurant, and 279 rooms. The architects are H. Salem and F. W. Vlaming of Amsterdam. Construction will start this spring. Cost: \$5.3 million.

NEW BUILDING ON OLD FRAME IN NEW JERSEY

The reinforced concrete frame of an old warehouse in Hackensack, New Jersey will be incorporated into the new office building shown above. Designed by Keys, Lethbridge & Condon of Washington, D. C., the building will be six stories tall, faced with blue and gray porcelain panels and glass—and will provide about 50,000 square feet of floor space. Completion is scheduled for September. Cost: \$1.2 million.




cont'd



GLASSY STATE OFFICE BUILDING IN ST. LOUIS

This three-story glass-andmarble-faced office building with its banks of concrete columns and inverted pyramid pods has been designed for the Missouri State Division of Employment Security by architects Hellmuth, Obata & Kassabaum. Now being built in downtown St. Louis, it will provide 58,000 square feet of floor space for some 250 state workers. Completion is set for January 1960. The project is expected to cost roughly \$1.5 million.

HELIPORT-TOPPED HOSPITAL FOR OMAHA

In his plans for the new \$5million, 258-bed St. Catherine's Hospital, soon to be built in Omaha, Nebraska, architect Leo A. Daly has included three separate buildings (below). A central structure, five stories high and capped with a heliport for receiving air-lifted emergency cases, will be used for regular hospital care. A one-story building (middle) will be used for intensive care and the motel-like section (right) will be for ambulatory patients.



ROUND GLASS BANK FOR SAN FRANCISCO

For people who like to keep their money in glass jars this San Francisco branch bank of the American Trust Company will have especial appeal. It will be sheathed with 40 huge sheets of glass separated by slim black columns enclosing an open floor 70 feet in diameter and will be topped by a pleated concrete roof covered with sheet copper. The architects for the building are Skidmore, Owings & Merrill.





FEDERAL COURT AND OFFICE BUILDING FOR PHOENIX

Within two years this sevenstory U. S. Court House and federal office building will be completed in Phoenix, Arizona from plans by local architects Edward L. Varney Associates and Lescher & Mahoney. Faced with glass, terra-cotta, and porcelain enamel, it will provide 285,000 square feet of floor space for 1,200 government employees. Cost: \$9 million.

CHICAGO CONVENTION HOTEL

The largest hotel to be built in Chicago in more than 25 years will be erected beside the Illinois Central railroad tracks, directly across the street from the city's projected, mammoth convention hall. Designed by Chicago architects Naess & Murphy, the project will be ten stories tall, and will have 550 rooms, underground parking for 600 cars, and an outdoor swimming pool heated for winter use. The Kabak Corporation is the backer. Cost: \$10 million. Completion is set for mid-1960.







Now from Du Pont Research comes a new kind of paint that definitely retards the spread of flame.

Rigorous testing by Underwriters' Laboratories has proved conclusively that DuPont Fire Retardant Paint helps answer the plea of firemen to "Find a way to give us a 5-minute jump on most fires and we can control them."

Du Pont Fire Retardant Paint is a durable, washable interior flat finish that *looks*, *applies and wears like regular flat wall paint*. It can be brushed, rolled or sprayed...comes in seven eye-pleasing colors: Sunlight Yellow, Pale Blue, Daylight Green, Light Green, Pale Pink, Guards Gray, Ivory—and White.

Du Pont Fire Retardant Paint may well be "the ounce of prevention" that helps save you from a disastrous fire loss. Send today for your FREE copy of the DuPont Fire Retardant Paint folder. Just clip and mail the coupon below.



BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.) Finishes Division, Dept. AF-93 Wilmington 98, Delaware

Rush! Please send me a FREE copy of your Fire Retardant Paint folder.

Company,

State

Zone

Name_____

Street____

4.0

now ... for the first time anywhere, a complete line of surface and concealed door closers. for all applications ... all door sizes, both exterior and interior. no sacrifice in SARGEE

SARBEN

efficiency over conventional surface closers of equivalent size. styling speaks for itself. call your **sargent** supplier now. or write to **sargent & company**, new haven 9, connecticut.



New from United States Plywood



CURTAIN WALL panels faced with Weldwood Glasweld and used as opaque glazing a new concept in permanent exterior color. Weldwood Glasweld panels answer the need for a flat, economical, and highly durable facing.

GLASWELD – a colorfast inorganic panel to inspire fresh ideas in building design



For building exteriors and interiors strong, rigid, colorfast Weldwood Glasweld

Here is an attractive solution to the problems of beauty, durability, and economy in building design. Weldwood Glasweld is a completely inorganic exterior-grade steamcured reinforced asbestos panel with a permanent allmineral enameled surface. It is *guaranteed* colorfast, fully weatherproof, and incombustible. An effective moisture barrier, it will not rot or warp, is easy to keep clean, has a high strength/weight ratio, and has high resistance to chemicals and abrasion.

Suitable for exterior use such as fascia panel components, soffits, and canopy ceilings, Glasweld has countless interior possibilities, as well. Bathroom walls, fixed and movable partitions, wainscoting, kitchen counter tops and sliding cabinet doors, and dinette tops

WELDWOOD® GLASWELD®

Product of United States Plywood Corporation

of Glasweld suggest just a few of its uses. Select from its variety of patterns and more than 30 standard colors.

Weldwood Glasweld in 48" x 96" panels comes in stock thicknesses: $\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ ", and $\frac{5}{16}$ ". Prices and delivery on special sizes and thicknesses on request. For specifications and installation data, mail the coupon.

.....

D	nited States Plywood ept. AF3-59, 55 W. 4	4th St., New Y	ork 36, N. Y.
	lease send me the r lasweld" (#1914).	new data bool	klet, "Weldwood
N	ame		
Fi	irm	•••••	
A	ddress		
c	ity		State



Vallecitos Atomic Power Plant

Pleasantan, California The first all privately-financed nuclear power plant.

Operated by Pacific Gas & Electric Co. and

General Electric Co.

Architects and Engineers: Bechtel Corp. all of San Francisco Mech. Contractor: Coast Heating and Ventilating Co. Oakland, Calif.

POWERS CONTROL

here is used in the power plant. It meets the rigid standards required in regulating ventilation supplying personnel with safe, comfortable, uncontaminated air.

Industrial Reactor Laboratories, Inc. Plainsboro, N. J.

Architects: Skidmore, Owings & Merrill Mech. Engineer: Guy B. Panero Mech. Contractor: August Arace, Inc. General Contractor: Turner Construction Co. Prime Contractor AMF ATOMICS

POWERS CONTROL here regulates the heating, ventilating and air conditioning in the reactor and laboratory buildings.



Medical Research Center, AEC Brookhaven National Laboratory, Upton, N. Y. – Nuclear research here will benefit all mankind. The first nuclear reactor (1000 kw) designed specifically and exclusively for medical research and treatment is located in the reactor tower (A) shown below.

Architects: Eggers and Higgins • Mechanical Engineers: Syska & Hennessy Mechanical Contractor: Malan Construction Corp. • All in New York City

POWERS CONTROL in these completely air conditioned buildings regulates temperature, humidity and ventilation.



Owner-members of Industrial Reactor Laboratories: American Machine & Fdry. Co., American Tobacco Co., Atlas Powder Co., Continental Can Co., Corning Glass Works, National Distillers & Chem. Corp., National Lead Co., Radio Corp. of America, Socony Mobil Oil Co., U. S. Rubber Co.

Below: Operators at Industrial Reactor Laboratories, protected by 3 ft. thick viewing windows, conduct experiments with masterslave manipulators shown below.



(D9)



... keeps pace with the demands of modern science and industry

At the Birth of the Atomic Age in 1942 at the University of Chicago, temperature of the space occupied by "the first nuclear reactor" was controlled by Powers Type K Thermostats installed under the West Stands of Stagg Field.

In 1944 at Hanford, Wash., Powers Transmitter Controls regulated temperature of the huge volume of water required for cooling the nuclear reactors. The capacities of ten 2500 ton YORK refrigeration compressors, made especially for this important project, were regulated by Powers Series 100 Transmitters and Receiver Controllers. They also controlled 24" butterfly valves used to regulate the distribution of refrigerated air.

> Accurate Control of Air Conditioning is Vital in modern nuclear reactor plants. Safety and comfort of employees and reliability of ventilation controls are specially important in radioactive "hot" areas. In the three prominent installations on the opposite page, Powers control is required to meet rigid standards of performance.

Other Users of Powers Controls: Some AEC buildings in Oak Ridge, Tenn.; at Argonne National Laboratory, air conditioning and cooling water for a Cyclotron is regulated by Powers; in AEC plants at Portsmouth and Fernald, Ohio and Weldon Spring, Mo.; in Atomic Energy of Canada Ltd., buildings 145 and 465 at Chalk River, Ont., Powers controls heating and air conditioning.

Nuclear Reactor Research Facility of the U.S. Naval Research Laboratory, Wash., D.C. is air conditioned and Powers controlled.

At Illinois Institute of Technology, Chicago, the first nuclear reactor for private industrial research was installed by the Armour Research Foundation. Powers air conditioning control is installed here in the Physics and Electrical Engineering Research building in which the reactor is located.

For Your New Building - Whether its a school, hospital, commercial or industrial building, ask your architect or consulting engineer to include a Powers Quality System of Temperature Control. You will benefit from - Powers complete responsibility for a correctly engineered control system, proper installation, continuous successful operation and SERVICE when required from offices in 85 cities.



Inside the dome at IRL a crane services reactor pool. Powers control here,

Offices in chief cities in U.S.A.

THE POWERS REGULATOR CO.

SKOKIE, ILLINOIS

and Canada

65 Years of Automatic Temperature, Humidity Control

regulates the ventilation and air conditioning. Note ducts on circular wall

Architectural Forum / March 1959

steel doors,^{*} frames, borrowed lights, side lights, transoms...

> custom quality without custom delay!

•

You order Aetnapak components directly from catalog for 48-hour delivery. Prices are stock but quality is custom — characteristic of Aetna's 55-year record of outstanding performance with such lines as Aetna custom doors and frames and Aetnawall metal office partitioning systems. Write for your free catalog of order-from-stock Aetnapak. Aetna Steel Products Corp., 730 Fifth Ave., New York 19 *Complete U-L service including "A" labels with single-point locks.

NAPL

People

Zimmerman appointed FHA chief; Otto Nelson named to head Rockefeller "task force" on New York housing



ZIMMERMAN



NELSON

The newest face in the recent change of top federal housing officials (FORUM, February 1959) is that of Julian H. Zimmerman, who has been appointed to replace Norman Mason as commissioner of the Federal Housing Administration. Mason was recently made new head of the Housing & Home Finance Agency, top federal housing agency, replacing Albert M. Cole, who resigned to become vice president of Reynolds Aluminum Service Corporation.

Zimmerman, 42, has for the past 18 months been general counsel for HHFA, and has had a hand in drafting legislation for most of the agency's housing programs. Before coming to Washington to join HHFA, Zimmerman was an attorney in his native Wichita, Kansas, and also served in 1954-55 as executive secretary to Edward F. Arn, who was then governor. Before joining a Wichita law firm, Zimmerman spent five years as editor-publisher of newspapers in Clearwater and Wichita, Kansas.

NELSON GETS NEW TOP JOB

New York's Governor Nelson Rockefeller has many times declared housing to be one of the Empire State's most pressing problems, and a few weeks ago he indicated how serious he was about meeting the need for more and better housing. Rockefeller appointed a special 13-man task force, to be headed by energetic Otto L. Nelson Jr., to "examine existing housing and urban renewal policies, programs, legislation and administration, and report its recommendations as soon as practicable."

Rockefeller will probably get his report in jig time for two reasons. First, his special "task force" consists of the top figures in the state in all phases of housing, and second. Major General (retired) Nelson is well known for the vigor with which he tackles all of the many tasks that have fallen to him. Besides being vice president in charge of housing for New York Life Insurance Company, Nelson is executive director for construction of the Lincoln Center for the Performing Arts. almost a full-time job in itself, vice president of the Regional Plan Association, and a member of the National Civil Defense Advisory Council.

One of the most immediate jobs of the Nelson "task force" will be to explore methods of attracting private capital to invest in building of middle-income housing. Last fall, New Yorkers voted \$75 million for low-interest state loans to nonprofit corporations for such housing, but Rockefeller believes this amount can be magnified many times if the proper incentives are found to induce more private participation.

Other members of the group are: Elmer Carter, recently made head of the State Commission against Discrimination, replacing Charles Abrams; Harry Held, senior vice president of the Bowery Savings Bank; Herman Cohen, executive director of the Joint Legislative Committee on Housing and Multiple Dwellings; Mendes Hershman, assistant vice president of the New York Life Insurance Company; Charles R. Diebold, president, Western Savings Bank of Buffalo; James H. Scheuer, chairman of the executive committee of City & Suburban Homes Company; Warren T. Lindquist, executive vice president of the Downtown-Lower Manhattan Association; Arthur Reed, member of the Syracuse Planning Commission; Ira Robbins, member of the New York City Housing Authority; John J. Scully, vice president, Chase Manhattan Bank; Robert Sipprell, executive director of the Buffalo Housing Authority; Harry Van Arsdale Jr., president of the Central Trades and Labor Council of New York City.

GREENWALD DIES IN PLANE CRASH

For Herbert S. Greenwald, 42, the flight between Chicago and New York was strictly a milk run. With his home and main office in Chicago, and much of his work as a major builder and urban renewal developer located in the New York area, Greenwald made the three-hour run on a regular commuting basis, sometimes as often as four times a week (FORUM, May 1958). Recently, Herb Greenwald had been spending an increasing amount of time in New York, getting under way on what he considered his most important renewal project-a \$21-million apartment development at the tip of Manhattan Island, adjacent to Battery Park.

He had moved his burgeoning New York office to Park Avenue's bronze-sheathed Seagram building, designed by Mies van der Rohe, not just to have a Park Avenue address, but because he had been Mies's patron for more than a decade, and was

continued on page 66



and Cafeteria, above, with room detail, right, of smooth operating Hubbell 1201 "Topper" Switches which control spots over each bed.



ELECTRICAL CONTRACTOR Chewning & Wilmer, Inc. **Contractors and Engineers** Richmond, Virginia Charles P. Wilson, Engineer

HUBBELL SUPPLIER Graybar Electric Co. Richmond, Virginia

HUBBELL Wiring Devices Used Exclusively In New Visitor Facilities At

COLONIAL WILLIAMSBURG

One of the great tourist attractions in the country is historic Colonial Williamsburg, the restored capitol of the Colony of Virginia. More than one and one-half million people visited the 1957 Jamestown Festival, and now that the Festival Park is on a permanent basis, many thousands more are converging on Jamestown and Williamsburg.

Anticipating the tremendous visitor demands for food, lodgings and other services, Colonial Williamsburg in 1957 completed special visitor facilities which are entirely apart from the historical restored area. These facilities include an information center consisting of two 250-seat theatres, an information headquarters and special exhibit areas, a motor house consisting of 21 one-story building units with 216 attractive rooms, and a new Cafeteria designed to serve 600 guests an hour.

These visitor facilities are beautifully designed and appointed, and all of the materials, equipment and furnishings have been specified with the safety, convenience and comfort of the guests in mind. Harvey Hubbell, Inc. is proud to have been selected as the quality supplier of switches, receptacles, plates and other specification grade wiring devices for this magnificent undertaking.

HARVEY HUBBELL, INCORPORATED

BRIDGEPORT 2, CONNECTICUT

WIRING DEVICE OFFICE AND WAREHOUSE LOCATIONS Bridgeport 2, Connecticut State and Bostwick Streets Chicago 7, Illinois 37 South Sangamon Street

Los Angeles 12, California 103 North Santa Fe Avenue IN CANADA: San Francisco, California 1675 Hudson Avenue Scarborough, Ontario, 1160 Birchmount Road responsible for giving Mies the chance to transform his philosophy of modern architecture into reality.

People cont'd

But last month, on a milk run from Chicago to New York, the plane carrying Herb Greenwald dove into the East River. killing 65 of the 73 persons aboard, including Greenwald. He leaves behind more than a multimillion-dollar building enterprise. He leaves what in a few short years has



GREENWALD

become something of a tradition in city building. His intelligent, urbane approach to city problems was a beacon in the murky semidarkness of urban renewal. His forthright belief in fine architecture, and his willingness not only to back it financially but to prove that it pays to back good design, stands by itself as a singular achievement. Mies van der Rohe, in explaining the role of the architect, once said: "We don't want to change the world, we only want to express it." Herb Greenwald, who Mies says would have made a fine architect, did both.

PEOPLE IN BRIEF

New acting dean of the Columbia University School of Architecture will be Professor James G. Van Derpool, 55, who for the past 13 years has headed the university's Avery Memorial Architectural Library. Professor Van Derpool, who is also national chairman of the Department of Interior's Historic American Building Survey, succeeds retiring Dean Leopold Arnaud, who was dean of the school for 24 years.

Ludwig Mies van der Rohe, 72-year-old master of modern architecture, won another honor recently when he was awarded the 1959 Gold Medal for Architecture by Great Britain's Royal Institute of British Architects. Mies joins a distinguished group of six other Americans (e.g., Walter Gropius, Frank Lloyd Wright, Eliel Saarinen, Richard Morris Hunt, Charles Follen McKim, Thomas Hastings) who have won the medal since it was first awarded by Queen Victoria in 1838. END

DUR-D-WAL SAFEGUARDS THE BEAUTY **OF MASONRY CONSTRUCTION**

Throughout the United States genuine Dur-O-waL Steel Reinforcing is being used in the mortar bed to provide lasting protection for the classic beauty of masonry construction



time-tested Dur-O-waL. This high- masonry walls a backbone of steel.

You can provide timeless protection for tensile steel re-inforcing is trussed the flawless beauty of masonry with designed and custom fabricated to give

Specifications and Research data available on request.





Dur-O-wal Div., Cedar Rapids Block Co., CEDAR RAPIDS, IA, Dur-O-wal Prod., Inc., Box 628, SYRACUSE, N. Y. Dur-O-wal Div., Frontier Mfg. Co., Box 49, PHOENIX, ARIZ. Dur-O-wal Prod., Inc., 4500 E. Lombard St., BALTIMORE, MD. Dur-O-wal of III., 119 N. River St., AURORA, ILL. Dur-O-wal Prod. of Ala., Inc., Box 5446, BIRMINGHAM, ALA. Dur-O-wal of Colorado, 29th and Court St., PUEBLO, COLORADO Dur-O-wal Inc., 165 Utah Street, TOLEDO, OHIO



OWNER: UNITED AIR LINES . GENERAL CONTRACTORS: HUMPHREYS & HARDING, INC. . ARCHITECT: SKIDMORE, OWINGS & MERRILL . ALUMINUM MATERIALS: KAISER ALUMINUM AND CHEMICAL SALES. INC.

United Air Lines' \$10-million passenger terminal

features Architectural Metals by North American

Architectural metals made by North American Aviation are a distinctive feature of the new United Air Lines Passenger Terminal at New York International Airportmodern as jet-age travel-which will be put into use in September of this year.

North American curtain wall encloses the two-level structure, which stretches 691 feet and covers 4½ acres of floor space. Concourses lead to 16 gate positions. A 25foot overhang running the length of the building enhances the beauty of this terminal.

North American fabricated and erected the panels, mullions, fascias, and doors which enclose the exterior. The twenty-eight-foot column covers — manufactured in one piece from aluminum sheets 28 feet long and 77 inches wide—represent a unique manufacturing accomplishment. North American also is making and will install the interior ornamental metal work, including decorative metal used on balcony railings, escalator enclosures, and columns.

North American Architectural Metals are custom-designed—yet they are economical, easy to erect, enduring. They are equally adaptable to simple one-story structures and towering landmarks.

When an architect specifies North American Architectural Metals, he is free to design a building that is functional, esthetically pleasing... and exciting. That's because North American's design and engineering department knows how to help him find practical solutions for any structural metal problems.

ARCHITECTURAL METALS

. THE COLUMBUS DIVISION OF NORTH AMERICAN AVIATION, INC.



the difference a spire can make...

crafted by Overly



Somehow a church looks incomplete without the inspirational soaring form of a spire. To graphically illustrate this point, we have removed the spire (photographically) from the view at lower left. Notice that the church looses much of its dignity and meaning. The view at right is, of course, the way the building was designed and constructed complete with a 62' spire and cross. • This graceful ornamentation is a product of our unique cost-saving prefabrication techniques. It was crafted in 1/8" and 18 gage aluminum and will last the church's lifetime without maintenance. • Your church, too, should have the completeness of a spire crafted by Overly. . Send today for our history of spires, "Pointing to God."

OVERLY MANUFACTURING COMPANY GREENSBURG, PENNSYLVANIA LOS ANGELES 39, CALIFORNIA





"CERAMIC TILE ... A BEAUTIFUL EXTERIOR MATERIAL"

VICTOR GRUEN ASSOCIATES

lef m

Victor Gruen's plan for the Westchester Terminal Plaza in New Rochelle, New York, is a milestone in the efficient planning of urban space. This project, which is estimated to cost \$41,000,000, combines a number of uses on a comparatively small site. It will contain a 750,000 sq. ft. regional shopping center, a railroad station, an office building, a hotel, a bowling alley and other related facilities.

Ceramic tile will cover much of the building's exterior. Serving as a functional and beautiful facade, tile will combine gracefully with the other modern building materials: the cylindrical glass-enclosed elevator shafts on the side of the tower and the gold anodized aluminum sun grille protecting the 24-story office tower. Any modern structure gains in appearance, prestige and decreased maintenance costs when ceramic tile surfaces are used . . . inside or out. Rugged, fireproof ceramic tile comes in over 200 different colors and a wide range of sizes—giving the architect the greatest design freedom possible.

The Modern Style io

Forum

CERAMIC TILE



Design for Westchester Terminal Plaza by Victor Gruen Associates

The multiple benefits of ceramic tile will pay off handsomely for yourself and your client on any residential, institutional or commercial project you undertake. See your local tile contractor for up-to-date information—including all the details on the new lower-cost installation methods and the new dry-curing, thin-setting bed mortars.

PARTICIPATING COMPANIES

American Encaustic Tiling Co., Inc. Atlantic Tile Mfg. Co. Cambridge Tile Mfg. Co. Carlyle Tile Co. General Tile Co. Gladding, McBean & Co. Jackson Tile Mfg. Co. Jordan Tile Mfg. Co. Lone Star Ceramics Co. Monarch Tile Mfg. Inc. Mosaic Tile Co. Murray Tile Co., Inc. National Tile & Mfg. Co. Olean Tile Co. Pacific Tile and Porcelain Co. Pomona Tile Mfg. Co. Ridgeway Tile Co. Robertson Mfg. Co. Sparta Ceramic Co. Stylon Corp. Stylon Southern Corp. Summitville Tiles, Inc. Texeramics, Inc. United States Ceramic Tile Co. Universal Potteries, Inc. Wenczel Tile Co. Winburn Tile Mfg. Co.

TILE COUNCIL OF AMERICA, INC.

800 Second Avenue, New York 17, N. Y.; Room 933, 727 West Seventh St., Los Angeles 14, Calif.; Room 220, 3409 Oak Lawn Avenue, Dallas, Texas



Letters from readers:

art ... salesmanship ... government character

UNESCO'S ART

Forum:

To see what UNESCO (FORUM, December 1958) paid for art and what it received was appalling. Apparently there was no landscape architect commissioned to coordinate the artists' efforts on the exterior spaces.

GENE SCHRICKEL JR., landscape architect Arlington, Texas

■ True, there was no landscape architect, but landscaping is budgeted, and Paris' spring weather may help it.—ED.

HIGH-PRESSURE ARCHITECTURE

Forum:

The brain-washing of architects, for the purpose of selling themselves ("How architects sell," FORUM, December 1958) is a deeply unethical act. This approach should be left in the grocery store, and not brought into the profession.

The day has come when we should educate the public through every means possible. However, this doesn't mean to hire high-pressure salesmen.

BURTON D. GLASS Chicago, Illinois

GOVERNMENT CHARACTER

Forum:

Your article on the character of government building (FORUM, January 1959) was great. Not only should community and government buildings have character and dignity of their own, but also all buildings should express their special use in their architectural character.

ANSHEN & ALLEN, architects San Francisco, California

Forum:

Was the East River United Nations complex too much in the editors' front yard to be recognized in your January article on "government character"? Even if now strictly supragovernmental, it has the glorious chance of becoming the center of the greatest government known to man. The UN group, it seems to me, answers positively all three of the concluding challenges of your article.

ALEXANDER S. COCHRAN, architect Cochran, Stephenson & Wing Baltimore, Maryland Forum:

Your article on government character, dealing with the expression of a spiritual idea in terms of today's technology, touched on the crucial problem of architecture.

We are at a very early stage of development, still experimenting with our new techniques and searching for a true expression and a richer vocabulary. We know that the solution to the problem you posed will come neither from the selfconscious, by the-yard application of a well-proportioned grid to a cellophane wrapping, nor from the Disneyland symbolism of a building for a record company in the form of stacked records, nor from a church in the shape of a fish, or an airline building resembling an airplane.

This country created, early in this century, monuments paralleling in a limited way the great Gothic cathedrals —monuments to God. We have seen the skyscraper developed originally not as an exploitation of real estate but as a monument to the ambitions of commerce expressed in a technique clearly belonging to our age.

And so I believe that, if our age of anxiety, specialization, and resulting confusion reaches the crystallization of an idea (such as government by democracy) to the point of being unifying and generally understood, our architecture will find a way of expressing it by making a forceful statement, basic, mature, and undiluted by tricks and artificial sophistication.

L. L. RADO, architect Raymond & Rado New York, New York

Forum:

Perhaps our country should depend less on borrowed clichés in governmental architecture. Such conspicuous and voluminous legislative palaces as the new parliaments for French West Africa at Dakar, for new Turkey in Ankara, Brazil in Nova Cap, for Kenya in Nairobi, can hardly be classed as "autochthonous" and native growth. They are imported inserts, in a culturally strange landscape.

To see black-faced Kikuyu clerks with white British wigs on their heads, behind the legislative council table in Nairobi, to watch a fourteenth-century-dressed African Sergeant at Arms carry in a strange medieval mace as if he was to discipline with this monumental mallet the helmeted

continued on page 80

"my masons like MENDING GALVANIZED MASONRY JOINT REINFORCEMENT Best"

That's the conclusion of

The National Wax Company has 41,000 sq. ft. of floor space in its new headquarters in Skokie, Illinois. Ragnar Benson engineers specified Keywallin every concrete masonry course outside and as a the for the brick facing. Keywall was specified in every other course for interior walls.

INSIDE OR OUTSIDE Alliance Vall MEANS PERMANENT PROTECTION

VENEER PANEL Porcelain-on-steel lam-

inated to hardboard or cement asbestos board ... with moisture backing of galvanized steel, foil, or porcelain-onsteel. (Sweets Architectural File 6d) al

PANELS

Porcelain-on-steel laminated to various standard insulating cores... or to cores of your specification. (Sweets Architectural File <u>3c</u>) al





For lasting good looks, look to AllianceWall! Created for indoor and outdoor use, AllianceWall offers unlimited freedom in carrying design and color scheme, inside or outside. Economical, it's easy to install . . . with field revisions easily accomplished by metal saw. Durable, AllianceWall panels are unaffected by climate, sunlight, corrosives, and most all impacts.

That's AllianceWall, available now in 26 lustrous colors and stipple patterns . . . plus black and white. For full details, send for AllianceWall literature, today!

ALLIANCEWALL DIVISION, ALLIANCEWARE, INC., ALLIANCE, OHIO

BETTER AIR CONDITIONING FOR EVERYBODY



Save hours of design time with this <u>one</u> Weathermaker that solves scores of air conditioning problems!

Just study the opposite page for a moment. See how easy it is to tailor the new Carrier 39AC Single-Zone Weathermaker* to your central station air conditioning jobs. "Building-block" flexibility simplifies unit selection and location; enables you to satisfy all system requirements quickly and precisely. Another big timesaver is the new 72-page Carrier Catalog 39ACW-55—so complete it is the only reference you need to use. Chilled water or direct expansion coils may be selected either from entering and leaving conditions or by using apparatus dewpoint. No basic data calculations required. For your copy of the catalog, phone the Carrier office nearest you. Or write Carrier Corporation, Syracuse 1, New York.



39AC Single-Zone Weathermakers. For conventional systems. Choice of direct expansion or chilled water cooling coils; steam or hot water heating coils. Eight sizes, from 2400 to 40,750 cfm; coil face velocities from 300 to 700 fpm; static pressures up to 4 inches. Carrier also offers 39W Multi-Zone Weathermakers for simultaneous independent cooling or heating in up to 14 different zones. 8 sizes; same cfm range, coil face velocities and static pressures as 39AC. Typical horizontal arrangement



* Reg. U.S. Pat. Off.

Typical vertical arrangement





Straits Accordion Folding Doors now offer you—this newest noise reducing feature ...two complete doors joined together for dual protection against unwanted noise. Ruggedly constructed, these folding doors absorb sound through 19 sound barriers, consisting of dead air space, fiberglass blankets, vinyl coverings and special acoustical treatment at the ceiling. This construction permits a minimum of sound leakage and bounce-back into rooms. No other folding doors offer these sound absorption qualities. A wide range of colors in washable durable soil-resistant Tolor covering

A wide range of colors in washable, durable, soil-resistant Tolex coverings by Textileather Division of General Tire & Rubber Co., are available for modern design treatment.

Contact your local representative or write direct for complete details.

STRATTS PRODUCTS, INC.	See Your Sweet's 16	-
2700 Franklin St. • Detroit 7, Mich.	Catalog File No. 5	

SUPER/AIR-VAN® in BERGLAS

AVAILABLE

IN ANY

COLOR

BURNESS AND THE

2.61

AMCA

new

U. S. Pats. 2188741, 2526290 Pats. Pending

INHERENTLY QUIET

- SONOSOLVE HOOD
- NEVER NEEDS PAINTING

9

- CORROSION RESISTANT
- LIGHTWEIGHT
- STRONGER THAN STEEL
- LOW INITIAL COST
- LOW SILHOUETTE
- PATENTED SCROLL DESIGN
- PATENTED AIR SEAL OFF
- CAPACITIES 100-11000 CFM S.P. TO 4"

GALLAHER

The Gallaher Company 4108 Dodge Street Omaha, Nebraska More than 100,000 Gallaher Air-Vans Have Been Installed.

*TM Owens-Corning Fiberglas Corporation





WITH THIS SEAL...

the Barrett SPECIFICATION[®] Roof becomes the first roof ever bonded for 25 years!

Now the pioneer in the bonding of built-up roofs presents another first—the Quarter Century Bonded Roof.

This is the longest roofing guarantee in the history of the industry—a guarantee made possible by the proud record of the "SPECIFICATION" Roof itself. Since the turn of the century, Barrett "SPECIFICATION" Pitch and Felt have piled up phenomenal longevity records on the leading buildings of America.

The best test—actual performance—conclusively proves that pitch provides the best weather protection for flat roofs. Asphalt absorbs anywhere from two to seventeen times more water than does pitch. Where prolonged exposure to water may be expected, as on flat roofs, pitch is always the expert's choice.

A system of improved quality controls is now used in the manufacture of Barrett "SPECIFICATION" Pitch and Felt, virtually eliminating the possibility of materials failure. Specify the built-up roof that is now guaranteed for five years longer than any other . . . the roof that has always been famous for outliving its bond. The Barrett Quarter-Century "SPECIFICATION" Roof.

40 Rector Street, New York 6, N. Y.



MODERN Towne Motel in Seattle...

PHOTO COURTESY UNIVERSITY ENTERPRISES SEATTLE, WASH.

selects MODERN montgomery[®] passenger elevators

The 150 ft. per min. Montgomery hydro-electric elevators with selective-collective duplex operating system chosen for this newest of motels assure many installation and operation economies.

Requiring a minimum of space — costly penthouse construction is eliminated. Operation is smooth and effortless — quiet with a minimum of vibration.

For the most efficient elevators for the job, be they passenger or freight, consult with a Montgomery representative. See the yellow pages of your phone directory.







When you're faced with the choice of specifying a boiler which is oversized for initial steam heating requirements or one which won't have the reserve capacity to heat possible future additions, the best solution is a switch to Reznor gas unit heaters. As a building grows, a Reznor heating system grows with it, easily and efficiently. As more space is added, more heaters can be installed. It's as simple as that.

FLEXIBILITY is only one of many reasons why Reznor gas unit heating is right for so many of your commercial and industrial jobs. Ask your Reznor distributor for the complete story or write for your copy of "Modern Heating".



Reznor Manufacturing Company, 40 Union Street, Mercer, Pa.

FORUM has the largest circulation in its field

Here are the facts.

Latest available figures—Publisher's statements to the Audit Bureau of Circulations show the following paid circulation averages for the first six months of 1958:



FORUM's circulation leadership isn't new; it has led the architectural magazines in circulation ever since 1935.

Twenty-three years of continuous leadership is no accident



NEW ADDITIONS TO THE FAMILY OF BUILDERS' HARDWARE SPECIALTIES



GJ 32 . GJ 33 Roller latches designed to fit cylindrical lock cut-out in metal doors. Made non-template or to template.



GJ 235 . GJ 245 Three-way cabinet latches. Lowpriced to meet limited budgets. 2" long and 1-9/16" long bodies in tumbled finish bronze or in chrome.



GJ F 40M

Holder-bumper with lever for setting nonhold-open as bumper only when desired. Made of bronze or brass. Meets Fed. Spec. No. 1168.



GJ 555 . SECURITY

Strong, inexpensive holder with 3" floor clearance. Made of Helichrome iron, sprayed finish.



GJ WB 50 Tamper-proof wall bumper with no visible screws. Ideal for schools and institutions. Made of cast bronze. Aluminum finish available.

GJ 30G . GJ 31G Roller latches designed for mortise template to meet Fed. Spec. FF-H-106a. Made non-template or to template.

write for details and templates on any GJ device



4422 north ravenswood ave. . chicago 40, illinois

three progressive

select MUELLER BRASS CO. *Streamline* copper tube and fittings for three magnificent new buildings

There are many good reasons why leading architects and builders everywhere are specifying STREAMLINE copper tube and solder-type fittings for modern construction piping. They know that an all-copper plumbing system gives a lifetime of dependable service. Valuable floor space is increased because copper is compact and requires less room to install. Copper tube and solder-type fittings are lighter in weight, easier, quicker to assemble and solder, which lowers plumbing costs. The smooth interior bore is rust, scale and corrosion free . . . which permits the clean, unrestricted flow of liquids with minimum friction-loss. This actually reduces the work-load on circulating pumps, and often allows the use of smaller capacity units. You, too, can take advantage of all of these desirable features at no extra cost . . . by specifying the best . . . copper tube and fittings that bear the tradename STREAMLINE.



25 YEARS OLD and still like new!

The giant new Milwaukee County General Hospital was designed by Schmidt, Garden and Erikson, architects, Chicago, in association with Brust and Brust of Milwaukee. Mueller Brass Co.'s STREAMLINE copper tube and fittings for all plumbing and heating were installed by Wenzel and Henoch Company, Milwaukee. 25 years ago, copper tube and fittings were installed in the Civic Auditorium in St. Louis, Missouri. In January, 1958, a section was removed from the line for inspection and found to be still like new!... Positive proof of the durability of copper.



A complete line of tubing, valves, supply and drainage fittings for plumbing and heating are available from Mueller Brass Co.

architects...





STREAMLINE tube and fittings were used throughout the new St. Francis Hospital in Milwaukee, Wisconsin, for all supply, waste and vent piping. Francis S. Gurda A.I.A. was the architect and plumbing was installed by Joseph Wittig Company.

Architects Grellinger and Rose of Milwaukee designed the Dominican High School, one of the newest schools in Whitefish Bay, Wisconsin. STREAM-LINE copper tube and fittings. were installed in this building by Joseph Wittig Company.



This new cast spandrel serves many purposes: it acts as a stiffener for the curtain wall frame, assures flatness without bracing, and uses a **cast-in sill member** to accommodate fixed or operating windows. Cast in aluminum, this panel permits added dimension or **texture for shadow**, polishing or **color for contrast**; and, low pattern costs allow individual expression. Although framing details vary according to structural requirements, **cost is competitive** with custom metal wall construction. **Let Michaels show you** how the "Structural Diaphragm" principle in metal curtain wall can help your building. For complete technical data and construction details request CWA·5·A.

THE MICHAELS ART BRONZE CO., P. O. BOX 668, COVINGTON, KY .; PLANT, OFFICE: ERLANGER, KY.



Rigidly pre-tested, this aluminum pivoted window was designed for monumental construction. Write today for complete construction details of VPA-1, see Sweet's Architectural File 3a/Mic.



FORUM

EDITOR-IN-CHIEF: Henry R. Luce EXECUTIVE ASSISTANT: Albert L. Furth PRESIDENT: Roy E. Larsen

EDITOR Douglas Haskell, AIA

MANAGING EDITOR Edgar P. Smith

EXECUTIVE EDITOR Joseph C. Hazen Jr., AIA

ART DIRECTOR Paul Grotz

ASSOCIATE EDITORS

David Allison, Peter Blake, AIA, Russell Bourne, David Carlson, Frank Fogarty, Jane Jacobs, David G. McCullough, Walter McQuade, AIA, Richard A. Miller, AIA, Richard Saunders, Ogden Tanner, Stephen G. Thompson

ASSISTANT TO THE EDITOR Mary Jane Lightbown

RESEARCH STAFF

Mireille Gerould, chief; Mary Ann Hill, Joan Mebane, Kip Mueller, Anne Peyton, Mary Elizabeth Young

ART STAFF

Ray Komai, associate art director; Martha Blake, Charlotte Winter, associates; Peter Bradford, Frank H. Medina, assistants

EDITORIAL ASSISTANTS

Anne Le Crenier, Henry Martin Ottmann, Ann Wilson

CONSULTANTS

Miles L. Colean, FAIA Carl Feiss, AIA Lawrence Lessing

PUBLISHER Ralph Delahaye Paine Jr.

GENERAL MANAGER Charles B. Bear

ADVERTISING DIRECTOR S. C. Lawson

ASSISTANT TO THE PUBLISHER John Fistere

Published by TIME INC.

Editorial

Mr. Mason's opportunity

Norman Mason, the popular 62-year-old former lumber dealer and head of FHA, who has replaced Albert Cole as administrator of the entire Housing and Home Finance Agency, may well be in a happy position to influence the success of the federal government's urban renewal program. At the moment, all the auguries for that program appear bright. Congress may well give URA more funds and a longer authorization period this year than ever before. The movement to rebuild America's cities with the aid of so-called Title I funds is, after nearly a decade, getting off the ground, and Mason, if he will, can figuratively put the program into orbit.

But if he is to do so, Mason will have to transcend his background, which is narrow and specialized. Without demeaning in the slightest his impressive administrative talents, it must be said that urban renewal is a much more complex problem than he has hitherto faced. And, much pioneering still remains to be done.

FHA, in which Mason has scored to date, is a politically popular and almost universally accepted institution. Its function is clear-cut and, thanks in part to Mason's own streamlining of procedures and updating of standards, its operation is smoothly routine. But at FHA, the "customers" are the same people who were Mason's customers at his Chelmsford, Massachusetts lumberyard: the home builders, a single group.

In urban renewal, on the other hand, the "customers" are complex cities, and these cities are now facing problems of awesome magnitude. To date, urban renewal has hardly touched them. The need for decisive action is great, especially after the slowdown in processing new applications, caused by congressional failure to provide new funds for renewal last session.

Mason, in implementing the renewal program, therefore should seriously consider taking action on four fronts:

▶ The so-called "workable program" requirement, which was designed to ensure that federal aid should be contingent on whether or not a city had its own effective program for slum prevention (and which was incorporated in the housing laws in 1954), should be enforced more effectively through regional offices of HHFA. In present practice it is a farce—any city can usually qualify for a grant if it merely promises to do something about planning a workable program.

▶ Projects seeking federal aid should henceforth be screened more carefully on their merits. No matter how liberal Congress may be, there will be more requests for aid than aid available. HHFA is obligated to look hard at particular applications to see whether they fit the "spirit" as well as the basic objectives of present renewal laws.

After a project has been screened and the community's workable pro-

continued on page 93

mpressively modern ...



East Ohio Building, Cleveland

10 Lafayette Square Building, Buffalo

and HAUGHTON Automatic (Operatorless) Elevators will help keep them that way!

These outstanding additions to the nation's skyline will have the most up-to-date type of electronically controlled elevator systems, keyed to the age of automation.

Cleveland's distinctive new East Ohio Building will have comprehensive automation applied to its eight Haughton Automatic Elevators...to keep service in step with existing traffic demand at all times. The magic of an electronic computer system makes this possible... doing a far better job than the best human starter.

Buffalo's imposing new Tishman office building at 10 Lafayette Square will also be thoroughly modern with electronically controlled Haughton Automatic Elevators for highest efficiency in handling the anticipated heavy building traffic. Four of the five elevators in the building will be of the high-speed operatorless type, serving 20 floors.

Other features in these Haughton installations are equally advanced! The car interiors styled with soft lighting and stainless steel operational fixtures...safety improved over operator-controlled cars...and Haughtonengineered dependability throughout. Let Haughton help you find the modern answer to your elevator problems.





Executive Offices and Plant—Toledo 9, Ohio Factory Branches from Coast to Coast to Serve You 24 Hours A Day

Editorial continued

gram found acceptable, funds should be allocated on a first-come firstserved basis. The present emergency formula, which allocates funds to cities on a per-capita basis, should be eliminated, so that a key project in a small city which may require more than the city's total quota of U.S. funds can be adequately supported.

▶ Renewal projects will succeed or fail in almost direct ratio to the adequacy of the community facilities within them. Federal aid should go to those projects which most conscientiously provide adequate community facilities within the "predominantly housing" limitation.

Mason comes to his new post at a time when many U.S. cities are beginning to act decisively on the renewal front. If he brings to his new responsibilities the vigor he gave to his job at FHA, the cities will have gained a valuable ally in the right place.



Highway borax

Across state after state, the broad new ribbons of concrete and asphalt sweep off toward the horizon, flowering into cloverleaves, curving through mountains, leaping across rivers. Yet within the grand and essentially graceful framework of our new limited-access highway system, many of the service structures and fittings look as out of place as Grand Rapids furniture in a sleek modern house. Bridges and overpasses, for instance, are often magnificent in their simple, arching strength-until the eye lights on a small, awkward attempt at "art" in the detail of a railing or a buttress. Some of the new toll booths look more suited to repelling an armored division than to expediting holiday traffic. Even the shiny new light standards, signs, and other paraphernalia, particularly around interchanges and service areas, echo the visual confusion of older highways.

The most incongruous notes, however, are struck by the service buildings. On the new Connecticut Turnpike, for example, state-built restaurants and gas stations are lumpy little piles of stone, metal, and glass, set off by one of the most bewildering arrays of flagpoles, vent stacks, chimneys, fans, and general claptrap ever to grace a "functional" building (photo above). In Ohio and other states some highways favor the early American style, with a cupola on top, a picture window in front, and all slightly out of scale.

Surely the new public architecture used by mounting millions of motorists deserves something better than Colonial cuteness or sewageplant Modern. With talented design help, it might capture some of the sweep and fun and order of the big new road itself. END



Criticism

The importance of good connections

A new classroom addition at the University of Pennsylvania shows how a building can be fresh and vigorous in itself, yet fit in well with others. A study in "articulation."

BY OGDEN TANNER

Just off 33rd and Walnut Streets in Philadelphia, on the University of Pennsylvania's venerable, brown-hued campus, a small new laboratory-classroom structure sets a thoughtful example in the art of putting buildings together—and relating them to others. The new wing of the Moore School of Electrical Engineering, by Architects Geddes, Brecher & Cunningham, is an unusually strong, well-knit composition, much more so than its traditional neighbors. It is all the more remarkable in that it is also a good link between them, a much better one, in fact, than either a pallid imitation or a sleek modern nonentity. Like any strong performance, of course, it has its debatable features, and something can be learned from these as well as from its more obvious successes.

The new addition is built across what used to be a minor, block-long street on the eastern fringe of the campus, just up 33rd Street from Franklin Field. To its left is the Towne School for various engineering faculties, a turn-of-the-century Jacobean pile which gains a certain elegance from the sturdy, well-spaced, and simply ornamented openings that pierce its bearing walls (see lower photo, opposite page). To its right is the Moore School itself, a typical late twenties' effort in brick and concrete frame, originally built as a factory for the manufacture of musical instruments and still suffering from a discordant multitude of window panes. Between these two generations, the new Moore annex stands out nicely as a third generation, clearly suggesting its interior functions behind the strong bones of its newer concrete framing system.

The new structure is a striking example of the architectural principle of "articulation"—the distinct and separate jointing of elements to form a coherent whole. (The importance of clearly showing the joints, as they are shown in the human body—for example in wrists and ankles—is especially well taught in the architectural school of the University of Pennsylvania, on whose faculty these architects serve.)

Drama by setback

SUM

The first articulation is a very major one in the siting: rather than join their new building with the others right on the street line, thus inviting direct conflicts in scale and style, the architects elected to set it back some 25 feet from the sidewalk. The small politeness of this setback creates a welcome change of space for the passer-by, in a manner that might well be used more often on built-up city streets. It also allows the older buildings to form a deeper and more dramatic frame for the new one. And, as a practical matter, it sets the new building's central corridors far enough back to join the old school at a more or less central circulation point.

In a second articulation, the beginnings of these corridors, along with the new building's elevator and mechanical shafts, are grouped in a brick-faced exterior core, whose solid concrete shear walls act to brace the skeleton of the building itself. This leaves the main floor area free of service shafts so it can be aranged or rearranged at will. It also reduces the area of contact between the old building and the new, and at the same time lessens joining costs and loss of light to older classrooms. Further, the core takes care of ramps and steps between the floor levels of high-ceilinged older classrooms and lower-ceilinged new ones, permitting four new floors of daylighted space opposite the older building's three plus basement.

Being windowless, the core also provides a narrow neutral ground, or visual buffer, that avoids any direct conflicts of cornice levels and window sizes between the two buildings. To make it neutral in material as well as form, the core is veneered in the same Flemish bond with dark header bricks used on neighboring buildings and elsewhere on campus. As a matter of clear expression, there is some confusion in the idea of disguising concrete with a dissimilar material, and what is actually a structural brick pattern at that. Also, the thin white line running down the cornice edges of the old building marks no real boundary at this point, and could have been left off without any great loss.

At the left side of the new building, the stairs and washrooms are removed from the main interior spaces as ducts and elevators are on the other side, and placed symmetrically in another brick-veneered concrete core which butts against an older two-story



against an older two-story addition to the Towne School. At first glance, this might imply a similar working connection. Actually, these two schools have little in common, save for one emergency door between them at the first floor. Above the second story, moreover, the new outside core is left grabbing at thin air, creating

a somewhat unhappy gap. Given a less narrow, broken-up site, it might have been visually better to have attached the new wing more emphatically to its real parent, not touching the Towne School at all, or to have gone to the other extreme and fully closed the gap, functionally as well as visually, between the two schools. In either case, it might have been pleasant to have introduced an opening of some sort through the site to the old street and main campus at the rear, relating the courts newly created in front and back with a pedestrian passage like that of older college archways.

Character in concrete

Whatever fine points may be argued about the new building's generally excellent relations with its neighbors, there is little doubt it is distinctive in itself. No mirror-faced modern abstraction, it has a richly shadowed personality of its own, made all the more dramatic by its neutral brick sidepieces. Six white columns, clad in precast concrete, support broad spandrel beams, whose deep channeled shape gives the building much of its vigorous character. This channel shape marks on the exterior not only the actual line of each floor slab, but also the line of the ceiling considerably farther down, with a completeness of expression that is rarely found in modern



A clear link; two debatable details.

ARCHITECTS: Geddes, Brecher & Cunningham ENGINEERS: Dorfman & Bloom (structural),

J. P. Hartman (mechanical, electrical),

Bolt, Beranek & Newman Incorporated (acoustical consultants). GENERAL CONTRACTOR: Joseph R. Farrell, Incorporated. curtain wall construction. (In gaining their deep channels, the architects may have gotten themselves a pigeon and soot problem, like many historical buildings, but these things have been overcome. Within the structural pattern, window openings are squarish—9 feet wide by 9 feet 8 inches high echoing the solid proportions of the older buildings at right and left. Brown-tinted glass from floor to ceiling, set off by slim, bright, salmon-colored sash, makes a lively contrast with the white structure.



Each opening is divided by a horizontal rail into a good 1:2 proportion, and is further subdivided by a vertical center mullion, and by elegantly proportioned side vents well-located for individual control of fresh air beyond that provided by the me-

chanical air-supply system. At the corners, the rows of windows are not abruptly terminated by heavy columns, but nicely turned around a slim steel mullion. Here, too, the channel beam is clearly expressed in profile, giving the observer an added feeling of three dimensions.

Unlike many modern buildings, whose curtain walls seem like endless patterns suddenly cut off, this one makes a good, old-fashioned, constructed ending against the sky. Precast panels form a parapet which extends slightly above the column tops, giving the columns a finished look and the building

a notched silhouette that recalls the fortress crenellations of older buildings on campus. The lower part of the street façade, however, is not quite so successful. In gaining fully daylighted classroom space on the lowest or basement floor, the archi-



tects lost the chance for a solid base comparable to the top, with the result that the building gives the uneasy appearance of rising from, or sinking into, the ground behind its shallow light court. This movement is partially counteracted by the low wall in front of the court, notched in the same rhythm as the roof line. However, being separated from the building itself, being built of the same "neutral" brick as the building's side panels, and being topped by only a thin white cap, the wall is not quite strong enough as an architectural device to overcome the sinking illusion completely. In contrast, the rear facade of the building sits on a definite, rugged base, which fronts the upper part of a windowless auditorium half-buried in higher ground at the back. Here the composition has a clear beginning, a middle, and an end. Here, too, the "alley" character of the old street in back has been nicely softened by trees and a low length of hedge in front of a service entrance at the left.

The articulate exterior of the new addition stems largely from a well-integrated interior. Each of the



A well-turned window; a well-profiled beam.



A well-defined base, and a touch of trees.



Ceiling structure as decoration.



A clear meeting of many parts.

four floors is conceived as a 50 foot by 60 foot clear space, uninterrupted by interior columns, so that classrooms, laboratories, and offices can be arranged and rearranged at will as space needs change. The floor structure itself is a complex affair consisting of a heavy concrete grid, surmounted by a forest of short posts set on the grid intersections. These posts, in turn, support a 4-inch floor slab above. All of this is framed within the big channel-shaped edge beams, which stiffen the floor frame and transfer its weight



to the peripheral columns. The 14-inch clear space between the grid and the slab above allows ducts and wires to be strung through between the posts in all directions from their point of origin in the service stack. The great depth of the concrete grid (1

foot 10 inches) provides cofferlike recesses concealing bare lights and air diffusers wherever they are needed. Poured around overturned cardboard boxes as inexpensive and easily removable forms, the grid is left unfinished except for a coat of white reflective paint. Lights, which are placed in alternate coffers throughout the building, form a striking checkerboard pattern easily visible on the exterior—an expressive display but perhaps a little too strong a pattern as a constant environment inside. It can, of course, be quite easily changed.

At the outside wall, columns are mainly inside the glass line, protruding just enough beyond the beams on the exterior to give the desired shadow lines. Between the columns, finned convector units are neatly suspended to take the chill off windows and act as guard rails a few inches from the glass. Under these convectors are hung either storage shelves for books and equipment, or simple perforated panels to protect the lower window.

Finishes inside continue the exterior's unslick, and quietly handsome, approach. Partitions of simple concrete block, to reduce noise between rooms of varying functions, are painted a sturdy battleship gray; vertical mortar joints from floor to ceiling at intervals prevent cracking resulting from deflections in the floor frame, also permit clean removal and relocation of partitions when space needs change. Doors are of natural Philippine mahogany plywood; planks of the same rich wood are used at each end of the building for corridor and washroom ceilings and the underside of stairs, where they echo the rough pattern of form boards left showing on bare concrete walls.

Inside and out, the building shows a rough honesty of approach. Each structural part comes together with its neighbor, unconcealed and largely

unblurred, in an attempt to reveal each part and the function it performs. The handsomeness of the building derives not from sleek machine finishes, but from sturdy proportions and rhythms of structure, and simple, natural colors. As architect Louis Kahn has said, architecture "starts at the joint." This building makes a good start indeed. END




A glass-walled lounge above a creek valley connects the rectangular school building with the hexagonal synagogue and chapel.





Flexibility on a grand scale

On high holy days the seating capacity of the proposed Temple Israel in suburban St. Louis will be doubled—to 2,000 —yet no member of the enlarged congregation will be farther away from the altar than those in the regular sanctuary. This feat of flexibility is accomplished by designing the sanctuary and auditorium as two hexagons placed point to point and separating them with a diagonal partition that drops into the floor to combine the two spaces. Combined, both spaces focus on the central altar (plan, left).

Around this spacious two-story room

(215 feet long and 95 feet wide) is a 32-foot, one-story band of lobbies, offices, and service facilities, which complete the synagogue proper. To the rear is another hexagonal building a small, 275-seat chapel for weddings and funerals—designed on the same 9-foot triangular module (the module is composed of 16 of the small triangles shown on the plan). And to the west is a three-story rectangular school building for 500 pupils, connected to the synagogue by a glass-walled lounge bridging the creek valley which bisects the heavily wooded 24-acre site. The concrete structure of the buildings is as notable as their design. Over the large meeting rooms and the chapel are roofs composed of thin-shelled concrete pyramids set over a triangular grid of beams. And, over the school building is a series of thin folded concrete roof slabs. The jagged roof silhouette reaches a climax in the hexagonal lantern of blue glass over the altar. Walls will probably be precast concrete.

The architects and engineers of this highly imaginative project are Hellmuth, Obata & Kassabaum, Incorporated, of St. Louis.





Here is an introduction to the biggest craft union in the building industry, the Carpenters, who manage to be, at once, the most hidebound, the most aggressive, and the most congenial unionists in the field. Part I of a series.

The conservative Carpenters

BY RUSSELL BOURNE

"Except for the quality of human frailty," gravel-voiced Carpenter official Charles Johnson Jr. philosophized last month, "there's nothing wrong with the Carpenters' union." Since Johnson is president of the Carpenters' New York District Council and was accused at this year's Senate Rackets Committee hearings of having had enough frailty to accept \$30,000 for mediating labor peace in the construction of the Yonkers Raceway, his analysis is obviously poignant. Human frailty has, indeed, caused much grief to the huge (840,000 members), large-treasuried (\$18 million) United Brotherhood of Carpenters and Joiners-largest AFL-CIO union in the building trades. Carpenter President Maurice A. Hutcheson, for example, is currently under indictment for bribery in Indiana, and the Carpenters themselves have been threatened with expulsion from the reform-bent AFL-CIO.

But, frailty aside, even the union's most severe critics will agree with Johnson that the tautly organized Carpenters, for all their personal rambunctiousness, serve as a stabilizing force in the building industry. One measure of the union's equilibrant influence: with all of New York City's postwar labor difficulties, the Carpenters have not been involved in any major work stoppages. The question remains, of course, whether such stability is healthy. It may really be that this conservatism, this preoccupation with the status quo, is the chief ailment that afflicts the Brotherhood. From the individual worker's point of view, it would seem that stability has some definite disadvantages: Carpenters' wages have increased only 54 per cent since World War II, whereas the wages for the Boilermakers have gone up 59 per cent.

Conservatism is, of course, a natural quality for a proud craft union, descending directly from the medieval guilds. It is the Carpenters' distinction that they have it more obviously than most. They also have all of the other common problems of specialization in building: resistance to technological change; wasteful manpower practices (featherbedding); illegal hiring procedures; autocracy, corruption, and racketeering. The Carpenters are also badly troubled by that most subtle problem of trades unionism, excessive friendliness between employer and union chief. It is this closeness, another "stabilizing" factor, which encourages scandals like the Yonkers Raceway pay-off.

The nimble Carpenters

As individual craftsmen, the carpenters are regarded-both by labor and by management-as seasoned, versatile, and skilled technicians. A New York job captain, gesturing up in the winter sun at his rising, swarming structure, asked: "How many of those guys up there can I count on to know their way around and to do something tough that needs doing whether it's in the contract or not? How many Carpenters do I have here today-that's about how many I can depend on." The Carpenter will, it is true, generally have had more years of steady association with one contractor, will be more experienced in handling the unexpected crises that occur on any job, and will be more willing to take on borderline jurisdictional assignments than members of other craft unions. The Carpenter is no longer the wandering. work-a-day "boomer," chasing the construction rainbow across the country, subject to the whims of the weather and the vagaries of building economics. He is a senior (average age: 43), wellpaid (average wage in 1958: \$3.46 an hour), regularly employed (average months worked: $9\frac{1}{2}$) specialist (for some of the specialties, see frontispiece). These are considerable blessings, and to protect them the journeyman Carpenter, after graduating from the four-year, union-enforced apprenticeship, pays average dues of \$3.50 monthly to the Brotherhood.

Yet, despite the jurisdictional protection he gets for his money, and despite the welfare benefits he receives from his local and his employers (in New York and many other cities, construction contracts generally stipulate that the employer contribute to both the union's welfare and its pension funds), the Carpenter is not entirely satisfied. He receives no vacation pay-except in rare instances. He is still a manual worker in an age that smiles on the more indirect forms of labor. And, upon retirement, he can count on only \$15 a month from the Brotherhood's pension fund and the dubious privilege of going (without family) off at the end of his life to the Brotherhood's \$4-million old-age home in Lakeland, Florida.

He is, moreover, bothered by a nagging worry: more and more construction work seems to lie beyond his or the Brotherhood's control. More and more industrial firms, particularly in the utility field, are building their plants with "maintenance men" who are in their regular employ and who are either nonunion or belong to industrial unions. Similarly, more and more jobs that once specified wood and careful onsite carpentry now call for composition materials and prefabrication.

Still, these are mostly fears for the future. For the present, the Carpenter



Big "Brothers", William Hutcheson (left), who ran the union with an iron hand from 1915 to 1952; has son Maurice (right) who is now president; and Charles Johnson Jr., who bosses the powerful New York District Council.

and his building trades unions colleagues are members of labor's aristocracy, commanding wages 50 per cent higher than those of the average manufacturing worker.

To be sure, this aristocracy is tautly controlled. To the working Carpenter, the voice of the Brotherhood is that of the business agent, a leather-lunged, rules-conscious ex-Carpenter, employed by the local, who comes to the site to make sure no working practices are being violated by the contractor or by men of other unions. The Carpenters' local (of which there are nearly 3,000 in the U.S. and Canada) is composed of Carpenters who share a common subskill such as saw filing, and the locals in each area are brought together by district councils (of which there are 200). The business agent and the shop steward (an on-the-job Carpenter who is paid by the employing contractor) make sure that the members observe all the taboos and jurisdictional policies that have been so painfully worked out in the building trades. And the veteran Carpenter, believing that this protection is worth his dues, is willing to go along with the otherwise distant Brotherhood. whose vagaries he knows only from newspaper headlines.

Partly because of the union's feudalism and partly because the Brotherhood has not gone out of its way to recruit younger men, the new generation has been reluctant to take on the ruggedly demanding life of the Carpenter. The ratio of apprentices to journeyman Carpenters is the lowest one to 23.2—in all the major building trades unions save one (the Painters and Paperhangers).

The aggressive Brotherhood

The primary functions of a trade union are, of course, to ensure equitable wages and working conditions and a

high level of employment for the members. As labor-saving devices and new materials have been developed that seemed to threaten the Carpenters' welfare, the Brotherhood has sought to accomplish its goals not so much by insisting that a needlessly large work force be used (featherbedding), as by expanding its jurisdictional boundaries. When, for instance, metal door frames were introduced to construction in the 1910's, the Brotherhood entered upon a historic tilt with the sheet-metal workers union, with the ultimate result that the Carpenters now put in metal door frames. Their dubious claim to jurisdiction over "everything that is wood -or was ever wood" has been upheld more often than not. Thus, as compared with unions which have had to depend on less progressive methods to keep their members employed, the Carpenters score fairly well on the points of featherbedding and receptivity to new technologies.

On the point of hiring procedures, the Carpenters' record varies greatly from city to city (as do wages-from \$4.20 an hour in New York to \$2.00 an hour in Columbia, South Carolina). But the general practice is that carpenters are sent to the employing contractor after an agreement, oral or written, has been reached between the union and the contractor. And in many cases only union workers are referred. Thus there is, in effect, a closed shop and a violation of the Taft-Hartley Act. This violation, which is committed by all building trades unions, has traditionally been winked at by the employers (who have been able to figure out no better way to guarantee trouble-free hiring procedures) and even by the federal government (which, in times of national emergency, has been equally anxious not to get held up by costly stoppages).

On the subject of hiring practices,

the Carpenters do not score well at all. For example, when Carpenter Glynn N. Osgood of Local 996 (Penn Yan, New York) applied for a job building the Newark, New Jersey shopping plaza, he was turned down by business agent Anthony Schneider. Osgood appealed, and his case eventually came before the National Labor Relations Board. In deciding for Osgood, the NLRB termed the case a typical instance of discriminatory practices in the union.

Corruption has, of course, been the Brotherhood's most publicized failing. Human frailty has, to use Johnson's terms, taken its toll among the Brotherhood. However, a good bit of the misbehavior by the Brotherhood's officials is shrugged off by the rank and file.

Thus the story about a District Council President going south to a Miami conference several years ago and losing \$30,000 in union funds plus a union-bought Cadillac in a gambling casino en route is told with more relish than anger.

Even the tale of how the current president of the Brotherhood, Maurice "The Silent" Hutcheson, paid an incredible \$310,000 in union funds to Maxwell Raddock, associate of many of the more infamous union thugs, for an "official" biography of the senior Hutcheson, is told as something of a gag.

Quite common are stories like the one about Charlie Johnson who, in 1949, tied in with an independent company, Penn Products, as a high-level contact man. The specific services of Johnson would be hard to itemize, but they were, according to witnesses, worth \$19,824 to Penn Products.

Some stories are hard for even the most broad-minded Carpenter to shrug off. There is, for example, the unsolved murder of Carpenter business agent Edward J. Murtha, who was shot on Long Island in 1956. Hutcheson's Indiana land dealings still rankle, even in labor circles. Hutcheson and Carpenter treasurer Frank Chapman bought nine parcels of Indiana land for \$22,500 in 1956, sold them a month later to the Indiana Highway Department for \$101,000. Charged with bribing a state highway official in connection with this case, Chapman, Hutcheson, and a Brotherhood vice president, O. William Blaier, are currently under indictment. And for refusing to tell Congressional investigators all about it, Hutcheson is

in trouble with AFL-CIO President George Meany's Ethical Practices Code.

But these several difficulties-keeping up with the times, illegal hiring practices, corruption-are all surface manifestations of two related and more serious problems: union autocracy and union coziness with employers. Like other craft unions in the building field, the Carpenters have always sought to preserve the class and wage differential between the skilled artisan and common labor. The tendency, thus, has been for the craft unions to become restrictive and hidebound-champions of the status quo. Maurice Hutcheson's father, "Big Bill" Hutcheson, president from 1915 to 1952, bitterly opposed the New Deal. Maurice was equally opposed to the Fair Deal and was an articulate Eisenhower supporter in 1952 and 1956. And proponents of the Brotherhood argue that if the Carpenters had not formed themselves into a highly integrated, respectable body during the early 1900's, they would never have been able to face the rigors of competitive unionism in the thirties and forties.

The organization Carpenters

A bit of dialogue that eloquently expresses the current state of union democracy within the Brotherhood took place at the general convention last year. It went like this:

VICE PRESIDENT STEVENSON: Maurice A. Hutcheson has been placed in nomination as general president of the United Brotherhood of Carpenters and Joiners of America. Do I hear a further nomination?

DELEGATE IRVIN SCHULTZ, Local 668 (timorously): Mr. Chairman... I hope that this convention will nominate someone to stand in opposition to each candidate so that the general board and the officers can be re-elected, and be re-elected with a majority, so that no one can again throw at us that no one has a chance to be nominated or elected. VICE PRESIDENT STEVENSON: If there are no further nominations, the nominations are closed.

Another symptom of the union's autocratic bent is its arrogant attitude toward the AFL-CIO. At last November's Carpenters Convention, for example, Hutcheson's authority to pull the Brotherhood out of the AFL-CIO whenever he wishes was given a *continued on page 204*

Who's who in the building trades

The richest and most conservative segment of the unionized U. S. labor force is composed of the building trades. It numbers 4½ million workers, nearly a quarter of the total U.S. union membership (18½ million). The average hourly wage of these skilled construction technicians is \$3.38 vs. a mere \$2.17 for all manufacturing workers.

The Building & Construction Trades Department of the AFL-CIO has tried to fuse the 18 autonomous, jurisdictionjealous building trades unions into one cohesive task force. But the building trades are made up of so many different elements moving in so many different elements moving in so many diverse directions, that the Department more nearly represents an uneasy alliance than an effective task force. The 18 unions vary widely in size and wealth, and moral values, but ten unions stand out as the muscles and the backbone of the building industry. They are:

► The Carpenters. As the accompanying article reports, president Maurice A. Hutcheson, scion of "Big Bill" Hutcheson, runs the United Brotherhood of Carpenters and Joiners, the biggest construction union in the AFL-CIO, with very little internal interference. The Carpenters' average wage: \$3.46 per hour (this figure, like the others following, is based on July 1957-July 1958 data).

▶ The Electricians. The International Brotherhood of Electrical Workers (which will be reported on in the second article of this series) includes some industrial workers as well as craftworkers, has room for both the sophisticated hi-fi assembler and the lowly production-line worker. It has a membership of 709,000, with 200,000 in construction. Average wage: \$3.68.

▶ The Hod Carriers. These are the strong-backed workers of the building industry, the men who dig and wreck, and who fetch the material for the more skilled artisans. Their official name is International Hod Carriers, Building and Common Laborers' Union of America. Membership: 465,923. Average wage: \$2.58.

▶ The Painters. Needed as much now as ever, the 217,000 unionized painters are prospering, as is their Brotherhood of Painters, Decorators and Paperhangers of America. Average wage: \$3.26. Despite this prosperity—and not unrelated to it—the Painters have the lowest ratio of apprentices to journeymen in the building trades (one to 28).

▶ The Plumbers. Former stamping grounds of AFL-CIO president, George Meany, the United Association of the Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the U.S. and Canada, is still influential. Membership: 243,763. Average wage: \$3.71. ▶ The Bricklayers. Once a stronghold of reaction in the building trades, the Bricklayers, Masons and Plasterers' International Union of America is now more open to new ideas and methods of brick construction. Its membership is fairly constant at 150,750. Average wage: \$3.87.

▶ The Plasterers. Although the Bricklayers have a corner on the declining plastering trade, the Operative Plasterers' and Cement Masons' International Association of the U.S. and Canada has work-sharing rules that allow its 66,000 members to stay in business. Average wage: \$3.75.

▶ The Lathers. The Wood, Wire and Metal Lathers International Union has been almost as skillful as the Carpenters' union in fighting jurisdictional battles and keeping up with changing techniques. The 16,500 Lathers, for instance, have jurisdiction over the installation of supports for acoustical ceilings. Average wage: \$3.72.

▶ The Roofers. The United Slate, Tile and Composition Roofers, Damp and Waterproof Workers Association has also been fairly successful in finding new jobs for its 19,250 members, having extended its hegemony far enough to include "all damp resisting preparations when applied with a mop, threeknot brush, swab or spray system in or outside of buildings." Average wage: \$3.31.

▶ The Insulators. Traditionally one of the more exclusive trades, the International Association of Heat and Frost Insulators and Asbestos Workers now has 10,000 workers. Average wage: \$3.64.

Of the eight remaining unions, three are handlers of stone, three are handlers of metal (and thus include many industrial workers), and two deal with a less tangible but nonetheless vital quantity: height. They are the International Association of Marble, Slate and Stone Polishers, Rubbers and Sawyers, Tile and Marble Setters Helpers. and Marble Mosaic and Terrazzo Workers Helpers (for all those names, only 8,200 members), the Journeymen Stone Cutters' Association of North America (1,900 members), and the Granite Cutters International Association of America (4,000 members); The International Association of Bridge, Structural and Ornamental Iron Workers (146,918 members), the International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers (150,750 members), and the Sheet Metal Workers' International Association (50,000 members); the International Union of Elevator Constructors (9,240 members) and the 200,000 highly paid members of the International Union of Operating Engineers (crane operators may earn \$14,000 a year).



Canada's capital city has a new municipal center that tries to establish a modern image of government character.

Ottawa's modern city hall

BY PETER BLAKE



Ottawa's first city hall was built in 1848, when population was only 7,500.





Second hall burned down in 1931, had been built in 1875 for city of 25,000.

< ((()

Site of new city hall (opposite) is an island in the Rideau River, at the head of Rideau Falls, on the outskirts of Ottawa. Five major Canadian cities recently decided they had grown so large that they needed new city halls. Ottawa was the first to complete its new building (opposite). And if the others (Toronto, Winnipeg, Edmonton, and Hamilton) measure up to the standard set here, Canadian civic architecture will have done itself proud.

Not that the Ottawa city hall is particularly startling in its design; it was not meant to be. For city halls, unlike automobiles, are built for *slow* obsolescence. They are not meant to reflect the latest fads—which may look sadly dated tomorrow, when the fad has fallen flat. City halls *are* supposed to weather and age well; and Ottawa's city hall is a thoughtful attempt at achieving a quality which modern architects often find so elusive: permanence.

The price of permanence

To achieve permanence takes a little time, and it took a little time to build this city hall. First, there was a competition (in 1955) for a building on a site in the center of town; Rother/ Bland/Trudeau, of Montreal, won it with a design very similar to the one finally built. Then the site was changed to a lovely island in the Rideau River on the outskirts of Ottawa (see site plan, opposite page). The architects adjusted their scheme, managing to retain most of the principal features of the original project. There were the usual budget problems (the cost had to be kept down to \$19 per square foot), modern art problems (e.g., can the public really be damned in a building put up by and for it?), problems of detailing and finishes. But 18 months after construction began, Princess Margaret opened the new, 180,000-square-foot city hall and the mayor said that the citizens were proud of their new building.

They have good reason to be. For the building does three things which any good civic building should do: it occupies its beautiful site in a dignified manner; it expresses, through the arrangement of its principal forms, the meaning of city government; and it suggests a certain timelessness in its finishes and details that sets it apart from most run-of-the-mill office buildings and industrial structures.

Dignified setting

Two factors, in particular, give this building dignity: its placement on a pedestal (which houses a 55,000-squarefoot, 150-car, underground garage); and its symmetry. The pedestal-in-apark is, of course, a familiar classical idea. It is always impressive-though it may, occasionally, become oppressive if the pedestal appears too high to pedestrians walking through the park. Here the pedestal is only about 18 inches above the natural grade on the approach side, and it looks fine. (Another problem with buildings on high pedestals is that they may appear standoffish, which is no way for a civic building in a democracy to look. This, too, was avoided here.)

The symmetry of the composition is almost as successful—at least until you enter the lobby, where it breaks down (see plans, next page). In a glass-walled space such as this lobby, the stair towers, service areas, and other enclosed spaces inside the glass ARCHITECTS: Rother/Bland/Trudeau STRUCTURAL ENGINEERS: deStein & McCutcheon MECHANICAL & ELECTRICAL ENGINEERS: Wiggs, Walford, Frost & Lindsay GENERAL CONTRACTOR: Perini Limited

are quite visible from the outside and might have been considered more carefully in the design of the exterior.

Symbolic massing

In the arrangement of the two principal blocks of the building, the architects tried, and generally succeeded, to reflect the democratic processes for which the building was designed. There is, first, the small, 5,000-square-foot council chamber block; and, behind it, the eight-story-high, 120,000-squarefoot office building for the day-to-day operations of city government.

The smaller block is, of course, a more important symbol than the office tower, and the architects succeeded in making it look so. However, they might have tried to separate the smaller block more sharply from the office slab-a refinement that may have been sacrificed under budget pressure. Still, the main (northwest) facade of the small block is decidedly different from that of the office tower behind it, and its division into three elements-mayor's office, council chamber, and aldermen's offices-is a clear definition of the organizational symmetry of democratic city government. The balcony is for royal appearances on special occasions.

Timeless details

In deciding upon finishes and details for their city hall, the architects stuck closely to a kind of "conservative modern" tradition. Exterior wall finishes are limestone and will, presumably, grow old gracefully; windows are framed in aluminum box sections, and bay-sized units were fully preassembled and sealed in the shop before being installed on the site. In the important areas inside the building, there is restrained walnut or oak paneling for the walls, and marble or mosaic for floors; less-expensive materials were used elsewhere. Hardware and special metalwork is conservative also, in the manner of "stripped classicism."

None of this is lacking in good taste, but some of it might have been distinctly better in design (e.g., stair and balcony rails, some lighting fixtures and flooring patterns, seem a little clumsy). Still, the architects were obviously concerned with staying away from the kind of slick detail that suggests commercial architecture; and, if they did not always come up with a modern equivalent of "timeless design," it was not for want of trying.

The only serious flaws in detailing seem to have occurred in the design of the typical bay of the office tower. To start with, there is no attempt made to emphasize either the vertical or the horizontal "bones" of the structural skeleton—either columns or beams. Obviously, the architects decided that since both were in the same plane, they should be left that way on the façade; however, the result is rather flat and dull, and a vertically accented grid would have created a still more effective contrast between the low council chamber block and the tall office tower.

Second, each structural bay has been endowed with what appears, from the distance, to be a limestone-faced balcony. This turns out to be, in reality, a facing slab for the diffusers used to air condition the office space—i.e., a prominent façade expression of, to say the least, a rather unimportant piece of mechanical equipment. These repeated facing slabs unfortunately dominate the entire façade pattern; moreover, they suggest a series of little balconies (which, in turn, suggest small, individual apartments behind each balcony). As a result, the character of the tall façades is quite residential and there is no hint of the large secretarial pools, etc., actually located behind the façades.

Here, again, the architects were trying to get away from the monotony of the glass-and-metal grid which spells "commercial office building" to Canadians as it does to everyone else.

Modern art

The sculpture, mosaics, plaques, and other symbols that are the sine qua non of civic buildings were commissioned directly by the architects. Considering some of the "decoration" that adorns more famous public structures like the U.N. headquarters buildings, the Canadian architects used discrimination and considerable daring. The abstract, welded aluminum fountains (page 111) by Louis Archambault are pretty heady stuff in the face of the usual public criticism of anything not mounted on horseback, and the redesigned coat-ofarms of the City of Ottawa by Art Price (opposite) is a nice and fresh variation on an inherently trite theme.

Above all, however, this building represents a serious attempt to achieve a new kind of "government character" without ending up in Disneyland symbolism. If the Ottawa city hall appears a little heavy-handed or old-fashioned in some of its details, it should be remembered that this is just a beginning in a largely uncharted field.



PHOTOS HUGH ROBERTSON-PANDA





SECOND FLOOR

RECEPTION AND EXHIBITION

MAIN FAÇADE of city hall expresses central location of council chamber flanked by the mayor's office (left) and the aldermen's suite (right). Office space is contained in an eightstory-high slab behind the councilchamber block. Top floor of slab has a staff cafeteria fronting on a long balcony. City's coat-of-arms (shown in detail below) was redesigned by sculptor Art Price.









Details and finishes are simple and conservative.

CITY CLERK'S DEPARTMENT is located on the main floor, just off the entrance lobby. Its counters are framed in aluminum extrusions and faced with slabs of marble. This area is used by the general public and was designed as a glass-enclosed extension of the paved platform on which the building stands.

COUNCIL CHAMBER is a dignified space two stories in height, and paneled with walnut. The wall pattern is created by regularly spaced, soundabsorptive recesses in the paneling. Nine plastic domes set into the roof provide daylight. Like the rest of the building, this area is fully air conditioned by a high-velocity system.

MAIN ENTRANCE LOBBY is dominated by a spiral stair of polished, reinforced concrete. It leads up to the level of the council chamber, mayor's office, and aldermen's suite. The mainfloor walls are finished with white marble, and the columns are encased in polished limestone.

No.



TYPICAL BAY of the office block consists of limestone-covered columns and spandrel beams around an aluminum-framed window. The projecting slab of limestone in the center of each bay covers some of the air-conditioning diffusers inside, and looks from a distance like a balcony parapet. All the glass is 1/4-inch thick gray plate with heat-absorbing and glare-reducing qualities.

Sheet aluminum abstractions by sculptor Archambault stand in circular pools on either side of council chamber.





1. Parking entrance of Jordan Marsh faces Biscayne Bay.

Six stores of distinction:

Glass showcase in Miami

2. Palm trees, planting strips, and a canopy help moderate Florida's intense sky glare.





When staid old Jordan Marsh, of Boston, built an outpost in Miami in 1956, the management thought it would need about 250,000 square feet of space. But the possibility of growth in the hot Florida sun impelled the company to put enough extra steel in the columns to go up a little if necessary. After only two years, Jordan Marsh called the contractor back and added two extra floors, at a cost of \$3 million on top of the original \$7 million. The original sales goal, estimated at \$20 million, was reached so fast that store executives think now that they can go up to \$35 million within the next few years. After that? No more additions, says the board chairman, Donald K. Miller; additional space downtown would be overloading the merchandising base, even if the structural steel would take it. The next move will be to suburban branch stores.

Miami's Jordan Marsh, despite its bounding gross, is a meticulously run quality store, not a merchandising mill, and its architecture clearly reveals this. There are a generous parking lot, planting strips (1 and 2), and pool. Outdoors there is also a shaded sitting area where weary pedestrians can relax (3). The restaurant (4) is excellent, and takes full advantage of the site, looking out over Biscayne Bay. Even the elevators are something special (5), built with very wide doors, and a driver's seat on one side for the operator.

Around the perimeter of the store the glass runs from floor to ceiling, 15 feet high, with a canopy at the 10-foot level seemingly running through the glass to form a sun shield both outdoors and inside (2 and 6). The diffused daylight on both sides of the display windows helps reduce glass reflection. Architect: Weed Russell Johnson Associates; contractor: Frank J. Rooney Incorporated.



3. At the main entry is a sheltered sitting area.

PHOTOS: O EZRA STOLLER; (OTHERS) RUDI RADA



4. Second-floor restaurant overlooks Biscayne Bay.





ELEVATOR OPERATOR'S BOOTH

5. Elevator has operator's booth.

6. Clerestory windows over the canopy pull daylight indoors to help reduce glass reflection.



Japanese department store

Designers passing Takashimaya Limited, a new highprice department store at the corner of Fifth Avenue and 46th Street in New York, are likely to stop and wonder. The store evidently is Japanese; all the fittings and furnishings inside were made in Japan, as was the merchandise. But what about all the modern American display techniques and store-design practices—maximum visibility, linear framing, etc.? There has been an international merger of merchandising minds, for despite its name this shop is actually more surprising in its similarities to its neighbors than in its differences.

But one difference from native New York merchandising practice is visible immediately: the handsome stairway to the mezzanine is placed just behind the plateglass front window whereas most local stores put their stairs in the rear beyond an enticing array of first-floor impulse merchandise. The Takashimaya stair well functions as display space for the entire store, and also provides reception space for shoppers (below). When the store first opened, the arrangement of the movable components inside was part of the orderly architectural design (photos opposite), but these selling counters and displays have since been rearranged more along conventional Fifth Avenue lines. Architects: Steinhardt & Thompson, Junzo Yoshimura; contractor: Charles Herman Contracting Company.



1. Fifth Avenue entrance façade is all glass.



2. Open stair well at the front, viewed here from the mezzanine, acts as a show window.





3. Casework of hinoki wood was made in Japan.



4. Mural by Genichiro Inokuma is olive drab on white.



5. Basement finish, made in U.S., is sitka spruce.



6. Japanese garden near elevator is by David H. Engel.

7. Handsome stairway, made of cherry wood, is silhouetted in view toward the avenue.











SIX STORES OF DISTINCTION

Bazaar in an oasis

Built on a concrete platform at a busy corner in Palm Springs, California, this branch of the J. W. Robinson Company, a West Coast specialty shop, has a two-way policy of visibility. Glass front walls, sheltered by deep overhangs, make the entire interior a showroom (1), enticing the motorist to park and come in. Once he is inside, in the center of the store, a 3-foot-deep clerestory perched on the roof gives him back his view of the mountains, in whose lap Palm Springs sits. The psychology is deliberate. Robinson's wanted to become a part of the sophisticated resort reputation of this famous watering spot, to catch the excitement in the air.

The design methods, besides providing great inward and outward visibility, include a feeling of lightness. The roof is a series of light steel trusses linked in a serrated pattern, and set on lean pipe columns (4). Nowhere does this roof rest on walls, even at the solid masonry rear of the store (2). The walls are faced with a special tile of marble and quartz aggregate, patterned in a horizontal diamond to repeat the rhythm of the gold anodized aluminum fascia.

Inside, shopping arrangements are on the open plan. The air conditioning does not use conventional diffusers; tempered air is filtered into the store through small adjustable slots in the acoustical tile ceiling (3) which acts as a plenum. Architects: Charles Luckman Associates and William L. Pereira; interiors: Raymond Loewy Associates; contractor: Robinson & Wilson, Incorporated.

2

4



Oasis in the suburbs

This really sizable offshoot (184,000 square feet) of Hutzler's Department Store in the Westview Shopping Center outside Baltimore represents the third and latest march into the suburbs by one of that city's oldest and smartest merchants. In character, especially viewed from its macadam meadow of parking spaces (1), Hutzler's suburban oasis seems as closed and settled as Robinson's new branch (opposite page) is open and floating. The reason is that this store is big enough to be a deliberate destination for the shopper when she rolls out of the family driveway, not just a roadside enticement. It contains its own varied world, an ordered ferment of goods in many departments (3).

There are three levels, with entrances on the lower two. Other shops share the second level, so Hutzler's entrances on that level (2 and 4) are more arresting than the lower one (1). This mall floor is the woman's world in Hutzler's, displaying accessories, sportswear, and clothing. Downstairs is merchandise for children, men, and boys. On the top floor are housewares, notions, piece goods, rugs, etc., executive offices, and a restaurant accommodating about 200 patrons. Architects: Kenneth C. Miller and Ketchum & Sharp; contractor: Charles R. Scrivener Company, Incorporated.







20.40

SOFT







Trim drugstore

To distinguish this prescription drugstore in Elyria, Ohio from its garish counterparts, the owner called in a team of architects; they succeeded in giving his establishment (one of a small chain) a strong identity among its haphazard neighbors.

Although this essentially is a bearing-wall structure, with walls of cream-colored glazed brick, it has a disciplined, linear character created by the lightly framed glass display space and entrances, front and back. The long side of the store (photos 1 and 4) parallels a parking space shared by a bank and a supermarket nearby, and a gallery provides a sheltered passage from cars to the front or rear entrance. The framing of this shelter is made of slim, 4-inch-square steel posts, channels, and metal decking—painted soft yellow. The projecting steel beam at the roof line (4) will eventually carry another sign, like that over the main entry (2). Detailing of the building is unusually careful; for instance, a 4-inch notch or setback is left to separate the design from whatever may be built next door.

Inside the store a long, narrow stockroom parallels the main sales counter; downstairs is a warehousing area (for all three Hess & Hess stores) with a mechanized conveyor up to the rear receiving room. From across the street (3) the building stands out on Route 20 like a healthy thumb. Architects: Richard A. Miller and Tibbals-Crumley-Musson; contractor: Elmer Hume Inc.











Rich ticket office

Gio Ponti, Italy's multitalented architect-artist, has never quite embraced the impersonality of the International style, but he is quite willing to shake hands with it. In his design for the new Alitalia showroom on New York's Fifth Avenue, which ignores all the familiar slick merchandising tenets, Ponti hardly got as far as a handshake; although the room is glass-walled, the interior is imported handicraft. Indeed, the tiled contents of this glass-walled room have puzzled many New York designers, who cannot quite understand its gentle, blue-veined quality—but who stop and ponder it every time they go by. To them, it looks more like a stage setting than a ticket office.

The Alitalia office occupies the middle of the new Tishman building arcade (4), and in this favorably shaded location Ponti has succeeded in practically erasing the glass walls by flooding his interior with light. The stocky supporting columns (1) for the skyscraper above he extended and shaped with tile walls by Fausto Melotti of Milan (2). On a geometrical tile floor, custom-designed furniture is arranged down each side, and ceramics by Melotti, Romano Rui, and Salvatore Fiume (3) are spotted here and there. It is a clean, crafty, well-lighted room, and its gentleness in approach may yet prevail over the more muscular merchandising of its neighbors. Associate architect: Freidin-Studley Associates; contractor: Jacob Kotler Company. END







PHOTOS (ABOVE) : MARILYN SILVERSTONN









3

119

ACTION on rental housing

A new report suggests realistic policies to encourage more private apartment construction, thereby helping to erase urban blight. What caused the drastic slip in rental housing construction from about 40 per cent of all housing built in the twenties to its current meager 10 to 15 per cent? And what can be done to stimulate a greater volume of such construction, vital if cities are ever to stem the exodus to the suburbs and the backwash of urban decay?

A new report issued by ACTION (American Council to Improve Our Neighborhoods) goes far to answer these questions in the most authoritative way thus far. The report-Rental Housing: Opportunities for Private Investment (McGraw-Hill Book Company, New York, \$8.50)-was written by Louis Winnick, housing expert, director of research for the New York City Planning Commission, and economic consultant to ACTION's research program. It had the aid and review of ACTION's ad hoc committee on the investor, composed of 15 distinguished authorities representing all shades of opinion in public and private housing.* And it is one of a series of studies for which ACTION got a grant of \$250,000 in 1956 from the Ford Foundation to "provide fresh points of

*Chairman: Joseph W. Lund, Boston, former president of the National Association of Real Estate Boards. Also Catherine Bauer, city planning lecturer, University of California; Ernest J. Bohn, former NAHRO president and director of the Cleveland Metropolitan Housing Authority; Thomas P. Coogan, president of Housing Securities, In-corporated, and former NAHB president; Robert W. Dowling, president of City Investing Company, New York: Allison Dunham, professor of real estate law, University of Chicago; Guy T. O. Hollyday, chairof the Title Guarantee Company, Baltimore, man and former FHA Commissioner; Edward Hopkinson Jr., partner, Drexel & Company; M. K. M. Murphy, president, Home Loan Bank of New York: Clarence J. Myers, president, New York Life Insurance Company: Richard U. Ratcliff, professor of land economics, University of Wisconsin; Dr. Leonard A. Scheele, president, Warner-Chilcott Laboratories; James H. Scheuer, executive committee chairman, City and Suburban Homes Company. Ex-officio: ACTION's chairman Andrew Heiskell, publisher, LIFE Magazine, and its vice chairman for research Ferd Kramer, president, Draper & Kramer, Incorporated.

view to some of the most complex and controversial problems of housing and urban development in America." Rental housing easily qualifies as one of the most urgent and complex of these problems.

The roots of the trouble

Of the many factors that have contributed to the distressed state of rental housing, the ACTION report firmly underlines two basic causes.

The first might be termed the shrinkage of consumer demand for rental housing. This came about through a combination of two forces: the great upsurge in prosperity and the revolution in government-sponsored easycredit mortgage financing of home buying. The former propelled faster a national trend toward owning one's own home, and the latter made monthly payments on a new home in the suburbs, under FHA and VA guaranteed mortgages, cheaper than the rentals required in most new urban rental developments. Superficially, the typical American family voluntarily elected to move to suburbia. ACTION's report, however, has this wry comment: "The power of government to tinker with the price system is such that, if it so desired, it could convert the U.S. into a nation of 99 per cent home owners (there would surely be a few determined if reckless holdouts in the stony fastnesses of Manhattan), but such voluntarism would resemble the right to vote in Totalitaria."

The second big cause of rental housing's distress is a concomitant discouragement of private builders and investors. To an increasing extent, rental housing has been subject to uncodified regulation of a "public utility" nature, while simultaneously being denied the benefits of outright public utility administration. The sour memories of wartime rent controls, though terminated everywhere except in New York, linger on. Wherever FHA today insures mortgages on rental housing, it still insists on playing in its supervisory capacity a role as both a partner of the builder and a species of public service commissioner.

ACTION's report succinctly sums up the builders' complaints: "The FHA regulates cash investments, rents, rates of return, capital structure, accounting procedures, and the more important management decisions of every rental project for which it insures a mortgage. Indeed, FHA's controls extend beyond those of the typical public service commission, since the agency also supervises the design and construction of real estate improvements, sets the maximum rate of interest on debt capital, and even participates as a preferred stockholder in each corporation, with a legal right to unseat the directors of record on its own determination of a breach of contract."

A basis of hope

The ACTION report does not anticipate any mass return to the city or major upturn in rental construction in the near future. Easy mortgage terms for home buying are undoubtedly here to stay, and as long as prosperity prevails, home ownership will continue to be the ideal of the majority of American families. Over the next ten years, however, a gradual increase in rental construction can be expected, and by the 1970's a sustained average of 20 per cent of new residential construction, as against the current level of about 10 per cent, may be rental units, including close-in suburban garden apartments. A number of forces are working in this direction.

Social and demographic factors provide the greatest support for increased future demand in urban rental housing. Young married couples often prefer apartments to home ownership until children arrive, and by 1975 there will be 500,000 more marriages annually than the level of 1955. Elderly couples, who frequently want to move back to the city after their children are grown and married, also will comprise a much greater portion of the population in the 1970's. A recent joint survey by ACTION and FORTUNE revealed that about 15 per cent of the tenants in new luxury apartments in three cities are just such returnees from the suburbs.

Another factor tending to support more rental building in the future is the steady climb of house prices, caused by the growing scarcity and soaring costs of suburban home sites. Under the impact of the postwar home-building boom, the estimated price of sites for new FHA houses rose between 1950 and 1956 from \$1,035 to \$1,887, or 82 per cent. According to a NAREB survey of builders, the average site-to-house cost ratio on new home plots rose from 10 per cent in 1950 to 15 per cent in 1955 to 18.4 per cent by the middle of 1956. Historically, expensive and rising land costs stimulate rental construction.

A package of remedies

Few cities, however, can afford to wait or depend wholly on these longterm trends. Some active stimulation of rental housing is needed if cities are to preserve a sound economic base and reverse some of the drift of the last 20 years with its steady loss of middle- to high-income families to the suburbs and deterioration of district after district into slums. The ACTION report presents a comprehensive package of proposals. These are based realistically on the recognition that the chief stimulant will be some reasonable assurance of fair profit, which for the builder of new rental housing is between 15 and 20 per cent on initial cash equity. Those who think this exorbitant do not take into account the special risks of this type of construction, for, even though two-thirds or more of the costs are met by borrowed mortgage funds, the builder must still make all yearly interest and amortization payments, whether or not his project is making money, must bear all the burdens of management, must meet all the hazards of regulation, rising taxes, operating costs, or other emergency expenses, and run the risk of losing his whole investment if he falls down in any or all of these things. ACTION's chief proposals for action:

Extend FHA aid to higher rent units, for which substantial demand now exists from families seeking luxury or semiluxury housing. FHA's reluctance to enter this market has seriously curtailed city developments, and its rigid adherence to "economy" or nonluxury construction for middleincome families has led to unesthetic and low-quality building that does a disservice both to investors and to renters seeking higher standards. FHA mortgage limits could be substantially increased, perhaps up to the \$20,000 per unit now in effect for single-family homes. (Current limits are \$2,250 per room for garden apartments, and \$2,700 per room for elevator buildings. or a maximum of \$8,100 per unit if dwelling units average less than four rooms in garden apartments, or \$8,400 a unit in elevator buildings. In "highcost areas" such as New York, Chicago, and Los Angeles these limits can be increased as much as \$1,000 per room.) continued on page 208



The venerable Dakota

PHOTOGRAPHS BY GEORGE CSERNA



Gallery

One spring day in 1879, lawyer Edward Clark, president of the Singer sewing machine company, took lunch with a group of his fellow executives and financiers on Wall Street. In those days midtown New York was located at about 23rd Street; 52nd Street, where William K. Vanderbilt was about to build a mansion, was considered far uptown. It was a jocose lunch, but the biggest joke of the gathering by far was Clark's announcement that he had decided to build an elegant rental "apartment" on the west side of William Cullen Bryant's new Central Park—way up on 72nd Street. "West 72nd Street," one of the diners exclaimed, "that's still Indian territory, isn't it? Why don't you go a few blocks more and build it out in Dakota?" "That's a good name," said Clark, and smiled one of his rare smiles.

Two years later, and eight years before either North or South Dakota was admitted to the Union, the Dakota opened its elegant doors. In a day when apartment houses were just beginning to be accepted, the Dakota was New York's most lavish—its site cost \$250,000 and the structure \$2 million. An Indian head was carved on the façade.

The 100-apartment Dakota is still there. It still has the same mahogany woodwork, and the Clark family still owns it. It continues to be beautifully maintained. Its masonry walls and partitions are so thick that it stays cool in summer. In its capacious caverns underground are the same hydraulic elevator reservoirs and the same steam plant that once manufactured heat for buildings for blocks around. The apartments are immense by today's standards, and there is still a long waiting list of eager prospective tenants.

The Dakota's architect was Henry Janeway Hardenbergh, then 32, of New Jersey, great-great grandson of a founder of Rutgers. His style was derived from the various beloved bourgeois styles of the nineteenth century (Victorian, pseudo-Gothic, Brewery Brick), and he later built such imposing structures in New York as the Plaza Hotel, the Waldorf, and the Astoria but none of these were to receive the same loving care over the years as the Dakota. Gone are the beautiful gardens and croquet and tennis courts once maintained in the adjoining block on grounds which are now used for a commercial parking space. But the Dakota still has a moat between it and the sidewalk, and the iron grille to the courtyard entrance closes at midnight; the visitor or resident rings for entrance after that.



Most apartments viewing on Central Park were designed with four bedrooms, one bath (with a wooden bathtub), drawing room, library, reception room, kitchen, butler's pantry, maid's room, and bath. They rented for \$6,000 to \$7,000 per year then—and, remarkably, still do now.



Entrance to the courtyard, with its iron gate open and sentry on duty, gives the appearance of a fortress entry. Inside the court are four separate entrances to elevator lobbies. The structure of this massive building is wallbearing, with steel arches. Shown to the right is a detail of the sidewalk railing.



THE VENERABLE DAKOTA

Two fountains in the interior courtyard serve also as ventilators and skylights for a large basement service space below. Service elevators (the first in New York) were placed between the backs of the apartments (diagram below). Carriages once rolled into the court, but automobiles are barred today.









The Dakota's bedrooms (above) are quiet. Floor slabs are parquet on boards on sleepers over 9 inches of earth (for acoustical insulation) and 9 inches of concrete. Today's tenants include a number of diplomats, publishers, and theater people: e.g., actresses Judy Holliday, Teresa Wright, Ruth Ford, actors José Ferrer, Boris Karloff, Zachary Scott, designer Jo Mielziner, and playwright Sidney Kingsley.



A classic column replaces bearing partitions in the building's largest drawing room (24 feet by 49 feet). This room is in the apartment of publisher C. D. Jackson. Ceilings are 15½ feet high on the first floor diminishing to 12 feet on the eighth. Original detailing, such as the plaster ceiling (right) is in immaculate condition. Above, right, is a detail of one of the laminated sliding doors, showing an original glass insert.







Stairway in the first-floor public hall is typical of the building's richly ornamental ironwork. The building is still heated by the original steam radiators (which, in apartments, are built in under the window sills). It is a two-pipe system, with an added line: under each radiator in the apartments is a pan to catch any seepage, and from the pans a network of drainage lines runs down to cisterns in the basement which also receive roof water. This water originally was used in the building's own steam plant, which is on stand-by status now, and for the hydraulic elevators. Two of the reservoirs for these are shown at right.



Mahogany-finisked elevator cab, installed by Otis Brothers in 1880, is the oldest in New York City. To care for the Dakota there are 52 employees; the building is managed by Horace S. Ely & Company under the careful eye of Matthew G. Ely Jr. Below is a panel typical of the instrumentation in the mechanical rooms in the basement: steamboat character, complete with polished brass.





Here is a refreshing proposal for a new kind of residential district, an alternative to the sprawling, single-family development and the crowded apartment towers of urban renewal projects.

Density by design

BY RICHARD A. MILLER

The disappearance of the open countryside, the sprawl of the suburbs, and the decay of the inner city are all familiar problems in America today. Unfortunately, however, few practical alternatives to suburban sprawl or urban squeeze have yet been devised. Zoning laws, indeed, force suburban lots to ever larger dimensions, thus expanding the sprawl, and urban renewal projects are often crowded with populations more concentrated than those of the slums they replaced, thus forcing the cities to build groups of mammoth apartment towers. The range of choice for the home-seeker is thus becoming increasingly circumscribed. Except for a few old city sectors (like Chicago's near north side), insurance company projects (like Metropolitan Life's Park Merced in San Francisco), and a handful of imaginative urban renewal projects (like the Scheuer-Stevens Area B now abuilding in the Southwest Project in Washington, D.C.), there are precious few "mixed" developments offering a choice of row houses, walk-ups, or "high-rise" elevator apartments.

Long a critic of the sprawl-or-squeeze

How many people per acre?

Sprawling developments of small houses like Levittown, Long Island waste valuable land and destroy rural open space—yet house only 5 to 25 persons per acre of land. **Crowded housing,** like Corlears Hook in New York City, consists entirely of tower apartments because they are the only way to house 500 to 600 persons per acre of land.







alternatives, José Luis Sert, dean of Harvard's Graduate School of Design, last year organized a team of graduate students in architecture, landscape architecture, and city planning to study other possibilities and to test the findings by designing two residential sectors for actual sites nearby. The results, shown on the following pages, offer a new kind of urban pattern in which row houses, walk-up apartments, and "high-rise" elevator apartments are mixed together in clusters much more intensively populated than the ordinary suburb and yet substantially less densely populated than the average urban renewal project.

Of the two sites chosen for the experiment, one was a medium-density slum designated as an urban renewal area between Harvard and M.I.T. in Cambridge, and the other was an undeveloped site 18 miles cut of Cambridge in Billerica, Massachusetts. Surprisingly, the team proposed almost identical residential patterns for the city site and the suburban site. The Billerica site, to be sure, was provided with more open space between the housing clusters, and it was also surrounded with a substantial greenbelt to bring open country within walking distance of the inhabitants and to prevent too-close encroachment of other settlements.

New departures

Each of the 34 architectural students in the experiment (under Sert, Professors Huson Jackson and Hideo Sasaki and visiting critics Alvaro Ortega and Blanche Van Ginkel) developed designs for housing clusters for 1,000 persons in one dwelling type and 5,000 persons in "mixed" clusters. At the same time, the six planner members (under Professor Reginald Isaacs) were studying the governmental, social, and economic problems of residential development in Metropolitan Boston and selecting the downtown and outlying sites against which the team would test its conclusions. After a study of the findings, the team applied the selected housing types to the chosen sites and also designed the shopping centers, schools, and recreation areas needed for a sound community life.

Perhaps the most significant innovation was the development of a novel technique for dealing with housing "density." Today's urban renewal planners almost invariably take the desired population density of an area as a point of departure in planning, but the Harvard group began its plan for the selected sites without any preconceptions of what the density would be. Instead the team started by designing housing units that would answer a variety of typical family needs. Then, with the help of the planners' findings, the individual housing units were grouped as tightly as possible, but still allowed ample space for community needs and open space, for automobile storage, and for sunlight and fresh air for the dwelling units. Only after these requirements were satisfied did the research team measure the population density of the area. The Sert men found that, depending on the size and type of dwelling units used, their density figures stood somewhere in the range of 80 persons per net acre for rowhouse groups and 175 persons per net acre for slab-apartment groups, with

Balanced alternative for Cambridge, Massachusetts provides row houses, walk-ups, and tower apartments in a lively residential sector housing 150 to 175 persons per acre.





the mixed clusters ranging between these two figures. (The net acre measure excludes streets, open space outside residential clusters, and areas used for shopping centers and factories.) Their final conclusion supported exhaustive research done in England in 1943: a density of approximately 200 persons per net acre is the maximum density a well-balanced, well-planned "mixed" development can sustain. This is in striking contrast to the density of development in the suburbs, on the one hand (5 to 25 persons per net acre), and in the average in-city renewal project, on the other, where density often exceeds 500 persons per net acre.

The chief reason for these excessively high urban densities, of course, is that city densities are not usually set by design but by the need to reduce the cost of land per dwelling unit even after a federal write-down. The important question raised by the Cambridge study is whether urban renewal on these sardine terms will halt the exodus from the city. High-density requirements have caused row houses and walk-up apartments to be eliminated in most renewal areas-at the price of desirable family composition. In a very few extremely high land-cost areas (e.g. Manhattan), high-rise densities are, to be sure, inevitable, but too many projects follow willy-nilly the pattern set by these exceptional locations. In most cities, areas can still be found in which land costs are low enough to allow varied, lower-density redevelopment.

The Harvard study is not opposed to reasonably intensive land development. (The Cambridge area would house 30,000 people in the Harvard plan -50 per cent more than the slums now there.) In contrast to the famous dictum of British garden city planner Sir Raymond Unwin ("Nothing gained by overcrowding"), Sert has long believed that something of extreme importance can be gained by crowding: "urban character." Concentration, the right kind of crowding, of residential areas, says Sert, helps save open space and rural countryside in U.S. metropolitan areas. And planned "crowding" makes possible other gains as well (e.g., a pedestrian way of life within the housing sectors and enough customers in one spot for fast, efficient mass transportation). Indeed, the planners were able to reduce the amount of car parking space in the Cambridge renewal scheme to eight parking spaces for ten families (compared to one space per family in Billerica) because the Cambridge site was already efficiently served by public transportation and was within walking distance of Harvard and M.I.T. as well. Other benefits of crowding are the ability to support community facilities, and the lowered cost of land per dwelling unit.

Moreover, the studies demonstrate how, with proper planning, the squeeze between land costs and density could be alleviated in more intensively developed cities by increasing densities in outlying areas and avoiding extreme density peaks in central city residential sectors. The present system of dealing with city decay, project by project, makes it impossible to rebalance densities. Relocation of slum-dwellers more often than not creates new slums by overcrowding still sound areas on the periphery of the slum. But if housing problems were tackled on a metropolitan-wide basis, residential clusters (like the Billerica sector) could be developed on land not now used for intensive residential settlement. The distribution of tight, well-defined clusters of varied housing types throughout a metropolis would produce a more desirable balance of population than is now prevalent.

Urban virtues

The Harvard housing clusters are basically very different in character from most existing suburbs. Increased sociability, common recreation areas, a chance for walking to shops and schools—all these became possible when densities far in excess of present-day suburban densities were used. Ingeniously, the architectural solutions to the housing types (overleaf) achieved more privacy for individual dwelling units than is usually possible in the average lower- and middle-income single-familyhouse suburb.

One important aspect of urban character is clearly evident in the developed plans: in an urban environment, buildings usually surround open space. In a rural environment the open space usually surrounds buildings. In the typical small-house suburban subdivision, however, there is neither "architectural" quality in the enclosed space nor "countryside" virtue in the open space.

The planning study recognized that new techniques for development and new concepts of financing would have to be developed in order to achieve the residential sectors that were planned:

A well-planned project must allow for participation by many developers. The Cambridge project was planned to allow division in several ways, among 9 to 14 different developers, because the size of the \$230-million project would be more than one developer could undertake.

▶ A land-acquisition and planning agency should develop the outlying residential sector. The agency would not be subsidized but would be allowed to condemn land at fair-market value (like a utility company). Actual building development and sales would be conducted by private builders working with the quasi-public agency.

▶ A sound urban renewal plan must include other uses, besides housing, to allow lower densities on high-priced land. The redevelopment of part of the Cambridge site into a regional shopping center helped compensate for the lowered land price brought about by lower densities in the housing areas.

A metropolitan-wide renewal agency under a metropolitan government similar to the setup in Toronto, Canada, is an almost essential prerequisite to achieving better balance in residential sectors. In many cities (Boston in particular), renewal problems are scattered through many municipalities. Some of these municipalities have neither the financial power nor the planning staff to execute vigorously a renewal program. A metropolitan agency could offer many benefits (e.g., better credit rating for bonds).

▶ A cooperative organization similar to the now-common agency used for selling in-city apartments to individual owners would be established for both inlying and outlying developments. Common land and community open space would be designed for park-type mechanical maintenance by a contractor at a cost of only \$300 per acre per year—less than would be expended by private owner maintenance if equipment costs were considered.

Both suburban developers and urban redevelopers can learn a good deal from this particular "school" solution.



Fewer buildings, more people



Cambridge renewal area, now covered with typical woodframe slum tenements (above), would be cleared and rebuilt in nine developer areas (dotted areas in sketch plan right; hatched area would be rehabilitated). In the Central Square area (upper right, photo below), a large regional shopping center would be developed. Apartment towers are concentrated along the Charles River to take advantage of its open expanse. Harvard's Dunster House is at the edge of the area (far left in model, below). Renewal area directly behind it would be used for expansion of Harvard University.

ARTHUR D. LITTLE & CO.





Two residential clusters, four kinds of housing



DENSITY BY DESIGN



Row houses and tower apartments in one section of Cambridge project (left) would offer a choice of four-bedroom (two bath) row houses by designer Masao J. Itabishi (plan, right) or three-, two-, or onebedroom duplex apartments by designer William N. Morgan (plan, extreme right). In the tower apartment plans, shaded apartments in lower and upper level plans comprise single units, areas labeled "A" contain living areas for apartments with bedrooms on the floor above, and areas labeled "B" contain bedrooms for units having living areas and entrances on the floor below.



Walk-ups and slab apartments in another section of Cambridge project (left) are based on the slab apartment plan of designer George M. Notter Jr. (plans right) and the "maisonette" type walk-up group by designer Michael J. Zimmer (plan extreme right). Notter's design has elevator stops at corridor floors which are sandwiched between "skip" floors. A duplex apartment section occupies the fifth and sixth floors. The Zimmer design combines three- and fourbedroom duplex units on the first and second floors with one- and two-bedroom units accessible from a third-floor gallery. The two-bedroom units have rooftop living rooms. END


ROW HOUSE







SKIP FLOOR

100 FEET



An elegant cabin

Meticulously crafted, informal in plan, this large woodland retreat is romantic but not rustic.

In the rock-littered woods of Pound Ridge, New York, about 55 miles north of Manhattan, Macy's Department Store executive John W. Straus has built an elegant country lodge-a spacious, slightly Japanese hideaway where, on week ends, he and his wife and three young children rough it in a grand and gracious manner. The house, pictured above and on the following four pages, is large-seven bedrooms, seven baths, almost 10,000 square feet of floor space. It is elaborately equipped. It is expensively detailed (each doorknob, every sliding window, even the kitchen ranges are architect-designed, custom-made). But above all, it is a house of subtle, engaging charm: serene, urbane, very sophisticated.

Designed by New York architect Ed-



ward L. Barnes, the house perches on the rumpled shore line of a quiet, Waldenesque pond. Rather than disturb the site's craggy granite ledges and ferny hollows, Barnes "floated" the building over them, reaching down with individual wooden posts to ground level. Seen from the entrance drive, or from the far shore, the architecture looks polite and precise, but informally arranged. Deep eaves cut long shadows against dark tree butts. Cypress-sided walls oil-rubbed to a rich coffee-brown, velvety black lacquered posts and beams, and many-hued glass windows echo woodland tones and textures, and often melt into the surrounding greenish twilight.

In plan (page 138) the house is essentially a colony of four modest-sized modular buildings-one for children's bedrooms and play area, one for master and guest bedrooms, one for garage, servants quarters, kitchen, and dining room, and one for a huge living room. Clustered about formal courts and loosely connected by long galleries, these rangy shapes, low and shedlike in scale, skirt between and around big clumps of trees, advance here, recede there, no vigorous or monumental form ever challenging the haphazard landscape. Even the abrupt living-room roof which rises above the flat sweep of surrounding roofs resembles nothing so much as a giant camp-meeting tent pitched by the water's edge.

Inside, the atmosphere is more that of a fine yacht. The rooms are airy and uncluttered. Almost everywhere there are generous views over slateblue water or into tiny, carefully manicured courts. Well-waxed tile floors, white walls, and aluminum hardware gleam spotlessly. Every sill, column, and beam fits perfectly. Every door and window works noiselessly. There are no rough edges, no lively colors. It is a terribly civilized place—orderly, roomy, always a little formal.

Five years ago Barnes designed woodland architecture somewhat similar for the New York *Herald Tribune*'s Fresh Air Camp (FORUM, July 1955, October 1957). A few related houses have followed. With this house, however, he seems to have achieved a craftsmanship and restraint which set it off as his most refined romantic statement to date.







Living room gable ends of stained glass play kaleidoscopic patterns across a ceiling made of sleek-surface oak flooring. The simply furnished space below measures 36 feet by 42 feet.

≺ {}

Front door deck and deep overhang are among the several details recalling Japanese forms. The white gravel court is broad and formally framed with dark wood walls broken only by the two entrance windows and three slots of glass in the wings flanking the entry (see plan).

₩₩>>

Fieldstone retaining walls bound three open courts and contrast with the smooth surfaces of the building walls and court floors. Photo at right shows the entrance court with its central clump of trees. The position of existing trees helped set the shape of the house on all sides.



in to

ARCHITECT: Edward L. Barnes LANDSCAPE ARCHITECT: James Fanning MECHANICAL ENGINEER: Benjamin Spivak STRUCTURAL ENGINEER: William Atlas CONTRACTORS: O'Brien & Kinkel



Clean, crisply defined structure, exactingly pieced together, is evident everywhere throughout the building. Common denominator for the structure is this post-andbeam assembly which is repeated every 14 feet 6 inches.

Room nearest the water is the master bedroom (below), which has an acoustical ceiling, built-in ductwork for future air conditioning, and a small private balcony. The bed's headboard and the night tables are part of the architecture.



Rugged landscape, left undisturbed, seems to upstage the architecture from almost every angle. Here rocks and knee-deep ferns push up to the edge of the kitchen and servants' wing. To the left a screened porch hangs over the pond. END



Prestressed concrete: the big stretch

TAUT AS A DRUM, this thin-shell roof and arena structure (seen at right in model) by Skidmore, Owings & Merrill shows the slimness, grace, and huge spans (400-foot diameter) possible in prestressed concrete. A bold design, it as yet has no client.



PRINCIPLE of prestressed concrete versus reinforced concrete is diagrammed above and below. In reinforced beam (above), steel rod simply adds support, no compressive strength to concrete, may bend, develop cracks under load. In prestressed (below), rod or cable is draped in beam, allowed to set. Then rod is stretched to pull concrete in compression. Under load, upward stress balances downward force to give great strength without cracking.







Built up to a \$500-million-a-year industry by the highway program, prestressed concrete is about to flex its new muscles for architecture generally. BY LAWRENCE LESSING



Prestressed concrete -- concrete held in compressive stress by steel-has reached an important turning point. An advanced and remarkable construction material, prestressed was introduced in the U.S. in a large structural way less than a decade ago. Nearly two thirds of its recent phenomenal growth has been in highway bridges, piers, and other appurtenances. But, now, in addition to the highway program, the industry is preparing to turn more of its capacity, skills, and experience to the uses of architecture. Indeed, this year's program of the youthful Prestressed Concrete Institute is heavily directed toward the potentials of this twentieth-century material in building.

Few new structural materials have grown up as fast as prestressed concrete, so fast that many designers are not yet aware of its maturity. In eight years sales have gone from almost nothing to over \$500 million a year. In each of those years prestressed has, on the average, doubled its production over the previous years, with 1959 expected to see only a 45 to 50 per cent increase. In less time than that the number of producers has gone from a half-dozen to some 280, strategically located over the country, with plant investments ranging from not quite \$100,000 up to \$5 million. And behind this high-investment, largely factoryprefabrication industry stretches a host of equipment manufacturers and major suppliers of concrete and stressing steel such as John A. Roebling's Sons Corporation and American Steel & Wire Division of U.S. Steel, all of whom have contributed to the fast development. Prestressed concrete, therefore, has become a major new industry practically overnight, its products widely available almost everywhere.

A good sign of prestressed's comingof-age is the new, \$1-million structural laboratory in the Portland Cement Association's research and development center at Skokie, Illinois (see pictures, page 144). Not only has this laboratory been hard at work since its opening early last fall investigating basic problems and properties of prestressed concrete, but the laboratory itself is a fitting symbol of the materials it is investigating: a handsome, all-concrete building (Architects: Dunlap & Esgar, Chicago) of unique design. It is in effect a mammoth testing machine, with a 12-foot-deep, reinforced-concrete, boxgirdered test floor capable of sustaining loads up to 10-million pounds. It is the only laboratory of its kind capable of testing full-scale thin-shell concrete structures. A second somewhat larger laboratory of similar design is about to be opened in which full-scale members will be fire-tested in huge furnaces.

Other important research is going on at the University of California, Illinois, and Princeton, and a number of projects are being sponsored by government or military agencies. Thus the vital research and data is being amassed—on ultimate strength, connections and continuity of precast members, fire standards, shell design, and much else—to carry prestressed concrete strongly into building.

Prestressed's principles

Theoretically, prestressed concrete has been an almost ideal structural material for a long time, combining as it does some of the architectural body of the past with the sinewy structure of the future. Masonry materials, such as stone and concrete, are strong in compression and relatively weak in tension (i.e., they are brittle), hence the massive, plastic style of ancient buildings, requiring great weight for strength. When steel came along, a new material entered into structures that develops great strength in tension, and its expression has perhaps reached an ultimate in the slim, lacy, skeletal skyscrapers of today. But prestressed concrete combines masonry and steel in such a way as to develop and wed the ultimate strengths of both materials in a single modern material that provides plastic form without excessive weight, flexural strength without excessive steel.

Prestressed concrete does this by going a long step beyond ordinary re-

inforced concrete (see diagrams, page 142), from which it stems. In the latter, the reinforcing rods or mesh are simply embedded in the concrete to add support and tensile strength. In bending under load, the concrete is still subject to tensile stresses that cause cracking. In prestressed concrete the reinforcing steel is stretched until it develops about 7/10 its ultimate strength, and this stretch of metal. bonded or anchored to the concrete, squeezes the concrete in permanent compression, thus producing a stiffer member than with reinforced concrete. Hence, less steel and concrete are needed for a given job. Moreover, tensile stresses under load are offset by the precompression to resist bending, hence steel and concrete work intimately to realize the ultimate from these materials. A homely example of some of the forces at work may be found in a common method of moving a row of books by pressing hard at both ends and lifting. If compression is high enough, the row of books will not only support itself but also some additional weight.

Prestressed's diving board

There are many methods of prestressing, but all fall into the two broad categories of pretensioning and posttensioning. In the first, the steel is stretched and the concrete cast and allowed to harden around it, at which point the steel is released, pulling the concrete into compression. In the second, concrete is cast and set around unstretched steel (prevented from bonding by coatings or tubing), which is then tensioned and anchored to the finished concrete, holding it in compression. In other variations, the steel is curved in the concrete so that under tension its upward force exactly balances the downward push of gravity, producing straight beams of great stiffness. Or the composition can be made so thin and flexible that it may be fashioned into fishing rods and diving boards-a favorite sales gimmick-with all the spring of the real thing, without cracking.







GIRDER RODS SUPPORT AT GIR-DER ENT FLOOR NEW LABORATORY of Portland Cement Association at Skokie, Illinois, is a unique, \$1-million testing machine. In great hall (top), beams, floor slabs, and whole shell structures are tested to destruction, studied under load by multiple instruments. Test floor (left) is a hollow box girder. Hydraulic jacks below exert downpulling forces of up to 100,-000 pounds on a test beam (below) until it gives way with a rumbling earthquake boom.



This wedding of forces produces a material of superb strength, versatility, and economy. Architecturally, its chief virtue is that it may be molded into almost any desired form, from rugged to very slender and precise dimensions, with a feeling of lightness yet plastic strength, and keep those dimensions under nearly all conditions. A prestressed floor may be designed to be forever flat. In pretensioned form, it lends itself to highly efficient precast factory production and fast assembly on the site. In post-tensioned form, it brings to the site factory techniques and makes possible continuous structures of a new variety. Once in place, it may require no fireproofing, little or no finishing, painting, or maintenance.

Prestressed's economy

Prestressed's economy rests intricately on all this plus its great strengthto-weight ratio. It can cut weight nearly in half over reinforced concrete. This means that a prestressed beam may be about half the girth of a reinforced one for a given load, or at equal weight may span much greater distances. Prestressing requires the use of highstrength steel and concrete, costing more per pound than that in reinforced, but since it uses less of both, this cost difference more than cancels out, particularly over long spans. In competition with plain structural steel, in which prestressed concrete's weight advantages are almost reversed, it begins to compete only at spans above 30 feet. In shell structures, however, prestressed concrete may be the only material to achieve spans of very great diameter, with the possibility of crackfree surfaces to keep out the weather.

Since the trend of architecture is toward longer spans of one kind or another, prestressed concrete takes its place, about midway in weight class between reinforced concrete and structural steel, working well in combination with these older materials, as an established component in the basic structure of modern building.

Prestressed concrete is another of





WATER TOWERS, among the first prestressed structures raised, reach a pinnacle of design in Europe. Above: tower at Orebro, Sweden, houses a restaurant in conical top. Conical top was first cast on ground, then raised by casting the stem in slip-form sections under it. Below: tower at Corgenon, France.



the advanced technologies in which the U.S. lost early leadership and has not yet caught up again. An American, P. H. Jackson, of San Francisco, in 1886 secured the first patent on a prestressed concrete beam, but the mild steel then available could not maintain the stress for long, and the development was never followed up in a practical way. In 1927 a French engineer, Eugene Freyssinet, still active, used high-tensile steel to accomplish Jackson's purpose, and France still holds the lead for bold innovation in this technique, followed closely by other European countries. Even Russia now equals the U.S.'s present volume in prestressed and is growing at an even faster rate. The U.S. showed little interest for a long time because of the gap between architect and engineer in this country, the plentifulness of cheap steel and other materials, the subtlety of the economy of weight-saving, the feeling that manual techniques made prestressed uneconomic for the U.S., and the plain drag of inertia.

The Korean War, followed by sharp shortages in structural steel, gave prestressed concrete its opening in the U.S. And the rise of the toll road and superhighway programs provided an opportune market for standard bridge beams and shapes on which the new industry could swiftly grow in volume, amortize new plants, and develop massproduction techniques. The Freyssinet Company and other European interests established American branches to promote developments. And it was soon established that prestressing could be well adapted to mechanized production, for the U.S. plants are among the world's leaders in efficiency and potential volume, with slip-form and extrusion methods under development that will increase this even more. It also was clearly shown that prestressed could compete, for the new beams proceeded to capture close to one-third of the highway bridge market from conventional steel, at tangible savings on 219 bridges in one state alone (Illinois) of \$10 million. If prestressed could gain the whole market-an unlikely



event under the political pulling and hauling of highway developments—it could save up to \$2 billion on the total bill, according to some estimates.

From the start, a substantial portion of U.S. prestressed production has been going into building construction, which is regarded as the ultimate bread-andbutter side of the business. Most of this, however, has been in one- or twostory commercial and industrial structure, and, more lately, in schools, of no great distinction, but laying the groundwork of experience and cost competition at its fiercest level. One small plant, for instance, was competitively bid on for a packaged steel structure and prestressed concrete, and the prestressed came in \$2,000 or 15 per cent under the steel. Standard prestressed beams in the range of 40 to 60 feet are now not only competitive with steel, but in many places are under steel in costs. More ambitious uses of prestressed have lagged not only because of the newness of the technique but also because more efficient methods still need to be developed for connecting prestressed components into larger structures, and there is a wide variability in codes and labor costs. In New York and Chicago, for instance, prestressed is yet to be used, largely because of code resistance. The many variables make the case for prestressed in buildings not so clear-cut as in highway bridges, for prestressed, unless used in standard members or properly designed for repetitive form casting, may run higher than conventional materials.

Lately, however, prestressed in the U.S. has been rising in stature. A big basic aluminum plant for Reynolds Metals Company in Listerhill, Alabama, opened last summer, was built of some 12,000 precast reinforced or prestressed columns, beams, and wall panels by Texstar Construction. Two notable new projects are currently rising in Seattle, Washington. One is the \$3,275,-000 North Seattle High School (Architects: Naramore, Bain, Brady & Johanson, with engineering by Wor-



FIRST PRESTRESSED BEAM in a U.S. office building of more than six stories is lifted in place (above), for the 21-story, \$12-million Norton Building (top) in Seattle, Washington. The slim beams, attached to steel framing, span 70 feet, allow columnfree office space (plan, right) and all utilities and ducting to be passed through pierced sections in the beams.



thington & Skilling) which, for economy, will use prestressed for all classroom carrying members, and for a cylindrical shell gymnasium roof of 115-foot span, the largest prestressed thin-shell concrete roof so far in this country. The second project, in downtown Seattle, is the first multistory structure above six stories in the U.S. using prestressed concrete beams: the 21-story, \$12-million Norton Building (Architects: Bindon & Wright, and Skidmore, Owings & Merrill, with prestress work by Anderson Brothers, Tacoma) which will have 200,000 square feet of column-free office space due to the design and use of beams spanning 70 feet. Prestressed was chosen not only for this spanning prowess, plus its slimness and economy, but also because all utilities and ducting could be run through holes in the beams at no extra cost.

Prestressed's challenge

The U.S. prestressed concrete industry now has a flexible capacity and is open to architectural suggestions as to how that capacity should be turned to making useful building components. The industry is aware that it has standardized so heavily for the highway program that it may be blocking progress. But the development of standard components for buildings is well under way, as well as other developments, such as the use of lightweightaggregate concrete to bring prestressed's weight even lower.

There is a challenge in this, and in the continuing European innovations, for U.S. architects to make more bold and creative use of prestressed concrete. What is needed is such an experimental building as Paris' stunning new industrial exhibition hall with its thin-shell roof of an amazing 750-foot span. Such structures point to the future. Though prestressed concrete will go in major volume into replacing steel in conventional structures, its big growth will lie in the development of entirely new forms made possible by its unique properties. END







LE CORBUSIER'S PAVILION for N. V. Philips of Holland at the Brussels World Fair (right) embodied the most advanced use of prestressed shell construction so far. Sections of this intricate, three-point shell were precast in small slab components against sand shaped to the proper curvatures (top), then assembled against formwork on the site (above, left), and finally post-tensioned into a continuous structure by wires wrapped and stressed over the outside of the slabs, as seen in interior view (above, right).







Building on the moon

Even though many unknowns still enshroud the moon, such as whether or not it is ablaze with radioactivity, man is nevertheless making ready to construct permanent buildings on it. This prospect has inspired at least four earthbound designers to consider the problems of lunar architecture. To be sure, their ideas range from the more or less profound to the whimsical, but the fact that they are thinking about it suggests, perhaps as graphically as a moonprobing rocket itself, the imminence of mankind's first "live" venture into outer space.

The Russians are known to be planning a moon voyage, though it will not be risked until their scientists find an assured means of safe return to earth. And U.S. scientists hope to "inhabit" the moon with instruments, possibly in 1960.

One of the big unknowns, particularly important to developers of the moon's real estate, is the nature of its landscape. Scientists still widely disagree as to whether its surface is hard lava

or thick dust, into which unwary space ships might submerge as in a deep, dry quicksand. The more down-to-moon designers heed this latter possibility by producing buoyant, self-contained enclosures. For example, the geodesic spheres of the National Research Corporation and the Architects Collaborative, of Cambridge, Massachusetts (sketches, opposite), are designed either to float or to rest atop a hard crust. Another solution, equally cautious, is that of Dr. John S. Rinehart of the Colorado School of Mines, whose cigar-shaped cylinder (photo, right), designed with engineers of the Wonder Building Corporation, would, due to its pressurized state, "float in a stationary ocean of dust," as a ship at anchor.

In one limited respect, at least, the moon should be a wonderland for architects who concede defeat in the earthly battle with the leaking roof, for the moon has no clouds, winds, rain, or snow. But as harsh compensation, any structure built on this virtually atmosphereless sphere must be internally

PLASTIC OUTPOST envisioned by space thinkers at General Electric would include garden, manufacturing facility, and living quarters. Outside the main bubble would be mines, power generators, and a rocket-port.



FLOATING CIGAR of Wonder Building Corporation has immense metal roof (460 feet by 380 feet). 350-ton building would be shipped in stages. Pressurized cylinder would "float" on moon's surface like a ship at anchor.





BOLDEST DESIGN is Boston Architect Dirk Luykx', who would erect a nine-story plastic structure, complete with gardens, social center, nursery, and kindergarten. The top floor houses power and light equipment.



pressurized with an atmosphere in which humans can exist. Further, any moon structure must withstand severe changes in temperature: from a blistering 200 degrees Fahrenheit at lunar midday to some 250 degrees below zero at midnight.

What kind of material will endure such conditions? Looking far into the future, scientists at General Electric Company envision some sort of transparent plastic which could be shipped as bulk liquid, then inflated at the site by blowing it into a huge bubble (opposite page) "much as a glass blower presently fashions bottles." The "community living center" of Archtect Dirk Luykx would also use a transparent plastic skin (sketch, left). However, as the scientists concede, such materials and techniques are some years away. Their inclination, at least for now, is toward more practical materials and construction methods.

A more attainable material than the hoped-for transparent plastic, and more feasible than metal, may be the aluminized plastic which is proposed by National Research and Architects Collaborative for their moon structure. This material, already in production as space-suit insulation, weighs only about a pound per 140 square feet, at a thickness of 0.001 inches. (On the moon, it would weigh only about one pound per 1,000 square feet, due to the lower force of moon gravity, only one-seventh that of earth.) Moreover, unlike an allplastic material, it would reflect about 96 per cent of the sun's heat.

The basic shell for this structure would be preassembled on earth. At the moon site, several of the shells would be linked together, each with its own function: laboratory, living quarters, etc. The responsibility of the first landing party would be to get the structures built. Their rocket, possibly nuclearpowered, would be cannibalized on the moon for motors, pumps, blowers. Later rockets, carrying little or no materials for the base, would carry extra fuel for the explorers' return flights to earth. END

Bright Ideas

These innovations worked in architecture and in building finance.

Good neighbor policy

A refreshing exception to the upstaging usually perpetrated by new buildings on their older neighbors is the newly completed Canada House, a 27story office building on New York's Fifth Avenue. A small courtyard sets an ingenious example for building next to venerated older structures (especially churches) which could be followed on main streets all over the U.S.

Saint Thomas Church, completed in 1913 and the high point in the Gothic Revival art of its architects, Cram, Ferguson & Goodhue, actually benefits from its new neighbor. Because of the small (40 feet by 25 feet) courtyard, Saint Thomas can be seen for the first time as a three-dimensional object from the north as well as from the south.

In dealing with the problem of neighborliness, Canada House Architects Eggers & Higgins also resolved some of the design problems of building a 27-story office building on



an exceptionally small site. By setting the main mass of the tower 25 feet back from the Fifth Avenue building line they were, for example, able to extend the tower from sidewalk to summit without interruption. The long vertical Gothic lines of Saint Thomas have an answering but subdued recall in the vertical lines of the tower, and the material used at the church (fortunately Canadian limestone) was repeated on the new building.

Reverend Frederick M. Morris, the rector of Saint Thomas, said: "We are deeply appreciative of the decision to build in stone and to leave the courtyard space. Such neighborliness and such conservation of high esthetic standards are not common." A look at the confusion of any American Main Street confirms Reverend Morris's opinion. But Canada House could be the bellwether of a revival in architectural neighborliness.

Rented elevators

Soaring wages for elevator operators have put many older buildings at a serious disadvantage in competing with new or rehabilitated structures equipped with automatic elevators. But many building owners cannot afford the heavy expense of elevator modernization, and elevator producers have never gone in for "installment plan" financing.

In the past a building owner, lacking large cash reserves, had to resort to increased mortgage borrowing or a substantial bank loan to finance the installation of elevators. A few months ago, however, the Wells Leasing Corporation of New York City began offering to pay the bill. Under the Wells plan, the owner can select his own elevator contractor and any producer's equipment he desires. Then We'ls will pay for the job in full, and will own the new

equipment. To recover its investment, Wells will charge the building owner an initial 10 per cent of the total cost, and will lease the elevators to him for a period of seven to ten years at a rent that will amortize most of the capital cost (plus interest) over that period. At the end of the lease the building owner will have an option to buy the equipment for 15 per cent of its original cost-minus his original 10 per cent payment-or negotiate a new lease.

The leasing firm's original announcement drew a very favorable response: it is already actively negotiating ten elevator leases with hotels and office buildings—every one of them a modernization that will cost well over \$100,000.

Besides opening the way for many owners to proceed with major elevator modernization programs "on time," the Wells plan includes tax and company financial statement advantages. Rent payments are non taxable expenses instead of "after-tax" capital outlays. And by renting, financial statements do not have to show new or increased "debt" items for the borrowing that usually would be necessary if new equipment was purchased.

Syndicated hospital

In an unusual financial operation that could be used to build hospitals and medical centers in other places, three independent (yet interdependent) syndicates were organized recently to finance a \$1-million, 70-bed private hospital in New York City. Robert K. Lifton, New York realty investor and syndicate specialist, worked out the details.

Fee ownership of the East

View Hospital is held by a syndicate of ten investors, who acquired the land and paid for construction of the building. Behind this syndicate is another syndicate of ten other investors, who leased the building from the first group for 21 years plus renewal options. This second group also loaned the first syndicate about 25 per cent of the cost of the building. The lease was posted as collateral for this loan. The second syndicate will thus be freed of any obligation to pay rent (except to itself) if the first syndicate defaults on its loan repayments. The third essential "syndicate" in this financing triangle is the tenant group of doctors who will furnish, equip, and operate the hospital under a long-term sublease of the building.

All three groups acted in concert and agreed on all the terms of their commitments to each other before construction began. As part of this threeway deal, for instance, the doctors were allowed to specify the layout and special design features to be incorporated in the building, which was designed by Architect Bertram L. Whinston.

In effect, the role of the intermediate syndicate corresponded roughly to that of a second mortgage lender under old-fashioned financing methods. Under those methods borrowed capital would have to be repaid with "after tax" dollars, and many projects are no longer feasible on that basis. By the use of lease and sublease arrangements, however, large portions of capital outlay expenses can be recovered out of rents which are regular business expenses and can be paid with "before tax" dollars-thus making a project a much more acceptable investment. END

With air conditioning up atop the roof, you can do Big things in a little way ... or, little things in a big way.

Be it bantam store, be it giant supermarket be it midget variety store or mammoth shopping center be it industrial plant, clothing store, bowling alley or restaurant. Bantam or giant, if it's a single story building, Melco Roof-Top* provides the perfect answer for year-round air conditioning.

The Melco Roof-Top saves space and money it eliminates boilers and compressor rooms.... eliminates water, steam and refrigerant lines being air cooled it eliminates water, water towers and water problems eliminates costly, unsightly ducts which in turn may mean lower roofs, lighter bearing walls in short, reduced construction cost. And being completely packaged reduced installation cost.

For cooling and heating or for cooling alone for new construction or for existing building for a giant store or for a bantam store if it's a single story building, Melco can save you money, save you space.

For complete information write Dept. F

melco



When it comes to Clock and Program Systems...



STANDARD, the world's leading manufacturer of this equipment, offers you the only clock and program systems with all these features:

- · Full 24 hour correction of all secondary clocks-automatically.
- · "Memory Tape" control-Easy to set, simple to change programming of signals.
- · A complete range of modern styled clocks.
- · Listed by Underwriters' Laboratories, Inc.

And there's this about selecting STANDARD: you know you can rely on STANDARD to:

PROVIDE SERVICE-The industry's largest service organization is on the scene-nationwide.

KEEP FAITH-Standard's jealously guarded reputation for fair dealing ... for never letting a customer down ... is built on a solid foundation-75 years of specialization in electric clock and program systems.





Pioneer in 1884 — Leader in 1959

THE STANDARD ELECTRIC TIME COMPANY



Travelling Display-Watch for showing in your area. See complete STAND-ARD Systems in operation.







Equipment



89 LOGAN STREET



Anglo

ready to assist you. Ask for a visit or

request descriptive

catalog #245.

SPRINGFIELD, MASSACHUSETTS



... it pays to have FREYSSINET on your building team

The best results on any prestress job are achieved through Freyssinet methods and precision fabrication of concrete products by a Freyssinet Affiliate. This world-wide organization stands ready to serve you from the planning stage through final construction. To get full details about prestressed concrete applications, economies, or specific job analysis, contact the Freyssinet Affiliate nearest you or write directly to P. O. Box 51, New York 5, N. Y.

FREYSSINET AFFILIATES Freyssinet—famous the world over for high standards, design economy, speed of construction

The Dextone Co. 166 Chapel Street, New Haven 3, Conn. Economy Cast Stone Co.

15 East Franklin Street, Richmond 7, Virginia Empire Pre-Stress Concrete of Oregon N. E. 92nd and Halsey St., Portland 20, Oregon

The Formigli Corporation 2050 Locust Street, Philadelphia 3, Penna.

Goodstone Mfg. Co., Inc. 470 Hollenbeck Street, Rochester 21, N. Y. Graystone, Inc. 134 Nickerson, Seattle 9, Washington Lewis Manufacturing Co., Inc. 3044 S. W. 28th Lane, Miami 33, Florida New England Concrete Pipe Corp. 99 Needham St., Newton Upper Falls 64, Mass. **Precast Concrete Limited** P. O. Box 398, Calgary, Alberta, Canada

Precast Industries, Inc. P. O. Box 349, Kalamazoo, Mich. Precrete, Inc. 130-01 Northern Blvd., Corona, N. Y.

Schell Industries Limited Woodstock, Ontario, Canada

Standard Prestressed Structures Limited Box 348, Maple, Ontario, Canada

UNDERFLOOR ELECTRIFICATION

RACEWAYS ... FOR ONLY

50¢ A SQUARE FOOT ...

half the cost of the next most economical quality system

The E/C Joist is a standard Open-Web Steel Joist with an electrical raceway substituted for the conventional top chord. Each E/C Joist has the same load-carrying capacity as a comparable standard joist, and the same load table applies. Patents applied for. LISTED BY U.L.,—Ceco E/C Joists are listed by the Underwriters' Laboratories for use with electrical header ducts and accessories manufactured by General Electric Company, National Electric Products Corporation and Walker Brothers.



In this case, pairs of E/C Joists are alternated with pairs of standard joists at 18" o.c., providing a two-duct system at 6'-0" o.c. The header ducts here were installed during a 4" snowfall, demonstrating that construction can proceed in bad weather. For full particulars fill in the coupon below and place in the mail.

You save with Ceco Electro-Channel Steel Joists because they serve a double purpose ...

A new product that reduces costs and increases utility makes welcome news. Such a product is the Ceco Electro-Channel Steel Joist, which provides raceway systems for top-quality underfloor electrification for as little as 50¢ a square foot. This is half the cost of the next most economical quality system. The saving is possible because E/C Joists do two jobs ... carry the electrical as well as the structural loads. Included with the Ceco system are header ducts, hand-holes and markers, installed-as well as the E/C Joist integral raceways. The 50¢ buys a two-duct system on 6'-0" centers, and represents the cost over and above standard steel joist floor framing. Comparable savings are offered in three-duct arrangements. Call your Ceco engineer or send coupon for manual. Ceco Steel Products Corporation-Sales offices, warehouses and fabricating plants in principal cities. General offices: 5601 West 26th Street, Chicago 50, Illinois.



IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE

Steel Joists / Steelforms / Concrete Reinforcing Curtainwalls, Windows, Screens, Doors / Cecoframe Buildings / Roofing Products / Metal Lath



E/C Joists can be substituted directly for standard joists to provide as many electrical raceways as desired. The two header ducts, shown horizontally in the foreground, feed wires into the E/C Joists through the hand-holes in the center of the photograph.



Electrical, telephone and signal wires can be run from the panel boxes down through the header ducts, into the top chord of the E/C Joist and up through the surface fittings to desks located anywhere on the floor. Whenever desks are moved, surface fittings can be placed along the joists to service the new positions.

AF

CECO STEEL PRODUCTS CORPORATION 5601 West 26th Street, Chicago 50, Illinois Please send Introductory Manual No. 3011 covering Ceco Electro-Channel Steel Joist Construction.

name	position	4
firm		-

	1
zonestate	
	zonestate

Cool cushions ease skating rink pipe into place!



General Contractor: Webb & Knapp Construction Corp., Denver, Colorado

An unusual feature in the construction of the Zeckendorf Plaza Skating Rink in the Court House Square Development, Denver, Colorado, was the method used to lower the header after the pipe had been welded to it. To protect the pipe from damage, 300-pound blocks of ice were placed under the header so that it settled gently into the header trench as the ice melted.

For this project, National Tube supplied 28,000 feet of 1" extra-strong USS National Pipe, as well as the 8" Seamless Pipe used for headers which were spaced 63' 10" apart. The rink covers 7,071 square feet—an area that required 442 runs.

If you need top-quality steel pipe for ice skating rinks, snow-melting and radiant-heating installations, or for all types of building and industrial applications, be sure you specify USS National Pipe. *Why?* Because National Pipe gives you the best possible investment by giving you the best possible service per dollar of cost. If you'd like further information or immediate assistance with your pipe problems, write to National Tube Division, United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania. *USS and National are registered trademarks*



"The world's largest and most experienced manufacturer of tubular products"



Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors United States Steel Export Company, New York

Paint-on fire protection . . . robot hod carrier . . . plastic-faced block . . . motorless water pump



Above: an old Air Force barracks, not Saf-painted, is leveled in test fire. Painted building (left) survives, still structurally sound. Below: view of puffed-up paint on ceiling after fire.





FIRE-STOPPING PAINT protects interior walls and ceilings

A new fire-retardant paint called Saf ("Stops All Fires") is two to four times more effective than other types in checking the spread of heat and flame. (Underwriters' Laboratories flame-spread ratings for most other fire-retardant paints on the market run about 25 to 40; Saf's rating: 10 to 15.) Developed by Doctor Leroy W. Shuger and Mervin Alembik, the new paint stops flame spread by puffing up under heat, much like a marshmallow being toasted, to form a spongy insulating fire barrier (see bottom photo at left). Once the fire has been extinguished, this layer can be easily scraped away to ready the unharmed undersurface for repainting.

Smokeless, nonflammable, and nontoxic, Saf can be applied like standard paints, with brush, roller, or spray gun, over wood, steel, plaster, composition boards, or old paint, including latex paints. Two coats—one flat, one glossy—are recommended for maximum protection. Cost: \$8.50 per gallon, or roughly 25 per cent higher than standard interior paints, about the same as most other fire-retardant paints.

Manufacturer: Baltimore Paint & Chemical Corp., 2325 Annapolis Ave., Baltimore 30, Md.

ELECTROLUMINESCENT PANELS produce low-cost, diffused light

The glowing rectangular shapes in the photo at left are electroluminescent light panels now commercially available in stock sizes ranging from 2 inches by 2 inches to 2 feet by 2 feet and in standard colors of green, yellow, and blue. Made by the Westinghouse Electric Corporation, they are composed of a sheet of glass coated with a phosphore and an electrically conductive layer of aluminum. When voltage is applied the phosphore lights producing diffused illumination without additional fixtures or baffles. About as thick as an ordinary window pane, the lamps are inexpensive to operate and offer long service life. A foot-square panel, for instance, when used at an average office rate of about 3,000 hours per year, will burn from two to three years at an annual cost of roughly 17 cents. Applications for the panels suggested by the manufacturer: elevator signals, step lights, switch plates, lighted shelves or tables, luminous baseboards, or decorative inserts for wall panels, screens, signs, countertops, etc.

For general lighting or for reading they are still impractical, since a high-intensity white light has not yet been developed and individual panel costs, as of now, make large-scale ceiling or wall installations prohibitive in most cases. An average 1 foot by 1 foot panel sells for about \$30.

Manufacturer: Westinghouse Electric Corp., Bloomfield, N.J.

AUTOMATIC BRICK HOIST requires no operator

At an Indiana glass factory three mammoth sand silos (below) were recently completed 25 per cent ahead of schedule thanks to a new remote-control, heavyduty hoisting machine. Designed primarily for lifting brick and mortar on multistory construction jobs, the machine is operated, from the ground or



any floor, by three push buttons: "up," "down," and "stop." Thus a worker on the ground loads the platform, sends it to the preset floor, and is free to do other work until the platform has been unloaded and returned to the ground. No operator is necessary—a labor-cost saving which will, according to the manufacturer, pay for the machine in about one year. The machine is powered by a 25-horsepower engine and weighs 5,200 pounds. It can lift up to 2,500 pounds as high as 165 feet, at a rate of 160 feet per minute. Cost: \$5,500 and up.

Manufacturer: Buck Equipment Corp., Anderson Ferry Rd., Cincinnati 38, Ohio. continued on page 165



Stainless Steel is becoming more and more popular as in the Automatic Electric Plant where 78 Washfountains of this 54-in. circular model were installed.



The Semi-circular Washfountains (wall type) shown are precast stone, part of new Martin Company installation, Orlando, Florida plant.



Industry provides the very best in sanitary washing facilities

Of nearly 1,000 U. S. industrial plants built in 1957, 10 were placed on the yearly "Honor Roll" by the editorial staff of FACTORY MANAGEMENT AND MAINTENANCE magazine.

Of these 80 percent included Bradley Washfountains-because of lower installation costs, ample time-saving facilities, and maximum protection against spread of contagious infections.

Each Bradley serves groups-yet requires but a bit more water than a single person wash basin, and only one set of piping connections for each 8 to 10 person Washfountain.

Maintenance is cut-no faucets to adjust or replace-and since the bowl is self-flushing, unsanitary collection of water is prevented.

If new plant is not now under consideration, you can improve or enlarge your washing facilities with the same type of Bradley Washfountain that FACTORY'S top plants prefer ... Write for helpful Catalog 5601...

BRADLEY WASHFOUNTAIN CO., 2235 W. Michigan St., Milwaukee 1, Wisconsin.





Write for Catalog 5601

164



Products

RUGGED SCHOOL FURNITURE is colorful and comfortable

A chair with the seat molded of one piece of colored glass fiber and a lift-top desk equipped with a special torsion bar device which holds the top in any position and prevents it from slamming down on small fingers are the two most interesting features in the new line of school furniture recently introduced by the Brunswick-Balke-Collender Company. Though not particularly graceful looking, the chairs, with their U-shaped, tubular steel legs and springy backs, are rugged and comfortable. The desks provide ample storage space inside and large, plastic work surfaces. Eight sizes, for kindergarten through college, are available for both desks and chairs. The basic chair, in any of the six standard colors, costs about \$9.50; the desk: \$22. Accessories such as an underseat book rack are available at an additional cost and all prices are subject to quantity discounts.

Manufacturer: Brunswick - Balke - Collender Co., 623 South Wabash Ave., Chicago 5, Ill.



AIR-BLOWING LIGHT FIXTURE simplifies suspended ceiling decor

To simplify the installation and appearance of suspended ceilings the Pyle-National Company has designed a new product which combines in one trim unit a linear fluorescent light fixture and a low-velocity diffuser for forced hot or continued on page 166



with any other type of vapor seal on the market!

ONLY *PM OFFERS ALL OF THE FEATURES NECESSARY TO PROVIDE A TRUE. IMPERMEABLE VAPOR SEAL **AGAINST MOIS-TURE MIGRATION.**



COMPARE the strength ... "PM" maintains its permeance rating even after being subjected to the pouring of aggregate, trundling of wheelbarrows and installation foot traffic. Resists rupturing and tearing. How many other materials will perform like this? COMPARE the ease and speed of providing a permanent installation ... "PM" may be laid directly over the tamped grade or fill. Ideal for all types of construction; basement, crawl-space and slab-on-grade.

We sincerely advise and invite your comparison of "PM" against all other "so called" vapor barrier products on the market . . . before you specify or install your next vapor seal be sure it meets these Sealtight standards of quality: permeance rating of only .0066 ... resistant to rot, mold and termites ... strong enough to resist puncturing ... expandable ... quickly, easily installed . . . only "PREMOULDED MEM-BRANE" meets them all. "PM" is ac

SEALIGHT

PRODUCTS "PREMOULDED MEM-BRANE" Vapor Seal • "HYDROMAT" Asphalt

JFR Joint Seal, Curing

Compounds and many others.

ally the most economical vapor seal on the market when you consider the reduced maintenance and redecorating costs realized through the complete elimination of moisture migration into the structure. COMPARE the permeance ratings . . . as you can see by the chart below, "PREMOULDED MEMBRANE" is over 16 times more impermeable than the next ranking material.

ctu-	MATERIAL	WATER VAPOR TRANSMISSION (in *perms)
	"PREMOULDED MEMBRANE"	.0066
	Polyethylene Film (.004 in. thick)	.097
	55 pound roll roofing	.030
	Duplex paper (coated both sides reflectors material, reinforced)	.304
	*PERMS—grains per square foot mercury difference in standard test conditions.	

Liners "HYDROJOINT" PVC *Premoulded Membrane ... the industry's Waterstops • "CORKTITE" Perimeter Insulation only TRUE, impermeable vapor seal. . PAVING PRODUCTS: Expansion Joints, Center Strip, Hot and Cold Rubber Asphalt of "Tech-Tips." Seal, Hot and Cold

WRITE TODAY for complete information. request the "PM" Design Manual and series

W. R. MEADOWS, INC.

6 KIMBALL ST. . ELGIN, ILLINOIS

"...highest degree of sound proofness possible in a movable wall"



UNITFOLD® FOLDING WALLS

In the Dinkler-Plaza banquet room, Unitfold Walls are used to create as many as six separate areas. Sound between these rooms is blocked with the efficiency of a 10" to 12" plastercoated SOLID BRICK WALL. This is done through double-run wall sections, lined with acoustical material and separated by sound retarding dead-air space.

All Fairhurst Walls are solid, rigid, with virtually unlimited choice of decor. Write Dept. AF for free illustrated booklet describing Fairhurst solutions to perplexing space problems.



Tairhurst

Units fold compactly to one side at the Dinkler-Plaza. Possible variations allow complete concealment of wall in special pockets.

Handsome grained veneers give the appearance of a permanent wall.



slotted reflector plate Iti-vent air diffuser plastic diffuse troffer light

Products

cooled air. Shown above, it consists of a flush mounted troffer, a plastic lens with tiny air distribution slots around its perimeter, and a vertically directed air diffuser behind the fluorescent lamps. This diffuser is, in turn, attached by a flexible tube to a central air duct located above the suspended ceiling. Thus from the floor the lighting component is the only visible part of the unit. Available in several sizes, the units sell for about \$45.

Manufacturer: Pyle-National Co., 1334 N. Kostner Ave., Chicago 51, Ill.



PLASTIC-FACED MOLDINGS match laminated hardboard patterns

A new line of moldings matches every available pattern of the major laminated hardboards (Formica, Micarta, Textolite, Panelyte, etc.). Made of aluminum, with a plastic veneer bonded to the exposed surface, the moldings are used, instead of chrome trim, for corners and end caps and to conceal the expansion and contraction gap between panels on walls, ceilings, or counter-tops. Now on sale in a wide variety of shapes and in standard 8-foot lengths, the moldings cost from 28 to 35 cents a lineal foot.

Manufacturer: Keller Products Inc., 41 Union St., Manchester, N. H.

JAPANESE WATER PUMP has no motor, uses no fuel

An amazing new water pump made in Japan is now being introduced in this country. It uses no fuel—has, in fact, no motor. Called the *Dyna Pump*, it is a patented hydraulic ram-type pump which uses the flow of stream water, much like an old-fashioned water wheel, as its source of power. When the water flows through a 20-foot pipe in the stream bed, it activates valves in the pump which create



enough air pressure to push about 25 per cent of the total volume of water 30 times as high as the drop in level from the pipe's intake to the pump. Thus if the intake were 3 feet above the pump, 25 per cent of the water entering the pipe would be lifted 90 feet. The pump is easy to install and low in maintenancea yearly cleaning and oiling of the valves is all that is required-and is particularly suitable where a small, steady flow of water is required over long periods of time. It is now being marketed for irrigation and industrial uses, golf courses, and swimming pools. Prices range from \$133 for a pump with a 3-inch intake pipe to \$3,905 for one with a 12-inch intake pipe.

Manufacturer: Chuo Trading Co., Ltd., Tokyo, Japan. U.S. Distributor: Taylor Engineering & Assoc., Box 7815, Cleveland 31, Ohio.

HARDBOARD WALL TILES are easy to apply and inexpensive

The Formica Corporation is marketing thin (0.04-inch), flexible sheets of its laminated hardboard, *Formica*, as an easyto-apply and inexpensive wall tile for bathrooms. Fixed to plaster, plywood, or dry walls with a quick-drying contact adhesive, the 10 inch by 10 inch tiles will, according to the manufacturer, provide a tough, waterproof surface—from floor to ceiling—at a cost comparable to that of a wainscoting-high surface of ceramic tile. Cost: \$1.50 per square foot.

Manufacturer: Formica Corp., Spring Grove Ave., Cincinnati 32, Ohio.

Erratum: the \$15,000 price quoted last month for the Kawneer Company's automatic door should have read \$1,500. END



now the prints you need when you need them!

No longer need you wait a day, or even hours, for prints that you're in a hurry to get to customers.

Now, Bruning's unique Copyflex Model 300 brings the advantages of inside reproduction within the means of the smallest firm or department. Right in your own offices, you make sharp, black-on-white prints in seconds of a drawing or tracing up to 30 inches wide by any length. With intermediates, you make design changes without reworking originals; you make composite prints, color overlays, and sharp prints from weak originals. You add new dimensions in convenience, speed, and efficiency to your entire operation. All at the surprisingly low cost of the Model 300!

And anyone can operate the Model 300. It needs only a 115-volt AC connection . . . is clean, quiet, odorless. An 8½ x 11" print costs less than a penny for materials. The money and time you now spend for outside prints will pay for your new Model 300 in short order. Why not investigate?



at Its Best!

Charles Bruning Company, Inc., Dept. 3-Z 1800 Central Road, Mount Prospect, Ill. Offices in Principal U.S. Cities In Canada: 105 Church St., Toronto 1, Ont. Please send me my free booklet on the low-cost Copyflex Model 300.

Name	Title	
Company		-
Address		
City	County	Ste

"produced for generations to come, not just for today or a decade hence." - from presentation of Skidmore, Owings & Merrill, Architects for the entire Air Force Academy complex

U. S. AIR FORCE ACADEMY opens WITH MORE THAN ONE MILLION SQUARE FEET OF FLOORS SEALED AND FINISHED WITH TREATMENTS

The Cadet Field House, at an advanced stage of construction. Hillyard Gym Seal and Finish were chosen for all 8 Academy Gymnasiums, 12 Handball Courts, 12 Squash Courts.

General Contractors for Phys. Ed. buildings: T. C. Bateson, Dallas. Flooring Contractor: Superior Floor Company, Colorado Springs.



- AT LATE AND IN THE

Hillyard Seal and Finish were chosen for more than 1,000,000 square feet of oak flooring in 1200 units of Capehart Housing on Academy grounds.

General Contractors: Del E. Webb Constr. Co., Phoenix, and Rubinstein Constr. Co. Flooring Contractor: Superior Floor Company, Colorado Springs.



<text><text><text><text><text><text><text>





HOLD

Before you make any new building or modernization plans be sure to see the Westinghouse Elevator "30-MINUTE PRE-INVESTMENT EYE-OPENER"

Just 30 minutes of your time now can have a significant bearing on the efficient operation of your building now and for the years ahead. Research and development in eleva-

toring have come a long way in recent years. Words can't adequately de-scribe this progress.

Actually experiencing this 30-min-ute eye opening demonstration will

make you confident that your decision make you confident that your decision for this major capital investment is sound. Make arrangements now by writing on your letterhead to: R. H. Wagner, General Manager, Westing-house Elevator Division, 150 Pacific Avenue, Jersey City 5, New Jersey—or call the Westinghouse Elevator Office in your city. in your city.

WESTINGHOUSE ELEVATORS AND ELECTRIC STAIRWAYS YOU CAN BE SURE ... IF IT'S Westinghouse

23

23

23

-)

5)

1

-)

)

MULTI-VENT°

low velocity air diffusers specified for the West's largest office building Multi-Vent will handle the air distribution in over 70% of Kaiser Center's office building, the largest west of the Mississippi, scheduled for completion late in 1959.

Multi-Vent is the ideal air diffuser for office space because it need never be moved, or even adjusted when partitions are relocated. Distributing air at low velocities by gentle pressure displacement, Multi-Vent provides truly sightless, soundless, imperceptible air conditioning comfort, unmatched by any other diffuser.



Multi-Vent panels, adjustable valves and flexible duct connections are concealed in metal pan ceilings because standard perforated pans (with acoustic pads removed) serve as diffuser plates. Panels (with diffuser plate) install flush in plaster and fiber ceilings.



Recent Multi-Vent Installations Coast to Coast

Banker's Trust, New York City Baptist Tabernacle, Atlanta Boeing Airplane Co., Seattle Ford Motor Co., 21 Buildings Graybar Electric, Illinois Inland Steel Building, Chicago National Bank of Detroit, Detroit Parke Davis Bldg. 64, Detroit Procter & Gamble Tech. Center, Cincinnati Prudential Insurance Co., Newark Travelers Insurance Co., Hartford

Write for detailed literature.

THE PYLE-NATIONAL COMPANY

MULTI-VENT DIVISION

WHERE QUALITY IS TRADITIONAL 1376 N. Kostner Avenue, Chicago 51, Illinois

SALES AGENTS IN PRINCIPAL CITIES OF THE UNITED STATES AND CANADA

Books

Land facts . . . curtain walls . . . store sites

LAND. The 1958 Yearbook of Agriculture. Edited by Alfred Stefferud. Published by the United States Department of Agriculture. 604 pp. $91/4'' \propto 51/2''$. Illus.

This neat and well-written volume was planned by a committee of 18 agronomists and conservationists, written by a battery of authors, and designed with the help of the Government Printing Office. The result is a cohesive view, in pictures and text, of America's land heritage and of the present-day use and conservation of that heritage. It is thus an invaluable reference work for anyone who has anything to do with land-from realtors to farmers, from architects to housewives. Together with four earlier yearbooks (Soil, 1957, Water, 1955, Trees, 1949, and Grass, 1948), it stands as the most thorough and authoritative source of information on natural, physical America in existence. It is available free from members of Congress (in limited numbers) or for \$2.25 from the Superintendent of Public Documents, Washington, D.C. Limited numbers of the earlier volumes are also still available

THE CONTEMPORARY CURTAIN WALL, Its Design, Fabrication and Erection. By William Dudley Hunt Jr. Published by F. W. Dodge Corp., 119 West 40th St., New York 18, N.Y. 462 pp. 10" x 71/2". Illus. \$12.75.

This is a comprehensive recitation of modern curtain-wall construction, written by an architect and editor who puts great faith in its future, declaring: "The curtain wall is now in its embryonic stage." Author William Dudley Hunt Jr., who is senior editor of Architectural Record, writes in a terse, data-packed style: "The three major components of a typical curtain-wall assembly are the frame, the facing, and the glazing." His book succeeds, perhaps as well as any book could, to cover "every known aspect of curtain-wall systems." But it is not, and does not pretend to be, a critique of contemporary curtain-wall design.

THE SELECTION OF RETAIL LOCATIONS. By Richard L. Nelson. Published by F. W. Dodge Corp., 119 West 40th St., New York 18, N.Y. 422 pp. 61/4" x 91/2". Illus. \$9.00.

The three elements that make realty valuable, according to an old saw, are: "First, location; second, location; and third, location."

In retailing, "location" also can spell the difference between commercial success or failure, although product, price, and merchandising are key factors too. In this comprehensive study, Richard L. Nelson, real estate economist, explores virtually every aspect of selecting locations for retail stores or service establishments. Beginning with a discussion of patterns of city growth, and the different ways decentralization has usually affected square, rectangular, and fan-shaped cities, he takes note of the modern trend to fewer but larger stores. He also observes that "we are still in the midst of a revolution in retailing and merchandising," which started in the twenties as a result of the growth of standard-brand products and increasing consumer mobility brought about by almost universal automobile ownership.

As president of the Real Estate Research Corporation of Chicago, Nelson has had much experience in locating stores and shopping centers in many cities. Out of this experience he has developed a "rule of retail compatibility" which is, in part, an algebraic equation that can be used to estimate the net increases in business that can be anticipated by bringing together two compatible establishments, based on the degree of customer interchange between them. Four charts in the book give Nelson's compatibility ratings for various types of store and service establishments, as guides for new shopping-center groupings and individual establishments.

HANDBOOK OF ARCHITECTURAL PRACTICE. Edited by Clinton H. Cowgill. Issued by the American Institute of Architects, 1735 New York Ave., N.W., Washington 6, D.C. 516 pp. $81/2'' \times 11''$. \$8.00.

This brightly bound volume is the eighth edition of the architectural profession's "bible" of procedure and practice. Published by the AIA, it covers everything from real estate investment analysis to a code of professional ethics. First issued in 1920, the handbook has widened its scope steadily to include new complexities of architectural practice. A panel of AIA members guided the content and arrangement of the new version, whose handsome typography is credited to Hubert Leckie and Wolf von Eckhardt.

The introduction contains an interesting statistic: the total number of people now engaged in the field of architecture in the U.S., it declares, is almost 105,000—including teachers, designers, draftsmen, government employees, etc., as well as registered architects. (Some 10,500 architectural offices employ about 80,900 of these people.) This vast audience should make the new edition of the architects' handbook something of a best-seller. END

GROVER your automation "*errand boy*" Let a Grover Pneumatic Tube System be your "full time" messenger or conveyor.

Eliminate errand boys, cut down on corridor and elevator traffic. Speed up the handling of all paper work including the transmission of blueprints. A Grover Pneumatic Tube System will speedily transmit tabulating and/or punch cards, small parts, test samples, and small assembly parts from one department to another or even building to building.

SAVE with a GROVER Transitube System

With Grover Transitubes you can completely automate your present production and material control operations, and do

away with old fashioned messenger

traffic-the tying up of already

busy phones.



TYPICAL RECESSED STATION

This type station or terminal point, allows a constant flow of orders, instructions, samples—even bottled samples, assembly materials and many other items to be continuously moving to and from vital points in your plant or offices. Each station has its own selector, which when set—predetermines the destination of each carrier. An entire assembly line can receive written instructions or orders at all of its various stations within seconds. Think of the savings.

BLUEPRINT CARRIER

ENGINEERING COUNSEL IS FREE

Grover has the most complete line of equipment available today. Engineering, Sales, Installation and Service offices are located in all principal cities in the United States and Canada.

For a complete descriptive catalog or further information, consult your yellow pages or write direct to:



"I'M NO ARCHITECT OR ENGINEER, BUT I DO KNOW THIS — SMITHCRAFT LARGE ELEMENT LIGHTING IS THE BIGGEST THING THAT'S HAPPENED IN THE LIGHTING INDUSTRY IN YEARS!" "I HAVE BEEN ASKED TO SAY A FEW WORDS ABOUT NEW SMITHCRAFT LARGE ELEMENT LIGHTING . . ."



. . suffice to say, it's the easiest big fixture to install on the market!"

ANOTHER SMITHCRAFT FIRST!

Smithcraft Large Element Lighting ... a large area luminaire with POWER-GROOVE Lamps! For more effective high level illumination in department stores, offices, laboratories, etc.

Smithcraft large element lighting

The "big idea" in lighting — to fit your own big ideas for the new and different in modern architectural settings! Simplified planning . . . with 5 sizes of *preassembled* modular units from 4' x 4' to 8' x 6'. Modules are installed individually or joined in both directions, to provide the effect and the utility of dropped ceiling construction at low cost. High level illumination, architectural in form . . . functional and unobtrusive. Shielded by Holophane Controlens® #6024, Cubex aluminum $\frac{1}{2}x\frac{1}{2}x\frac{1}{2}$ " Louvers, Plastic louvers, or Polystyrene Plastic dishes. Fast, simple maintenance and re-lamping.

Write today for the Smithcraft Catalog

Smitheraft Lighting CHELSEA 50, MASS.

America's finest fluorescent lighting

A "FLOATING" CEILING. With five different sizes of units, a wide variety of areas and patterns are possible. Modules have exact dimensions in both directions.

PITTCO[®] SASH NO.72-A

Beautiful in its simplicity, this PITTCO double-face sash is noted for its strength and sturdy construction. It is one of a wide selection of PITTCO sashes, sills, heads, jambs, bars and mouldings available for complete harmony of design in every store front. Consult your PITTCO Store Front Metal Representative, or refer to Sweet's Architectural File—Section 21.



PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS PITTSBURGH PLATE GLASS COMPANY IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED
Excerpts

What other people are saying

PUBLIC HOUSING OR RENT DOLE

Warren Jay Vinton, former assistant commissioner of the Public Housing Administration, suggests abolishing public housing and issuing "rent certificates" to low-income families instead. This was his proposal to the annual meeting of the National Association of Housing and Redevelopment Officials.

Would not most families who prefer to rent choose a private owner or a cooperative association as landlord rather than a public agency? The rules and regulations, the inspections, the continual checks and rechecks of income, and the ever present threat of eviction if incomes rise have become increasingly repugnant to families who are capable of self-support but who cannot find satisfactory housing within their means.

As to indigent families who need relief, not only for housing but also to supplement their whole family budget, if they were offered the choice between living in a public housing project or receiving a cash rental subsidy of \$40 to \$50 a month (and this is about what the federal subsidy amounts to on most new projects), does anyone doubt that most such families would choose the cash subsidy and take their chances of finding decent private housing even in this era of scarcity?

Twenty years ago, in serving lowincome families, public housing was able to take in families of regularly employed workers, including the lower-paid trade union workers. As the nation has become more prosperous and as personal incomes have increased, public housing projects are now filled with broken families, minority families of extremely low income, and other underprivileged families. As the proportion of such problem families has increased, more stable and normal families have tended to move out. The resulting concentration of problem families is both unwholesome and dangerous and makes public housing projects increasingly unpalatable to our citizens.

We should seek a more democratic scattering of such families throughout the community. Does the old rent certificate plan offer some possible solution? Rent certificates as originally conceived 15 years ago by the conservative opponents of public housing were to have been administered by relief agencies and financed by the localities. If administered by local housing authorities as part of a housing program and if financed primarily by the federal government, a large part of the original objections would be avoided. Of course, rent certificates would still involve means tests; but what are the income limits now imposed in public housing other than a rather cruel and vicious means test with eviction as the penalty for an increase in income?

With rent certificates, indigent families, like the rest of us, would have a free choice as to where they live; they could move into privately owned, cooperative, or public housing. They could even move into the suburbs which are today practically closed to low-income families. As a result, our problem families would be scattered more widely throughout the community, where normal contacts with other families would greatly help in solving their difficulties.

URBANIZATION OF THE NEGRO

The extent to which the Negro problem has become an urban problem was succinctly stated by Dr. Philip M. Hauser, director of population research at the University of Chicago, in an address before the recent National Conference on Metropolitan Growth in New York City.

Before the migration of the Negroes to the North began in any substantial numbers, in 1919, only 27 per cent of the U.S. Negro population lived in urban areas. By 1950, more than 90 per cent of the Negroes in the North, more than 90 per cent of the Negroes in the West, and 48 per cent of the Negroes in the South were living in urban places.

The urbanization of the Negro is probably the most important social problem that faces metropolitan areas today. It will face these areas for decades to come. The problem is not made simpler by the fact that we are experiencing an explosive population growth and a decentralization of metropolitan plant at the same time. Moreover, the problem is further complicated by the fact that our twentieth-century immigrants are still in the process of assimilation.

MISGUIDED PLANNING

Despite what the city planners say, most people still want to live in one-family houses in the suburbs. Such, at least, is the editorial opinion of the Journal of Britain's Town and Country Planning Association.

Planners in the U.S. are disposed to regard the continued growth and concentration of great cities as inevitable, beyond social control, a thing to be accepted *continued on page 178*

TEMPRITE water coolers serve PRUDENTIAL

	RUDENT	TIAL			ted ck.
			**		ect
					, er be
			******		41-story Prudential Building, Chicago, erec 201187 crisenes restina on Niadara bedro
					ž
					in g
				881 (88	blic
			****		B
				125	tia
					len
					2
					a ;
	*********	8 * * 8 * N			E L
					-ste
100		68. · · ·			4
1			10.00		
					C. Contraction
		and the second second		and in	
		10121		and the second second	
- 1- 345 -			ц:		****
 - 345 -			ц. 		
. हन्ह.					*
14. 14.					*
- 14. - 14.					*
			1		*
			1		*

			li i		*
Con	nparative	analy	yses h	ave le	ed The
Pruc	dential l	nsuran	ce C	ompa	ny o
Pruc	dential l	nsuran	ce C	ompa	ny o
Pruc	dential li erica and	nsuran 1 man	ce C y oth	ompa er fin	ny o ancial
Pruc Ame com	dential la erica and mercial a	nsuran 1 man 1nd ind	ce C y oth	ompa er fin	ny o ancial
Pruc Ame com to se	dential la erica and mercial a electTemp	nsuran 1 man ind ind prite	ce C y oth	ompa er fin	ny o ancial
Prud Ame com to se Drin	dential li erica and mercial a electTemp iking W	nsuran 1 man ind ind prite	ce C y oth	ompa er fin	ny o ancial
Prud Ame com to se Drin	dential la erica and mercial a electTemp	nsuran 1 man ind ind prite	ce C y oth	ompa er fin	ny o ancial

Reason® A clearcut edge in quality...acleancut edge in styling.

Consult Sweet's Architectural file or clip coupon for details.

City_

TEMPRITE PRODUCTS CORPORATION P.O. Box 72K, E. Maple Rd., Birmingham, Mich. h. Send me literature on Temprite self-contained water-coolers. Company________ Name______ Address______

Zone_

State

Excerpts

and made the best of. To this school of thought the crucial problem is that of traffic congestion. Its main specifics for solution are two: provision for more rapid movement within cities, by means of new freeways and highly organized public passenger transport systems; and highdensity apartments for great numbers of city dwellers of all classes.

But so far, a generally acceptable form of high-density residential development has not been found. In the U.S., as in Britain, the individual home-seeker who has any freedom of choice prefers the onefamily house, even the detached or "ranch" house. Can he or she be weaned from this preference by the preaching of a new gospel of intensified urbanity? We doubt it. Is not the attempt essentially a surrender of planning ideals to insensate forces inimical to a good family life and a healthy society? That an important minor-



DRINKING FOUNTAINS



PANTRY FAUCETS

Fiberglass finish is colorful and durable! You can choose from five decorator colors at no extra cost! Choose your pantry faucet and fountain fixtures, too, from HAWS complete line of facilities for every purpose.

HAWS Series 2800 is a one-piece fiberglass molded unit with in-

tegral receptor and deck-top. No cracks or joints for water ac-

cumulation. It's specifically designed for simple installation in

continuous counters; squared ends butt snugly against adjac-

ent counters. Decks slope to receptor for complete, unhindered

ARCHITECTS, BUILDERS, SCHOOL OFFICIALS ... here's an idea worthy of your attention. Write for illustrated literature, today.

LABORATORY FAUCETS



drainage.

ity of people could be satisfied by life in multistory flats close to the cultural institutions characteristic of great cities we do not doubt. But is it practical politics to gratify this special taste by creating a city structure obnoxious to the great majority? In a free society, is it likely that the mass of city dwellers will remain within residential developments that thwart their evident desires? Planners disposed to capitulate to the blind forces of city growth must think again.

URBAN RENEWAL'S TWO FAULTS

In an editorial in The Appraisal Journal, Boyd T. Barnard of Philadelphia, past president of the National Association of Real Estate Boards, advocates including luxury apartments in urban renewal projects and the abolition of the small project.

The urban-renewal program has two great weaknesses:

First, administration. In the FHA 220 financing program there is no place for construction that will appeal to the uppermiddle- and upper-income classes which are vital to the complete success of the urban renewal program. On the basis of what FHA will now insure, builders of necessity must confine their efforts to small rooms and relatively small apartments. As these projects are completed and rented to middle- and lower-income groups, downgrading will begin and the same process that has put us where we are will be started all over again. If, however, in a renewal project provision were made for some luxury apartments which could be financed on the same basis as medium-to-low-priced units through FHA. most of our major metropolitan areas would find a surprisingly fine response from those persons now burdened with large houses who are past middle age, and who want to live graciously.

Second, the present method of urbanrenewal fund allocations to communities makes it impossible for renewal to work in a logical manner. Renewal is something you cannot peck at. It is too big. Its value and success lies in the size of the projects. It must establish new and environmental characteristics over a wide area of the community. To allocate funds on the basis of the 1950 census [the present method] is suicidal to the entire idea. For the administration to say that, if it is done otherwise, only one-fourth of the localities whose applications are on file would receive funds, misses the point completely. Better that they have nothing than funds which are inadequate to create a new neighborhood. We have seen already the fallacy of insignificant projects. They accomplish nothing. They only create greater problems. Until adequate funds are provided it is far better to give fewer communities enough to do the job than to give every community an insufficient amount to do any job. END



bright future

Buildings constructed and decorated with Stainless Steel are cleaner, more attractive places to work and live. When you're planning a building . . . design it, improve it and protect it with McLOUTH STAINLESS STEEL.

SPECIFY MCLOUTH STAINLESS STEEL HIGHQUALITY SHEET AND STRIP

for architecture

MCLOUTH STEEL CORPORATION DETROIT, MICHIGAN MANUFACTURERS OF STAINLESS AND CARBON STEELS

For the most comfortable **apartments** under the sun

Lustragray glass in new Versailles Apartments, Denver, Colorado; Architects: Huntington, Brelsford & Childress, of Denver; Glazier: Gump Glass Company, Denver



Another AMERICAN Lustragray installation ...

the glass that reduces sun glare and heat without sacrificing vision

With apartment building on the upswing, there is a public demand for maximum comfort and modern beauty. You can achieve *both* by specifying American Lustragray sheet glass.

The comfort comes from the reduction of sun glare and heat—from the minimizing of eyestrain and fatigue. Lustragray does this automatically, with no attention required.

The beauty comes from Lustragray's neutral shade, which complements all colors. Outside, it gives an attractive, highly lustrous appearance to the building and provides an opaque effect that increases privacy. Lustragray offers you these premium features of comfort and beauty, making your new buildings easier to live in and the price is right. Consult your phone directory now for your nearest AMERICAN distributor or glazier.



WSW 7368

General Offices: FARMERS BANK BUILDING . PITTSBURGH 22, PA.

AMERICAN-SAINT GOBAIN CORPORATION is a merger of the former American Window Glass Company, Pittsburgh, Pa., and the former Blue Ridge Glass Corporation, Kingsport, Tenn. (which was a wholly-owned subsidiary of Saint-Gobain of Paris, France). American Window Glass Division plants are located in Arnold, Jeannette, Ellwood City, Pa.; Okmulgee, Okla. Blue Ridge Glass Division plant is located in Kingsport, Tenn.

NEW concept in food service cold storage doors: Jamison JAMOLITE*-Lightweight Plastic Doors



better appearance • improved performance • lower cost

• IT'S HERE TODAY —a revolutionary new concept in cold storage door design and construction a door as easy to install as a household door. For the Food Service Industry, JAMOLITE Lightweight Plastic Doors now bring new, practical advantages:

> smooth, easy-to-clean surface rigid, one piece construction will not warp superior insulating efficiency in both door and frame

Investigate this brand new Jamison development for either replacement or new construction. Write today for all the facts on new JAMOLITE Lightweight Plastic Doors to Jamison Cold Storage Door Co., Hagerstown, Md.

*Jamison trademark



M-DECK Provides Low-Cost



Serving the Construction Industry Through Fabrication of Structural Steel, Steel Plate Components, and Building Products

Roof Structure, Diaphragm Bracing and Acoustical Ceiling Combined!

No Purlins or Bracing Required . . . M-Deck Sections Span from Rigid Frame to Rigid Frame



of Steel and Aluminum

OTHER MAHON BUILDING PRODUCTS and SERVICES:

- M-Floors (Electrified Cellular Steel Sub-Floors)
- Insulated Metal Curtain Walls
- Underwriters' Rated Metalclad Fire Walls
- Rolling Steel Doors (Standard or Underwriters' Labeled)
- Steel Roof Deck
- Permanent Concrete Floor Forms
- Acoustical and Troffer Forms
- Acoustical Metal Walls and Partitions
- Acoustical Metal Ceilings
- Structural Steel Fabrication and Erection
- Steel Plate Components—Riveted or Welded
 - ☆ For INFORMATION See SWEET'S FILES or Write for Catalogues

THE R. C. MAHON COMPANY • Detroit 34, Michigan Sales-Engineering Offices in Detroit, New York and Chicago Representatives in all Principal Cities



The new Pacific Northwest Pipeline Corporation Building, Salt Lake City, Utah. Among the many handsome appointments contributing to its functional excellence are Nibroc Cabinets, Nibroc Towels and Nibroc Toilet Tissue. ARCHITECTS: Slack W. & David Winburn. SUPERVISING ARCHITECTS: Woolley and Mohr. BUILDER: Del E. Webb Construction Company

NIBROC[®] Cabinets and Towels stand ace-high with Architects!

America's leading architects, for more than 35 years, have been choosing Nibroc Cabinets and Nibroc Towels for their finest industrial-commercial buildings because they contribute so much to efficient, economical operation.

Nibroc Towel Cabinets are ruggedly constructed of heavy 20-gauge steel in chromium, stainless steel or heavy white enamel finish. Also available in beautiful, new Kromotex, in soft pastel green, gray, bronze-and in prime finish. Recessed dispensers and waste receptacles in single or separate units.

New Nibroc Towels are stronger, more absorbent, softer than ever. Because of their superior quality they reduce waste-cut cost-per-user-bring sharp savings in annual towel cost.

Look in the Yellow Pages under Paper Towels for nearest distributor. Or write Dept. NU-3. Boston.

BROWN TO COMPANY

General Sales Offices: 150 Causeway St., Boston 14, Mass. Mills: Berlin and Gorham, N. H.

See Sweets Catalog for information about Nibroc Cabinetswall, floor model and recessed.

Jutshines them all!

SAPPHIRE

HORIZONTAL SLIDING ALUMINUM WINDOW

The Sapphire by Peterson—the very finest in commercial weight aluminum windows—is supplied in widths to 10', vent heights to 6'6", and with single- or double-glazing.

SAPPHIRE CURTAIN WALL FEATURES

The Sapphire is built for single- or multi-story light wall or heavy grid curtain wall construction, with a designed-in provision for both vertical and horizontal expansion. It offers a choice of panels up to 2" thick. Sliding sash and panel sight lines are uniform for pleasing appearance. The specially designed mullion spline and flashing are engineered for leak-proof construction. Alternate mullions are available for special conditions and contours. Send coupon for complete technical information and prices.

Peterson Window Corporation

FERNDALE 20, MICH.

STATE

IN SWEET'S ARCHITECTURAL FILE 17A

A PRODUCT OF

706-B LIVERNOIS

NAME

ADDRESS

CITY

FOR COMMERCIAL, INSTITUTIONAL AND FINE RESIDENTIAL CONSTRUCTION

SLIDING ALUMINUM WINDOWS



THE PENGUIN A medium-weight horizontal rolling window for residential and light commercial construction. Built to high Peterson standards in traditional and contemporary styles. With prowler-proof ventilation.



Air-Skreen sparks new ideas in SUPERMARKET PLANNING

Air-Skreen is an all-new integrated display and storage merchandiser which saves steps, reduces product handling, cuts labor costs; by providing fast, easy rear-loading of display from within storage cooler itself. It can be used in separate, single units—or in multiple, continuous display. For details consult Tyler Distributor listed in Yellow Pages, or send coupon.





Every store has its own requirements, but Air-Skreen opens new solutions, new arrange ments, new shortcuts to better store layout, more efficient operation.



Air-Skreen makes possible various perimeter arrangements which provide short, direct flow of merchandise from receiving to combination sales and storage cooler.

Canada: Tyler Refrigerators, 732 Spadina Ave., Toronto. Export: Tyler Refrigeration Int'I., C.A., Apartado Postal 9262, Caracas, Venezuela, S.A.



New Holostud clip ... makes metal base a positive ground for plaster

Gold Bond's new Holostud Metal Base Clip instantly attaches the metal base direct to the stud—always at the proper distance for plastering. Plasterers can use the base as an accurate ground, assuring a smooth, even wall.

This new clip eliminates the need for shoes and starter clips ... holds the Holostud firmly, and supports the bottom edge of the lath. Grouting is easier, too, because the metal base can be attached to the Holostud and grouted *before* the lath is applied.

Find out how this new addition to the Gold Bond® Holostud line can simplify work on your next building. Write for technical literature to Dept. AF-39.

NATIONAL GYPSUM COMPANY, BUFFALO 13, N.Y.



Clip springs onto stud



Grouting before lathing



a step

Lath rests on clip



New Metal Base Clip holds the base directly to the stud, making an accurate ground for plastering.



ahead of tomorrow

HASKELITE the Curtain Wall Panel that's permanently insulated !

(It never absorbs moisture)

Warm climate . . . cold climate . . . Haskelite curtain wall panels mean permanent insulation! For here is the one curtain wall panel that is unaffected by moisture.

And here's why: Haskelite cores will not *absorb* or *transmit* moisture. Each Haskelite panel is constructed with the facing of your choice bonded to an interband, when required, and then to a foam core. Result: insulating value that lasts for the life of the panel.

To meet your specific requirements, Haskelite laminated panels are available in a wide range of stock sizes, thickness and facings... or in special sizes to your order. And you can specify Haskelite panels with confidence, for in the laminating industry no other manufacturer has Haskelite's experience... Haskelite's know-how.

For complete information write: Haskelite Manufacturing Corporation, Dept. BN-3, Grand Rapids 2, Michigan.

- Lightweight . . . easy to erect!
- High impact resistance!
- Flat, wave-free surface will not buckle unaffected by temperature changes!
- Unlimited choice of facings-plastic; stainless steel; aluminum; porcelain; many others!
- Permanent insulation-does not absorb moisture!

SEE HASKELITE CATALOG IN SWEETS ARCHITECTURAL FILE 3E/HA

Haskelite Architectural Doors

• Architectural doors have been added to the line of quality doors built by Haskelite. Newly introduced hollow core doors, now available to specification, are specially built for use in institutional or commercial buildings. Complete range of standard sizes—or may be ordered in special lengths in a wide variety of facings.



EXECUTIVE HOUSE . . . designed for lasting beauty, the new 40-story Executive House in Chicago features Haskelite stainless-steel-faced, glass-foam-core curtain wall panels. Architect, Milton M. Schwartz & Associates, Inc., Chicago; Contractor, Wacker Construction Co., Chicago.



HASKELITE MANUFACTURING CORPORATION Grand Rapids 2, Michigan

A subsidiary of Evans Products Company, Plymouth, Michigan





Model HE Flow Therm packaged water chillers— 20 through 60 tons



Flow Mizer cooling towers-20 through 175 tons



Air handlers-4 types in 40 models from 665 to 19,200 cfm



Model DE Flow Therm packaged water chillers 20 through 125 tons



Flow Mizer evaporative condensers Capacities to 200 tons

CONTAINED

Self contained packaged

from 3 to 15 tons, air or water cooled



Multi-zone air conditioners— 5 models from 4,060 to 19,200 cfm





STEMS

Self contained packaged air conditioners-24 models from 20 to 60 tons, air or water cooled



THE CONSERVATIVE CARPENTER continued from page 105

unanimous reconfirmation. But students of labor judged that when he did not plead the Fifth Amendment in refusing to answer the Senate Rackets Committee's questions regarding his Indiana indiscretions, and when he wrote a placating letter to George Meany, he committed himself to staying within the purlieu of organized labor. There is still a possibility, however, that a too zealous application of the Ethical Practices Code will persuade Hutcheson to walk out. If he does, the rest of the building trades will most likely follow.

The good friends

Just as the Carpenters' original toughness has turned into hardening of the arteries, so has the strong rapport between union and contractor gradually become an infirmity. As it is now, the Brotherhood's wage demands are only perfunctorily resisted by the contractors, the role of the Carpenters' local or district council as a reliable employment agency is accepted by most contractors without question, and the debate between the Carpenters and the employers is a dull series of "fixes" rather than a creative exchange.

Professor John T. Dunlop of Harvard's Department of Economics, longtime impartial chairman of the jurisdictional machinery for the construction industry, has said: "The Carpenters won jurisdictional battles with many other unions and ultimately achieved cooperation with their employers in part because the general contractors didn't want to subcontract their work; the contractors have backed up the Carpenters' claims to new skills because they would rather not have to hire, say, a sheet-metal-working subcontractor with his own crew of men to put in the metal door frames that on-the-job carpenters could easily install themselves." But even such impartial observers as Professor Dunlop agree that the acquiescence of the contractors has helped embolden the union chiefs to get what they can. And too little of what they get seems to filter down to the working Carpenters.

It may be that the problems of the Carpenters and their employers have become so tangled that only an assault from Washington can set things aright. The federal government certainly seems determined to accomplish farreaching reform within the building trades both for the benefit of the construction worker and for the paying public. The assault appears to be shaping up on three fronts:

▶ First, there is Senator McClellan's Rackets Committee, where Hutcheson, Johnson, Raddock, and various of their friends are being exposed to the heat of Senate spotlights and public indignation.

> The second front is the labor legislation being urged, on the one hand, by Senator John Kennedy of Massachusetts and, on the other hand, by the Administration. The Administration bill, far more complete than Kennedy's, would go far to liberate all labor from autocracy, racketeering, and outdated practices. It seeks to accomplish these objectives by requiring the reporting of union elections and the registering of union finances, and by prohibiting some "secondary boycotts" (such as those which have allowed the Carpenters to picket contractors employing subcontractors who have failed to recognize Carpenter jurisdiction). It seeks, in other words, to take away from the malpracticing unions their strongest weapons. Kennedy's bill, by contrast, seeks to bring malpracticing unions in line with the law by legalizing a number of current illegalities (such as giving the union the exclusive right to determine the experience qualifications of a workman).

The third front is the National Labor Relations Board. The NLRB had virtually no experience with the building trades area of unionism prior to 1947 when the Taft-Hartley Act was passed. In the dozen years since, it has tried to make up for its lack of experience by cautious observation. And last year it struck out boldly against the major illegality of the building trades: the closed shop. If NLRB General Counsel Jerome D. Fenton succeeds in policing this industry-wide policy and in outlawing effectively the closed-shop practice, he will also have succeeded in helping the building trades unions emerge from their private, feudal world. After that it will be possible to hope, both for the Carpenters and for all workers in the building industry, that they can come to terms more honestly, and even more profitably, with the promises of the future. END

Call the man from Fenestra for Entrance doors at the lowest installed cost!

They look like costly custom-made doors, but these are *stock* doors by Fenestra, specially engineered for public buildings.

These new Fenestra[®] Hollow Metal Doors swing open smoothly, close quietly. You save year after year on maintenance because Fenestra Doors can't warp, swell, stick or splinter. They last a lifetime! And in addition to durability, you get the lowest installed cost because:

1. You buy a *complete package*—door, frame, hardware, completely machined at the factory to eliminate on-the-job cutting and fitting.

Erection is fast—one man with a screw driver can install a door in minutes.
 You have a complete selection of door types (1³/₈" and 1³/₄") of distinctive designs and features—all mass produced. Custom quality at stock door prices!

Ask your Fenestra representative (listed in the Yellow Pages) to help you in your selection and specification of doors, frames and hardware and to schedule fast delivery from stock. Or, write to Fenestra Incorporated, Dept. AF-3. 2296 East Grand Boulevard, Detroit 11, Michigan.

from Fenestra be your "door man" Let the man Fenestra HOLLOW METAL DOOR FRAME • HARDWARE UNITS

YOUR SINGLE SOURCE OF SUPPLY FOR DOORS . WINDOWS . BUILDING PANELS . CURTAIN WALLS

Many Weyerhaeuser 4-Square Lumber and Building Products...

BOARDS: Seasoned before surfacing to

size. Available in a wide range of species

SIDINGS: Available in popular patterns

END-MATCHED LUMBER: Items include wall and roof sheathing, sub-flooring, finish flooring, drop siding and ceiling.

for beautiful exterior stylings . . . in a broad selection of grades and species.

and grades.



DIMENSION: Kiln-dried lumber contributes to sound, durable construction.



to help you give your clients buildings that will serve them well

The broad selection of Weyerhaeuser 4-Square trademarked products gives you a wide range of lumber and lumber specialties from which to choose. They are your assurance of securing qualities which parallel your specifications. As the Weyerhaeuser 4-Square line of lumber products grows, it provides architects greater structural and design latitude in the creative use of wood.

With lumber trademarked Weyerhaeuser 4-Square, you are assured of lumber that is scientifically seasoned, precision manufactured, accurately graded and carefully handled and shipped. The complete line of Weyerhaeuser 4-Square products, in a wide choice of species and grades, includes boards and dimension, panelings, sidings, floorings, mouldings, steppings, plywoods, finish and trim, plus many specialty products such as Nu-Loc lumber and Loc-Wall paneling.

This broad line offers a choice of materials with which to design sound, attractive, economical structures. Architects specify with confidence when they select lumber items carrying the Weyerhaeuser 4-Square trademark. This trademark, and the quality products for which it stands, contributes substantially toward complete satisfaction in the finished structure.

Weyerhaeuser Sales Company FIRST NATIONAL BANK BUILDING, ST. PAUL 1, MINNESOTA



ARE YOU UP TO DATE ON



Do you know the many ways this strong, flexible, economical method of construction can serve you and your clients?

NEW TEST DATA* PROVES UNUSUAL LATERAL STRENGTH OF Reinforced Brick Masonry

ideal for the construction of

HIGH, THIN WALLS VIADUCTS PIERS GIRDERS FOUNDATIONS RETAINING WALLS STORAGE BINS SWIMMING POOLS SANITATION STRUCTURES

> as well as for SCHOOLS HOSPITALS COMMUNITY CENTERS

that can withstand the forces of Tornados, Hurricanes, Quakes and even Atomic Blasts Have you considered recently the many advantages of Reinforced Brick Masonry – extra strength, extra rigidity, flexibility of use, attractive exterior finish, competitive costs?

Today, the use of R.B.M. is almost unlimited. For example Architect, Joseph Galabowski used 65 ft. clear span R.B.M. girders in St. Hedwig's Church, St. Louis. These R.B.M. girders proved less expensive and more efficient in use than other structural materials. Architect Galabowski is now using a continuous R.B.M. beam 106 ft. long in the Little Flower School, Springfield, Ill. In planning schools, hospitals or other buildings you also can provide a safe refuge from such disasters as tornados, hurricanes, quakes or blasts with an R.B.M. core that has proved lateral force resistance. For complete information on R.B.M., call in your local brick manufacturer or the field engineer from your nearest S.C.P.I. regional office, or send \$1.00 for 64-page Research Report and Structural Design Manual, together with 11 informative "Tech Notes." Address your request to Dept. AF-93.



*Structural Clay Products Research Foundation Research Report No. 7 – "Resistance of Structural Clay Masonry To Dynamic Forces"

Every Architect and Engineer should have a copy of this new DESIGN MANUAL and TECH NOTES

Explains Results of Lateral Force Tests with Atomic Blast at Yucca Flats; also many uses of Reinforced Brick Masonry. A complete structural engineering Design Manual for quick energy loading. Explains what resistance to high lateral forces you can obtain with Reinforced Brick construction. For your copy of Manual and Tech Notes, send \$1.00 today.

Structural Clay Products Institute 1520 18th Street, N. W. Washington 6, D. C.



but WASCO FLASHING does...

Only Wasco offers a complete line of flexible flashing materials for all through-wall and spandrel applications ... copper-fabric, copper-asphalt, copper-lead, fabric, plastic, aluminum. Contact your Wasco representative for complete information about flashing for any type of construction.



ACTION ON RENTAL HOUSING continued from page 121

The shift of families to higher-priced rental units would make available more apartments for middle-income families seeking rentals.

▶ Relax FHA rent controls, the most irksome restraint on builder and investor. Many owners of FHA rental buildings look forward to the earliest possible conventional refinancing of their properties to escape rent ceilings. This unnecessarily dilutes the actuarial soundness of FHA insurance, for it is usually the more successful projects that are able to refinance. Successful projects should be granted greater freedom in setting rents. After four to six years of 98 per cent occupancy or higher, a 15 per cent rent increase should be granted automatically; after ten years of successful operation, all restriction should be removed. Normal market competition in most areas would prevent excessive rent hikes.

▶ Lengthen amortization, to provide lower initial rents in FHA rental projects. At present, a 4½ per cent, 40-year FHA mortgage of \$10,000 per apartment requires about \$650 for the first year's debt service. Under a revised "levelpayment" plan, first-year amortization would be reduced from \$200 to \$90, with a rent reduction of \$110 a year or \$9 a month. If this were lengthened to a 60-year levelpayment plan, first-year debt service on each \$10,000 would be \$165 less than present schedules and rents could be lowered \$14 a month. The U.S. would probably find 100-year mortgages, tried in some European countries, not to its taste, but extension of present rental mortgages from 40 years to 50 or 60 years would be a worth-while experiment.

▶ Liberalize income-tax treatment, by freeing the builder of the burden of federal personal income taxes on income from new rental housing and thus lower initial rentals. This could be done by 1) treating dividends equivalent to depreciation allowance as a taxfree recovery of capital, 2) granting full or partial exemption to all dividends, or 3) treating rental housing corporations as partnerships for personal income-tax purposes. Such tax concessions might be limited to the first ten years of a project's life.

Equalize taxes on home owners and renters, to make it as attractive to rent as to own a home. Under present incometax law, home owners and cooperative unit owners can deduct real estate taxes and mortgage interest, which is estimated to give the average home owner a 10-a-month reduction in housing expenses. In the higher tax brackets savings are even more substantial. The renter can make no equivalent deductions. A good case exists for changing the tax law to equalize treatment of home owners and home renters, either by eliminating the privilege of the former or extending it to the latter.

► Expand mortgage capital, by allowing the builder or developer to issue serial bonds or debentures on rental projects in the same amount and for the same term as a mortgage, with insurance premiums paid to FHA. At present mortgage funds are provided mainly by mutual savings banks and life insurance companies. There is reason to believe that pension and trust funds would respond to some more appealing debt instrument such as the one proposed, similar to the bonds of local public housing authorities, having both FHA insurance and Treasury guaranty. In the event of default, bonds or debentures would be redeemed or payments continued by the government. Bondholders would not be involved in tedious, expensive foreclosures or other real estate legalities.



The NEW Wascolite Sealed Double Dome provides dead air insulation that eliminates condensation and drops heat loss to the minimum. Latest development of Wasco research, the Sealed Double Dome combines the superior weathering properties of an acrylic Skydome with a stable, strong base sheet of fiber-glass reinforced acrylic — the two chemically fused into one unit. Available for curb mounting or as a self-flashing unit. See Sweet's Architectural File 20a/Wa



WASCO PRODUCTS, INC. CAMBRIDGE 38, MASS. TORONTO, CANADA



I.B.M. building being erected in Detroit, Mich. Architect: Pedersen & Tilney of New York. Gen. Contractor: R. E. Dailey & Co. of Detroit, Mich.

MOYNAHAN CURTAIN WALLS go UP in a JIFFY STAY UP forever

Erection started July 1. Five weeks later the entire building was enclosed with Moynahan aluminum curtain walls . . . walls that will remain weathertight during the years ahead.

Moynahan curtain walls assemble rapidly because they are scientifically engineered and precisely manufactured. Their resistance to the forces of nature has been proven over and over again in the wind tunnel at Flat Rock. Here, wind and water have been smashed against standard curtain walls in excess of 120 miles per hour without any indication of leakage or seepage.

This is why all Moynahan Curtain Walls and component parts are guaranteed to meet or surpass the most rigid building standards, and why you can specify these products with confidence.





ISOMETRIC VIEW DETAIL

- Horizontal Expansion
 / 1. Neoprene—Panel Gaske
 - 2. Paper Honeycomb with Perlite Filling
 - 3. Spring Actuated Panel Stop
 - 4. Stainless Steel Spring 5. .020 Continuous Aluminum
 - Flashing
 - Neoprene Glass Gasket
 Plate Glass
 - 8. Spring Actuated Glass St Vertical Expansion

Detail of Moynahan modified series AW curtain wall.





More Nesbitt Versatility!

The Nesbitt Roommate

This compact, attractive year-round cabinet air conditioner provides allseason comfort quietly and economically. It meets both summer and winter requirements automatically. ½ to 5 tons cooling capacity . . . 35 to 100 MBH heating capacity. Ceiling, floor, wall installations. Publication 600-1.

Nesbitt Cabinet Heaters

Compact, quiet, trouble free, Nesbitt Cabinet Heaters offer a total of 413 standard model installation arrangements! All are available in a variety of motor speeds and capacities for steam, hot water or electrical systems. Publications 403-2 and E-403. **Versatility** is the word for Nesbitt Sill-Line, the high capacity finned tube radiation with virtually unlimited application. Its sleek modern styling and beauty offers full freedom of design and flexibility in planning. Its standard accessories meet the requirements of every installation.

But Nesbitt Sill-Line offers more than beauty and versatility. Specify it in your plans and you assure draft-free comfort, floor to ceiling, wherever corridors, outside walls or extended window areas pose a thermal problem. Send for Nesbitt Publication 30-1 for full information.



Made and sold by John J. Nesbitt, Inc., Philadelphia 36, Pa.



ST. JOHN'S CHURCH, McLEAN, VIRGINIA

Architects: Francis L. Koenig, combined with Soulé & Donnally Structural Engineer: Edward J. Scullen & Assoc. General Contractor: Burroughs & Preston Structural Steel Fabricator: Southern Iron Works

Octagonal auditorium roof fabricated from USS Structural Steel makes a pleasing design. This shape permits maximum seating close to altar.



Church building costs reduced with Uss Structural Steel



In the new St. John's Catholic Church at McLean, Virginia, USS Structural Steel permitted an unusual modern design, assured strength and safety, and resulted in low costs.

The building has an octagonal dome which meant that each steel member had to fit perfectly. Structural steel is easy to fabricate for this kind of job because it can be cut and welded with a minimum of labor and is especially suitable for arches and long roof spans. Where weight is a problem, the high-strength steels such as USS Man-Ten, Tri-Ten and Cor-Ten brands permit lighter construction without sacrifice of strength. These steels can be formed, welded or riveted in much the same manner as regular structural carbon steel.

Quick deliveries! Recent expansion of production facilities assures quick deliveries and continuing availability of steel shapes and plates to accommodate the increasing demands of the construction industry.

For your copy of "Hot Rolled Carbon Steel Shapes and Plates," a handbook containing details, dimensions and weights, write to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

USS, MAN-TEN, COR-TEN and TRI-TEN are registered trademarks

United States Steel Corporation—Pittsburgh Columbia-Geneva Steel—San Francisco Tennessee Coal & Iron—Fairfield, Alabama United States Steel Supply—Steel Service Centers United States Steel Export Company

United States Steel



YOU SPECIFY MEET THESE **10 BASIC REQUIREMENTS?** 1. Rugged - hard to damage

- 2. Clean-cut, snug-fitting edges
- 3. Smooth, solid base for felts
- 4. No worry about punctures or depressions that become weak spots under felt
- 5. Withstands heavy traffic 6. Strong, rigid, crush-resistant 7. Uniform density and thickness 8. Permanent, efficient insulation 9. Over 30 years job-proved service 10. Billions of feet in use

IT WILL IF YOU SPECIFY JOB-PROVED CELOTEX BRAND ROOF INSULATION BOARD

You get the "BASIC 10" requirements when you specify the CELOTEX brand . . . assurance of job-proved performance . . . and then some! You know what to expect of Celotex Roof Insulation ... not how it SHOULD, but how it DOES perform. That's what we mean when we say Celotex is "PERFORMANCE-PREDICTABLE!"

Dependable "REGULAR" . . . asphalt-coated "PRESEAL" . . . and exclusive "CHANNEL-SEAL" . . . all 3 in a variety of thicknesses.



Catalog 10a Ce. Write for specifications, Samples, Information Manual

AVAILABLE IN 3 TYPES



See 1959 Sweet's Architectural File

THE CELOTEX CORPORATION, 120 SOUTH LA SALLE STREET, CHICAGO 3, ILLINOIS

DOES THE ROOF INSULATION

There can be no compromise here!



The prime coat is the basic foundation that determines the long-lasting performance of coatings

There can be no compromise with the prime coat - it is the basic foundation, it must take hold and adhere tightly, it must provide a sound, compatible base for the finish coating. It is here that Rust-Oleum's experience as corrosion-resistant specialists can help you. Whether it's a shop coat by cialists can help you. Whether it's a shop coat by the fabricator, or job site application over struc-tural steel, Rust-Oleum has the right primer for the specific job – from quick-drying primers for shop coating, unique primers to apply directly over rust, or bare metal primers. For the fullest measure of protection – specify the Rust-Oleum System of primer and finish coat. Your nearby Rust-Oleum Industrial Distributor and your Rust-Oleum Factory Specialist will be happy to work hand-in-hand with you.

the last and the last last the the last and the last and the last has last had



S featuring actual





The Newer Schools TRUSCON'S Fast, Economical

HIGH SCHOOL

Chardon High School, Chardon, Ohio. A. E. Isdells, Architect. Hambden Construction Co., Contractor.



St. Jude's, Wheaton, Md. Johnson and Boutin, Architects. Victor R. Beauchamp Associates, Inc., Contractor.

KEZZ



ELEMENTARY SCHOOL

Bon Air School, Kokomo, Ind. Perkins and Will, Architects. Glaser and Glaser, Inc., Contractor.

18. Y N ł

COLLEGE

Farleigh Dickinson College, Teaneck, N. J. Engineering Science Building Fellheimer and Wagner, Architects. Frank W. Bogert, Contractor.

go VISION-VENT... Window Wall Construction

Big feature of Truscon's Vision-Vent Window Wall is its complete *flexibility*. You can select practically any type of window-double-hung, architectural projected, intermediate projected, you name it. Arrangement of fixed lights, operating lights, insulated panels is completely interchangeable. Choose either steel or aluminum.

Truscon's new Supercoat Finish also available in colors. Supercoat is the amazing factory-applied painted surface that eliminates all field painting of steel window walls, staves off maintenance painting for many a year.

Good insulating value, fire-resistance, economy, ease and speed of erection, superior daylighting and ventilation are other Vision-Vent[®] advantages. And, Vision-Vent blends beautifully with all other construction materials.

Where you are faced with too-high costs and too-low budgets, consider building around Vision-Vent. Send coupon for facts.





New, stronger, more versatile Truscon "O-T" Open Truss[®] Steel Joist now designed and engineered to 20,000 psi working stress. Balances with all other structural components. Certified by the Steel Joint Institute. Send coupon for facts.



Republic Steel Lockers now Bonderized to take and to keep a finer enameled finish. Made by Republic's Berger Division, these high-quality school lockers will retain their good looks in spite of generations of exuberant high-schoolers. All locker sizes, styles. New, improved handle. Complete planning, engineering, installation service. Send coupon.

Truscon Hollow Metal Doors for most satisfactory service in hightraffic school locations. Bonderized to take and hold a fine painted finish. Can't warp, swell, sag, shrink. Smooth, modern, flush design. Sizes and styles for every interior, exterior application. Complete with frames, choice of hardware. Send coupon.





World's Widest Range of Standard Steels and Steel Products

STEEL

REPUBLIC STEEL CORPO DEPT. AF -7359 1441 REPUBLIC BUILDING •	
Please send full information Usion-Vent Window Wal Republic Steel Lockers	lls 🛛 "O-T" Steel Joists
Name	
Company	
Address	
CityZor	neState





For freedom of design the beauty of WOOD

Elegance. Warmth. Livability. Wood offers natural beauty in a variety of species . . . infinite combinations of grains, tones, physical properties . . . qualities to stimulate the architect's imagination.

To this aspect of wood, add its versatility, its *rightness* for functional or decorative use indoors and out. Structural framing, siding, flooring, paneling, cabinetry . . . wood holds the solution to your next design problem.

For new data on designing with wood, write: Wood Information Center NATIONAL LUMBER MANUFACTURERS ASSOCIATION 1319 18th St., N.W., Washington 6, D.C.

Live, Work, Build Better with Wood





Seats "Take Off"

DEIND

on America's First Jet Airliner!

Boeing Selects Olsonite No. 42 Seats

The most modern and most luxurious airliner to fly America's airways is the Boeing 707 Jet Airliner. Besides its amazing four and one-half hour flight time, New York to California, this new jet airliner features the finest appointments, the most comfortable and luxurious interiors air passengers have ever enjoyed.

In keeping with their high quality standards, Boeing selected Olsonite No. 42 Seats. These Olsonite Seats offer an outstanding record of permanence and attractiveness. Made of one material—all the way through—there is no applied finish to crack, peel or wear away.

For complete Olsonite catalog, please address your inquiries to:



Olsonite No. 42



SWEDISH CRUCIBLE STEEL COMPANY

8801 Conant Avenue, Detroit 11, Michigan ORIGINATORS OF THE SOLID PLASTIC SEAT

59-A1







JOHNS-MANVILLE <u>MOVABLE</u> WALLS provide architects with modular components that are functional and attractive in appearance for the design of space-division layouts. They can be erected, dismantled and relocated over and over again.

There is a J-M Movable Wall to fit any building requirement or budget need. J-M Movable Walls are furnished and erected—complete with all items such as doors, hardware, trim and glass —by J-M trained construction crews.

Multiple space division made easy...

Johns-Manville <u>Movable</u> Walls provide dignity, beauty and flexibility

The architectural designer who developed this presentation was given the following problem. A wholesale toy firm has rented the entire fifth floor of a contemporary office building. The floor is to be subdivided to provide for both the sales and administrative activities.

REQUIREMENTS

The sales department needs a large exhibit area for the display of toys and a series of adjoining alcoves for the use of salesmen. The administrative section is to be segregated and provision made for executives' rooms, stenographic pool and storage facilities.

The firm wants to use movable walls so that space division, particularly in the sales department, can be rearranged from time to time. Also the movable walls should be of the type that can be painted and redecorated at frequent intervals to provide for seasonal merchandising changes.

SOLUTION

The reception room and exhibit area is given a central location. It runs from the elevator lobby to the opposite window wall. Along one side is a series of sales alcoves with free standing partitions 7' 6" high. On the other side of the exhibit area is a floor-to-ceiling partition containing shadow boxes for small displays. Behind this 12' 0" partition is the administrative section.

This entire layout is planned on a 4' 0" module using standard Johns-Manville Movable Wall units.

For free standing partitions, Johns-Manville Class "A" Movable Walls were used. These units are factory-fabricated noncombustible panels 1³/₄" thick. Panels are erected independently and are completely interchangeable.

For the floor-to-ceiling partitions, Johns-Manville Imperial Movable Walls were used. These consist of fireproof panels attached to steel studs. Thickness can vary from 3%" up to practically any thickness required. This type of partition can be carried to heights of 20' and higher.

Johns-Manville Sanacoustic[®] units were selected for the acoustical ceilings and J-M Terraflex[®] Vinyl Tile for the decorative flooring.

TECHNICAL DATA

For illustrated brochure "Johns-Manville Asbestos Movable Walls" write to: Johns-Manville, Box 158, New York 17, N. Y. In Canada, Port Credit, Ontario.

JOHNS-MANVILLE MOVABLE WALLS



Tested, with standard door under actual operating conditions, the new Sanymetal "7950" Hinge showed no appreciable wear of operating parts after opening and closing over 1,000,000 times!

LOOK FOR THIS

NAMEPLATE WHICH IDENTIFIES EVERY SANYMETAL INSTALLATION UNRESTING

Sanymetal ENGINEERING

AGAIN IMPROVES

the most satisfactory

toilet compartment hinge there is

1,000,000

over 301,000 cycles of operation without appreciable wear

Here is an example of how Sanymetal's research keeps Sanymetal Toilet Compartments leaders in engineering and design quality:

Though no Sanymetal Concealed Hinge was ever reported to have caused service trouble – Sanymetal engineers sought to improve even this highly satisfactory design.

The key to major design improvement was found when the material "Zytel" became available. Using this new material, it was possible to make two simple cams replace a metal assembly including a yoke, a cam ramp, 2 rollers, and ball bearings. The new hinge with Zytel cams is more compact, smoother in operation, and tests to over 3 times the usage which was considered "lifetime" for the previous design.

The Sanymetal "7950" Hinge has controlled action so the door comes to rest at any desired position, *independent* of door weight (which varies with width), and it does not cause the door to rise or lower when swung (preserving an even, architecturally pleasing line).

It is through such advanced design and engineering by Sanymetal, that you get the important improvements in toilet compartments. Sanymetal has introduced such improvements as Epon primers, BRIDGECORE insulation, extruded aluminum bracket supports, and the Sanymetal "8800" Concealed Latch – all within the last 18 months. Each one was tested and proved satisfactory, capable of extending the life of the product and minimizing maintenance. To get these features at no extra charge, specify "Sanymetal". They save in long-run cost.

New brochures describe Sanymetal's "BRIDGECORE" insulation and "8800" Concealed Latch. Write for them, and for Catalog 96, which explains other important details of quality toilet compartment construction.



Representatives in all principal cities • In Canada: Westeel Products Ltd., Montreal, Toronto, Winnipeg

PRODUCTS COMPANY, INC. 1687 Urbana Road, Cleveland 12, Ohio



Abroad

Over a rude, low fence rise the Institute's striking dormitory (right), faculty quarters (center), and school buildings (background).

Details of the strongly framed dormitory (right) and the gracefully arched primary school (below) show the versatility of Vigano's reinforced concrete structure.





MILANESE BOYS' TOWN

On the outskirts of Milan a young Italian architect, Vittorio Vigano (40), has designed and built a school for boys that is as impressive in its physical appearance as it is in its approach to learning. The school is one of the world's boldest examples of structureconscious contemporary architecture; yet it is even more significant as a sympathetic environment for progressive education.

The Marchiondi Spagliardi Institute, consisting of five completed buildings and space for three more, is no ordinary boys' school. Nor is it, despite the fact that 300 boys are housed there for corrective purposes, a conventional reform school. It is rather a





charitable organization, financed jointly by the city of Milan and by private funds, for the rehabilitation of boys between the ages of 8 and 16 whose lives and minds have been disturbed by domestic difficulties. The Institute, bombed out of its ancient downtown buildings during World War II, viewed the move to the suburbs as an opportunity to build a new home for itself that would also be the most therapeutic environment for the boys in its charge.

Architect Vigano's rugged, reinforced concrete vaults and stark exterior frames complement the Institute's rough-andready program. The program is long on physical fitness and independence, short on imitative homeyness (note the acrobatic, suspended balconies at right and the bareness of the entrance hall, above). The program is also long on selfdiscipline, short on numbers of supervisors per boy (note the supervisor-free, 12-bed dormitory, above). And despite the Institute's Spartan air, there are many unexpected delights (such as the occasional opening-up of a hallway to become an outdoor court, far right).

The whole plan of the Institute (opposite page) is intended to encourage a personal development that is ordered without being restrictive. There are no high walls around the Institute.

The facade of the four-story dormitory is marked by projecting balconies which house washroom facilities for the two dormitory floors. Window sashes are painted in brilliant reds, yellows, and blues.



Adjoining the dormitory, the long and narrow social room (far left) is divided into several small areas. And the dormitory rooms (left) are designed to contain no more than 12 beds. At the rear are stairs up to the suspended washrooms.



Abroad



Movable desks allow maximum seating flexibility, minimum formality.

The plan of the Institute (see model, below) reveals a series of buildings, courts, and passageways that are tightly ordered yet greatly varied and visually exciting. The chapel (cylindrical building in the foreground), for instance, is totally different in form and structure from its neighbors. Purpose of the Institute's stylistic uniqueness is to give the boys an environment that seems theirs alone. Of the eight major buildings shown, only the extracurricular activities building, the chapel, and the theater-gymnasium remain to be completed.

One of the Institute's courts (right) shows the subtle interplay of structure and enclosure that is a chief attribute of the Institute. The brick walls are scaled to emphasize the intimate character of the court, as compared with the immense concrete columns that rise above it.





The heavily corroded panel was not Bonderized; the virtually undamaged panel was. The panels were scratched and then subjected to the A.S.T.M. standard salt-spray test. In the finish over Bonderite, rust stopped at the scratch-mark — but it spread extensively over the other panel. Continuous 8-day salt-spray test proves prime advantage of Milcor steel roof deck



B-deck has wide ribs for maximum strength and rigidity. Safely carries normal loads over spans up to 10'. Wide purlin-spacings cut framing costs.

Field painting costs cut in half with Milcor Bonderized Deck!

Prime paint that withstands salt spray for 192 hours certainly can take the wear and tear of shipping, storage, and erection. This often damages ordinary factory-applied primer.

Milcor deck is Bonderized, fortified against corrosion. Then it is flow-coated with an epoxy-resin enamel, ovenbaked to abrasion-resistant hardness-for the most durable finish ever applied to roof deck!

One field coat of paint on Milcor deck usually does the job of two coats on ordinary decks. As you know, a finished paint job can be no better than the prime coat.

See Sweet's, section 2f/INL - or write for catalog 240.



It pays ... in many ways ... to specify Milcor Steel Building Products

MILCOR WALL PANELS: Sweet's, section 3b/In MILCOR CELLUFLOR: MILCOR ACOUSTIDECK: Sweet's, section 11a/In MILCOR RIBFORM: METAL ROOF DECK: MILCOR METAL LATH: Sweet's, section 12a/In MILCOR ACCESS DOORS: Sweet's, section 16J/In MILCOR HOLLOW METAL

Sweet's, section 2a/In Sweet's, section 2h/In Sweet's, section 2f/INL

Sweet's, section 15b/In DOORS AND FRAMES:



You can get Class 1 fire ratings for roofs over Milcor deck, by using Milcor's new non-piercing insulation clip that eliminates asphalt coating.



Member of the ATTATD Steel Family PRODUCTS COMPANY INLAND STEEL

DEPT. C, 4031 WEST BURNHAM STREET, MILWAUKEE 1, WISCONSIN ATLANTA. BALTIMORE, BUFFALO. CHICAGO. CINCINNATI, CLEVELAND, DALLAS, DENVER. RD-21 DETROIT, KANSAS CITY, LOS ANGELES, MILWAUKEE, NEW ORLEANS, NEW YORK, ST. LOUIS, ST. PAUL.

ECONOMICAL!



On a square foot basis Union HONEYCOMB faced with sheets of hardboard, metal, wood, plastics, asbestos or fiberglas -is one of the most inexpensive "sandwiches" known. Yet the panels formed withstand far in excess the normal loads for conventional structures.

Minimum cost

HONEYCOMB's design simplicity cuts labor and handling expense. With few component parts roof, floor and wall panels go up fast - with minimum onsite refitting and finishing.

Booklet AF-1 illustrates the structural and costsaving advantages of Union HONEYCOMB. Write for a free copy.



Acme Industries, Inc
Aetna Steel Products Corp. 64 Jamian Advertising & Publicity, Inc.
Airtemp Div. (Chrysler Corp.)
Allianceware, Incorporated 81 Waldie & Briggs, Inc.
Allied Chemical Corporation (Barrett Division)
Aluminum Company of America
American Gas Association
American Sisalkraft Corp231, 232 Sutherland-Abbott
American Window Glass Div. American-Saint Gobain Corp
Armstrong Cork Company
Armstrong Cork Company
Barrett Division
Blank & Co., Inc., Frederic 14 Riedl and Freede, Inc.
Blickman, Inc., S
Bradley Washfountain Co 164 Kirkgasser-Drew Advertising
Brown Company 186 J. M. Mathes, Inc.
Bruning Co., Inc., Charles
Burgess-Manning Co 16 Merchandising Advertisers, Inc.
Canal Electric Motor Tra
Canal Electric Motor, Inc
Carrier Corp
Ceco Steel Products Corp
MacFarland, Aveyard & Co.
Chrysler Corp. (Airtemp Div.)
Columbia Electric & Mfg. Co
Columbus Div. of North American Avia- tion, Inc., The
Committee on Steel Pipe Research 28 Smith, Taylor & Jenkins, Inc.
Connor Engineering Corp 56 Wm. Schaller Co., Inc.
Darlington Brick Co., Div. of Central Commercial Co. 12 The Fensholt Advertising Agency, Inc.
Dunham-Bush, Inc. 74 William Schaller Co., Inc.
du Pont de Nemours & Co., E. L
Duraloom Carpet Mills, Inc 31 Jill Berryman
Dur-O-Wal

Ad Index

Faber-Castell Pencil Co., Inc., A. W 10 J. M. Kesslinger & Associates
Fairhurst Co., Inc., John T 166 J. C. Bull, Inc.
Fenestra Incorporated
Flynn, Mfg. Co., Michael
Formica Corp
Freyssinet Affiliates
Gallaher Company, The
General Binding Corp
General Tire & Rubber Co. (Building Materials Division)
Glynn-Johnson Corp
Great Lakes Carbon Corporation 200 Darwin H. Clark Co,
Grover Co., The
Hako Building Products
Haskelite Mfg. Corp 190 J. Walter Thompson Co.
Haughton Elevator Co
Hauserman Company, E. F 48 Meldrum & Fewsmith, Inc.
Haws Drinking Faucet Co 178 Pacific Advertising Staff
Hillyard Chemical Company 168 Fardon, Miller & Fardon Advertising
Hubbell, Inc., Harvey 66 Peck-Adams Inc.
Hunter Douglas Div. of Bridgeport Brass Co
Inland Steel Products Co
In-Sink-Erator Co
Jamison Cold Storage Door Co 183 Beaumont, Heller & Sperling, Inc.
Johns-Manville Corporation
Johnson Service CoCover IV St. Georges & Keyes, Inc.
Kaiser Aluminum & Chemical Corp 20, 21
Young & Rubicam, Inc.
Kentile, IncCover III Benton & Bowles, Inc. Keystone Steel & Wire Co
Fuller & Smith & Ross, Inc.
Libbey-Owens-Ford Glass Co.
157, 158, 159, 160, 161, 162 Fuller & Smith & Ross, Inc.
Alfred Auerbach Associates
Emery Advertising Corp. 31

1

Italic line indicates advertising agency

Mahon Company, The, R. C
Matot, Inc., D. A
McKinney Mfg. Co
McLouth Steel Corporation 179 Denman & Baker, Inc.
Meadows, Inc., W. R
Melchior, Armstrong, Dessau Co 151 Agency Direct.
Michaels Art Bronze Co., Inc., The 90 Seery & Ward Advertising
Mills Company, The
Minneapolis-Honeywell Regulator Co. Foote, Cone & Belding 191, 192, 193, 194
Montgomery Elevator Co
Mo-Sai Associates
Mosaic Tile Company, The
Moynahan Bronze Co
Mueller Brass Co., The

National Gypsum Company
National Lumber Manufacturers Assn 218 Vansant, Dugdale & Co., Inc.
National Tube Division (United States Steel Corporation) 156 Batten, Barton, Durstine & Osborn, Inc.
Nesbitt, Inc., John J 211 The Aitkin-Kynett Co.
North American Aviation, Inc. (The Columbus Div.)
Norton Door Claser Co
Overly Manufacturing Co
Owens-Illinois Glass Co. (Kimble Glass Co., Subsid.)
Peterson Window Corp 187 The Jaqua Company
Pittsburgh Corning Corporation
Pittsburgh Plate Glass Co 176 Batten, Barton, Durstine & Osborn, Inc.
With hand Blats Glass Co. 49

Pittsburgh Plate Glass Co. Batten, Barton, Durstine & Osborn, Inc.	49 0.
Powers Regulator Co	2, 63
Pyle-National Co., The	172

Republic Steel Corp	217
Reznor Mfg. Co. Kight Advertising, Inc.	86
Rixson Company, Oscar C Edwin E. Geiger	30
Bobbins Flooring Co. Schmidt & Sefton Adv.	196

O'Grady-Andersen-Gray, Inc.	
Sanymetal Products Co., Inc., The 222 Clark & Bobertz, Inc., Hickox-Donnelley Div.	
Sargent & Co	
Division of McCann-Erickson, Inc.	
Schlage Lock Company	
Shlagro Steel Products Corp	
Simpson Logging Co. 230 Lennen & Newell, Inc.	
Sloan Valve Company	
Smitheraft Lighting Division	
Standard Dry Wall Products, Inc 15 Bert J. Long Advertising Agency	
Standard Electric Time Co., The 152 William Schaller Co., Inc.	
Straits Products, Inc	
Stran-Steel Corporation 199 Campbell-Ewald Co.	
Structural Clay Products Institute 207 Wildrick & Miller, Inc.	
Summitville Tiles, IncCover II Belden & Frenz, Inc.	
Swartwout Company, The	
Swedish Crucible Steel Co 219 Clark & Bobertz, Inc.	

Temprite Products Corp I Watkins-Rogers, Inc.	.77
Tile Council of America	77
Tyler Refrigeration Corporation	.87
Union Bag-Camp Paper Corp	228
United States Ceramic Tile Co The Grisvold-Eshleman Co.	19

Wasco Products, Inc
Westinghouse Electric Corp 169, 170, 171 Fuller & Smith & Ross, Inc.
Weverhaeuser Sales Company 206 Colle & McVoy
Woodard Sons, Lee L



CUSTOM-LINE Aluminum HAT and COAT RACKS

Tailored to fit any given wall area. Die cast aluminum brackets adjustable to exact centers . . . also adjustable as to height without removing from wall.

3 BASIC SHELVES



Write for Catalog CL 48

VOGEL-PETERSON CO. 1121 W. 37th St. • Chicago 9, Ill.



NEW

SIMPSON STRIATED FORESTONE* ACOUSTICAL TILE

SEE THE DIFFERENCE

Rich textured surface is striated over handsome deep-fissures, creating a ceiling of dramatic three dimensional beauty.

HEAR THE DIFFERENCE

New tile efficiently controls excessive noise. NRC ratings from .55 to .65 according to thickness and method of installation.

COMPARE THE DIFFERENCE

This distinctive new acoustical tile offers many unique design possibilities. Attractive straight line finish invites interesting patterns such as checkerboard, diamond, parquet and diagonal arrangements.

LOW COST-LONG LASTING

Initial cost compares with other woodfiber products. Tiles can be repainted without appreciable loss of efficiency or fissured beauty...exclusive Biotox process protects against mold, mildew, termites and dry rot. Size is 12" x 12" in 9/16" and 3/4" thicknesses with beveled edge, kerfed and rabbeted.

For more information, see your Simpson Certified Acoustical Contractor (check the Yellow Pages), or write: Simpson, 1009C White Bldg., Seattle, Washington.

